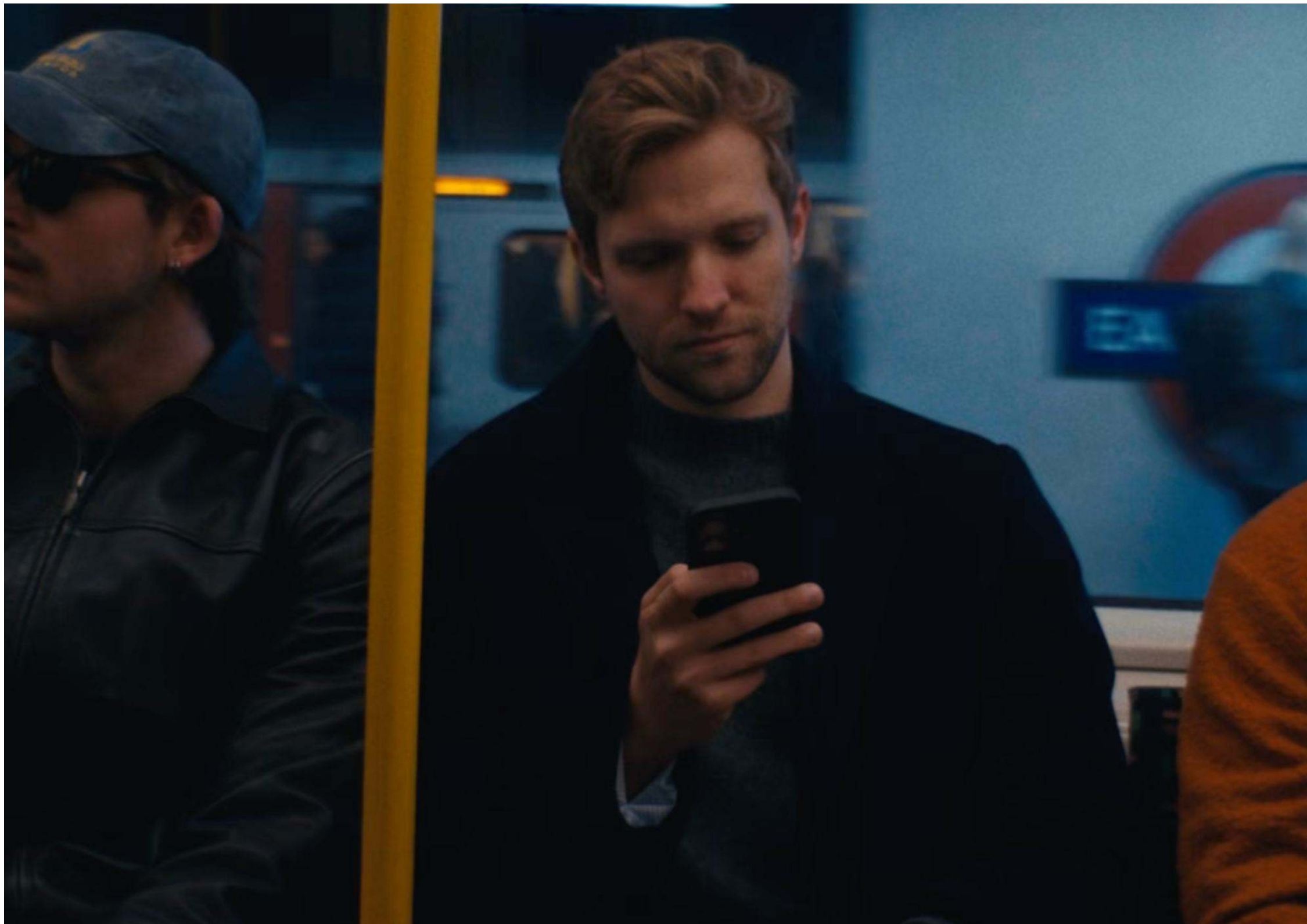
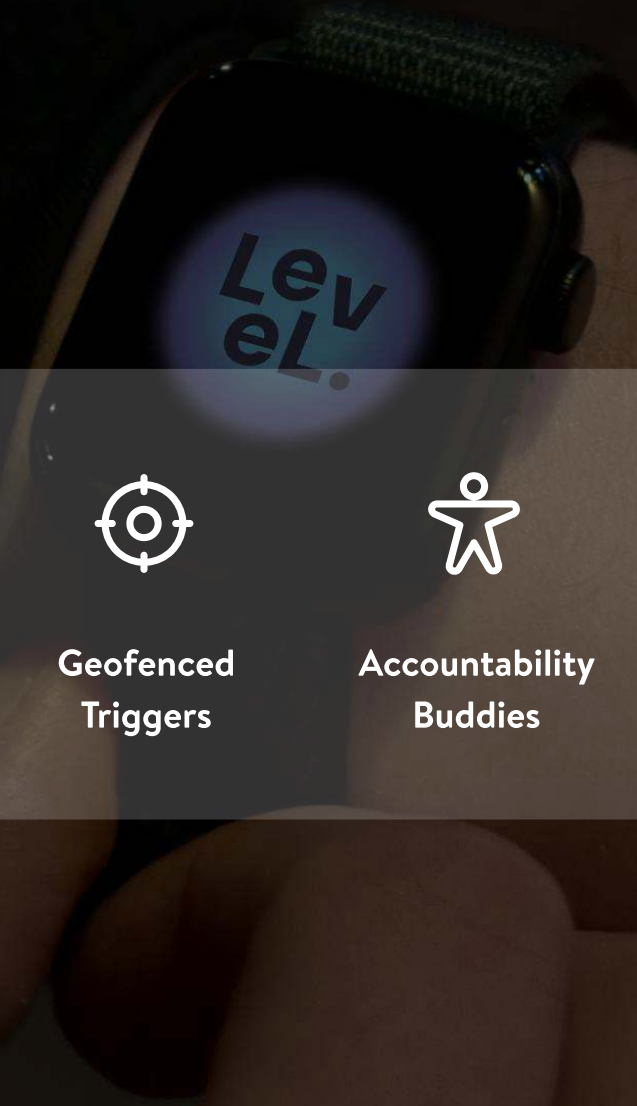


# Level





the gambling companion

by thirteen.

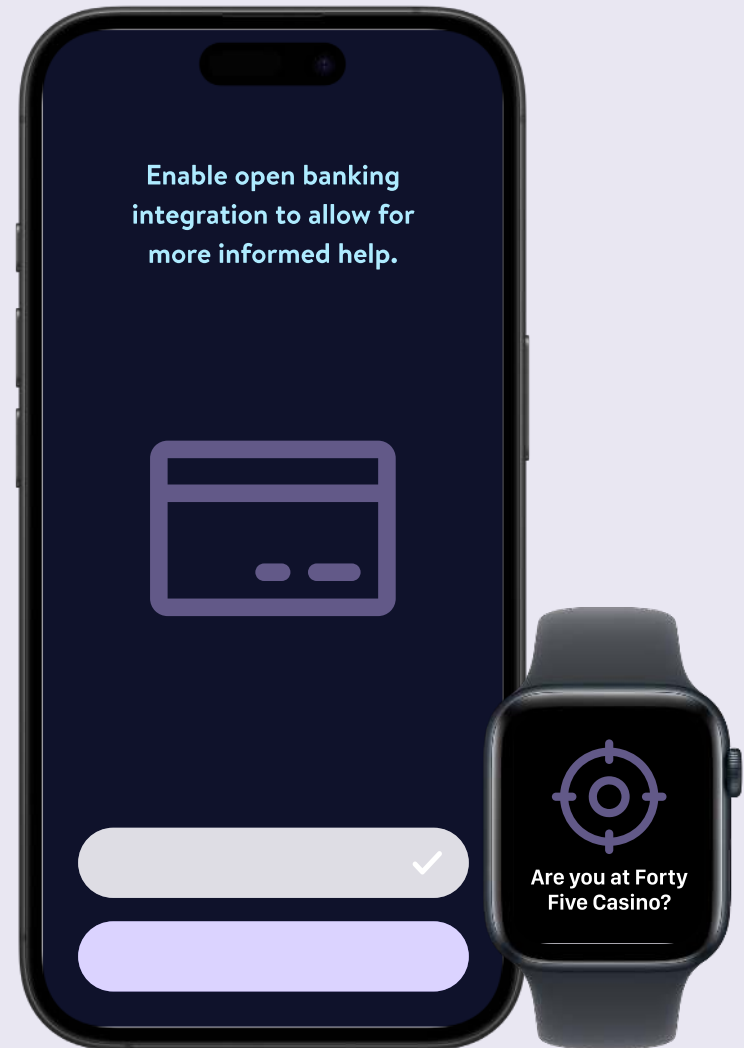


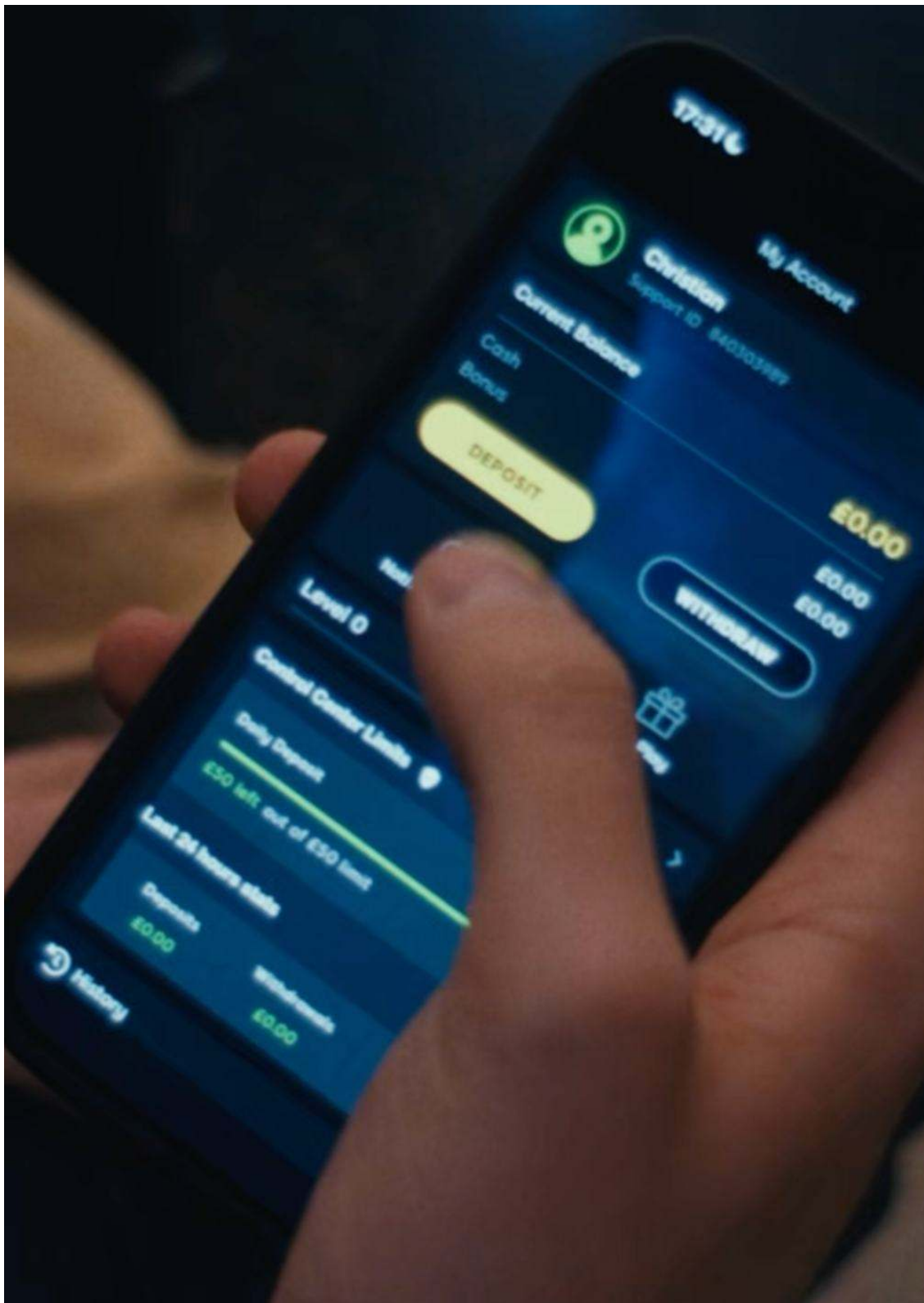


Level

-   
**Open Banking Integration**
-   
**Geofenced Triggers**
-   
**Accountability Buddies**
-   
**Adaptive Entrainment**

**1. Level safeguards players when gambling online or at venues**





## Open banking integration

This makes real-time monitoring of gambling transactions possible.

Level uses Apple's FinanceKit SDK and TrueLayer's API to detect these transactions.

Level Companion immediately activates and prompts the player to enable in-session protection.

Deposit frequency, Spend/Income ratio and Transaction timing are also monitored for long-term safeguarding.



## Geofenced triggers



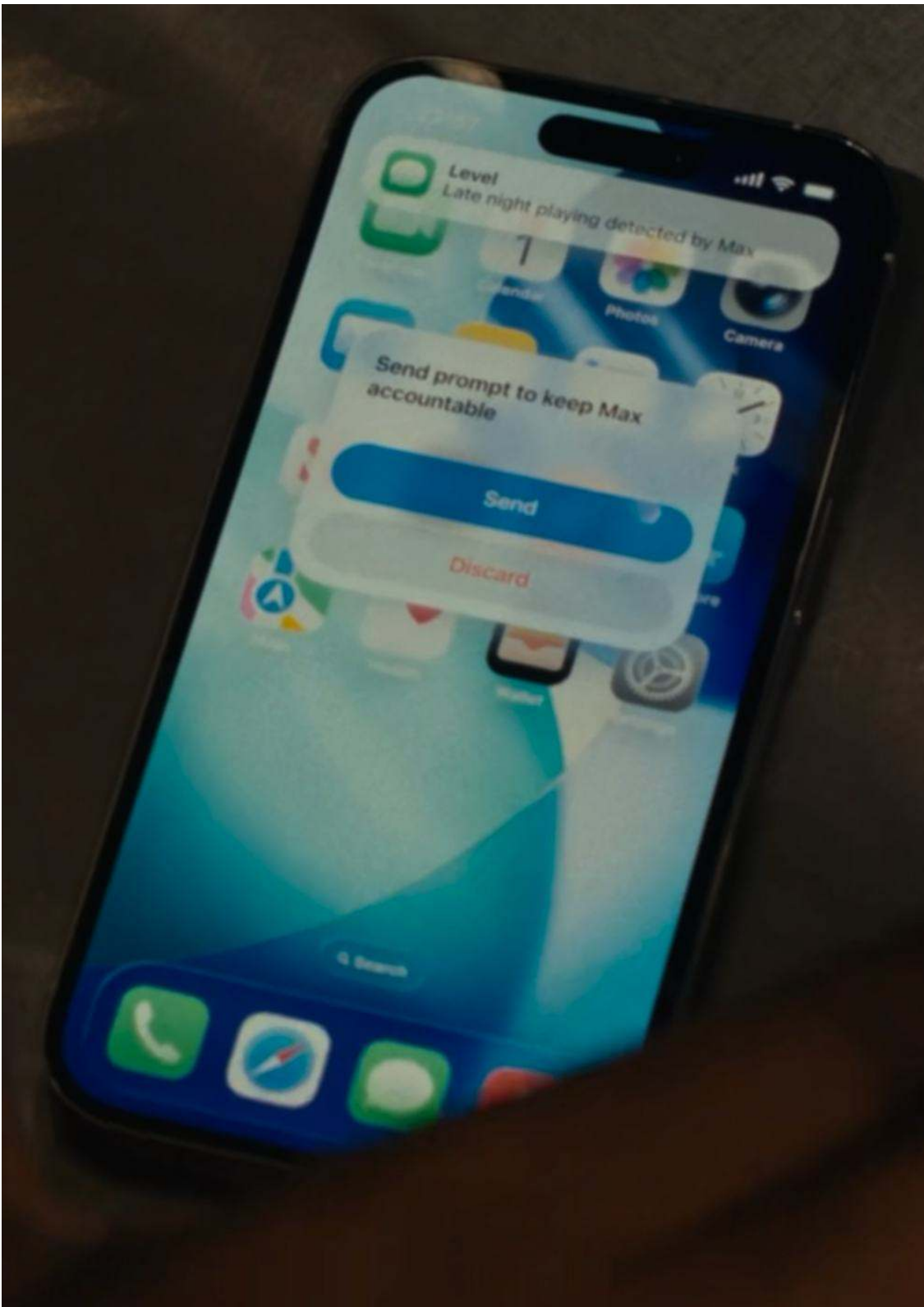
Level uses location tracking and GPS. A database of gambling venue locations are stored, labelled and “Geofenced”.

Level detects when a player’s location remains in a “Geofence” for longer than coincidental.

Level Companion immediately activates and prompts the player to enable in-session protection.

Over time, players can contribute to the gambling venues map.





## Accountability Buddies

Level involves your trusted community.

Players nominate accountability buddies like they would for workout or saving apps.

Structured accountability systems nearly triple the likelihood of habits being maintained compared to people with no such support.

Additionally, Level always notifies the player's buddies if they engage in irresponsible gambling (as pre-agreed by the player).

1. Level safeguards players when gambling online or at venues
2. Reinforces responsible gambling behaviour via Accountability Peers
3. **Stabilises mood and sharpens cognition via Rhythm entrainment**





## Haptic entrainment



Level transforms smartwatch haptics.

The haptic engine now becomes a vibrotactile interface which delivers BPM sequences to the player's wrist - a place with a strong pulse.

Many describe the effect of this as quasi rhythm entrainment. It has been used by the likes of Dopple, Apollo Neuro and Braintap.

Our own studies show that players are calmer, more in control, and less financially destructive because of it.

1. Level safeguards players when gambling online or at venues
2. Reinforces responsible gambling behaviour via **Accountability Peers**
3. Stabilises mood and sharpens cognition via **Rhythm entrainment**
4. **Adapts to player for precise support via Stress monitoring**





## Adaptive calming



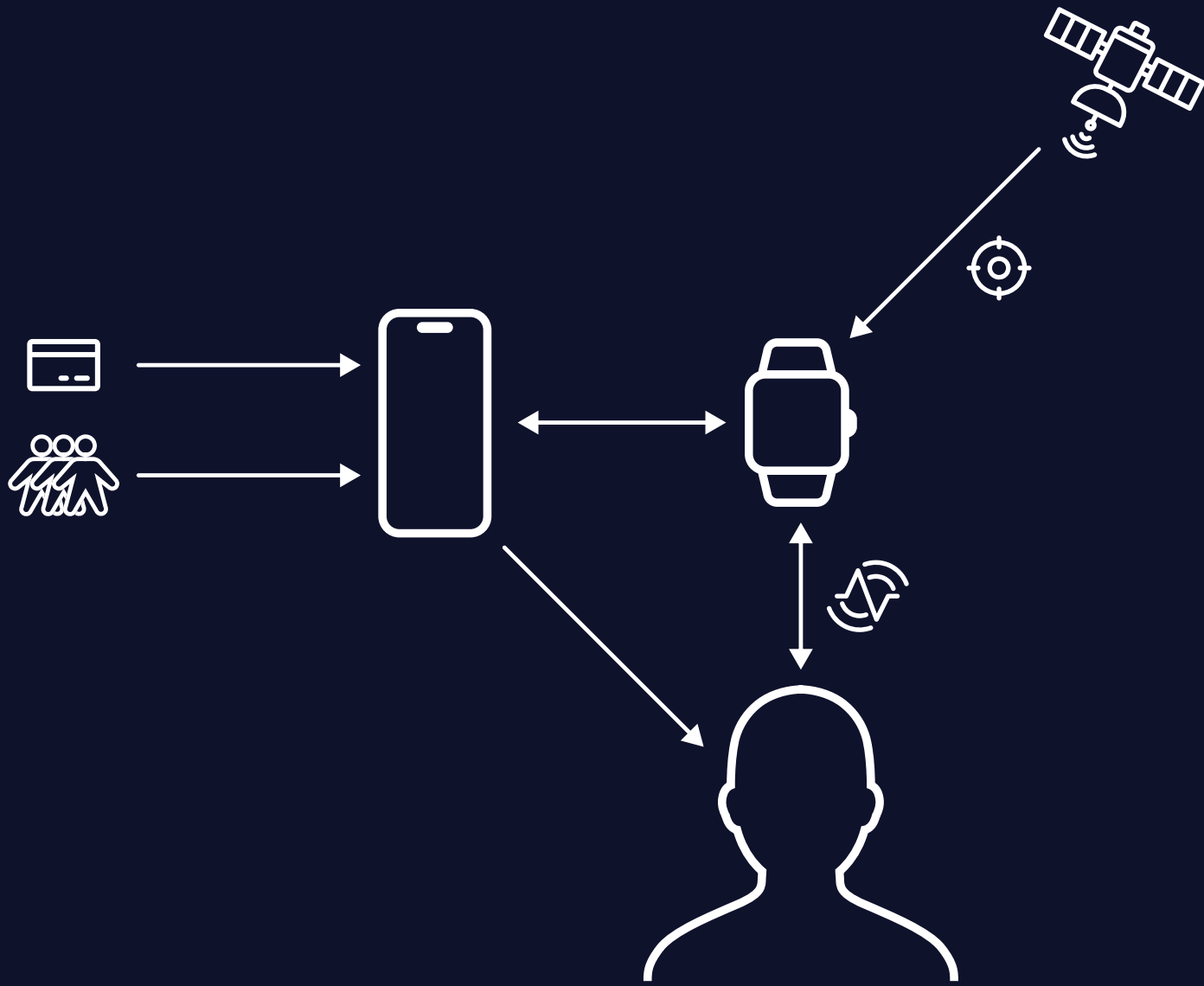
Level monitors player physiology.

HRV is a widely accepted indicator of stress & anxiety, it is derived from changes in HR.

Level detects sudden changes in the stress & anxiety of a player.

Level Companion immediately adapts, commencing the enhanced calming effect.

This is done automatically, in order to not distract the player or make them self-conscious.





### VIP

Lost £17,000 on roulette that morning

“Personally not for me, but perhaps more useful for people who rely more on winning...”



### Phillip (Student)

Social poker player & sports bets

“I’ve never seen anything like this ... I would use it and I think social proof or citable evidence would encourage others also...”



### Punter

Was up until 5am prior night and vowed to be on weekend break

“Don’t gamble... anything that helps these young ones is \*thumbs up\*...”



### Omar (Retired)

Casual casino & online gambling

“I see this as more of a companion, suggest to not position it as a tool.”



### Tourist

Visited, played up to £20, left

“...Yes! When I play, I feel very \*gestures motions of tension / anxiety\*...”



### Felix (Regular)

Omni-channel, experienced

“...I’ve seen it all. Keeping my friends accountable after big losses - especially wins - is vital to staying on track...”



**In the UK, 22 million people engage  
in active gambling games every week.**

**Globally 880 million people engage in  
active gambling games frequently**

**9% of players currently have a  
gambling problem / addiction.  
Far more players are at-risk.**

# Problem indicators (industry agreed terms)

## Financial

Loss Chasing

Gain Dependency

Sustained Losses

## Cognitive

Compulsive

Continuous

Unhinged

## Behavioural

Secretive

Undisciplined

Deprivation



# How Level addresses these problems

## Financial



Monitors this for in-session  
(rhythm entrainment) &  
longterm (play stats) support

## Cognitive



Rhythm entrainment  
keeps you calm and  
heightens self-control

## Behavioural



Accountability peers helps  
you avoid playing outside  
limits and in isolation

A discreet,  
safeguarding  
companion.

Designed to run on  
hardware already  
owned by 91 million  
players globally.

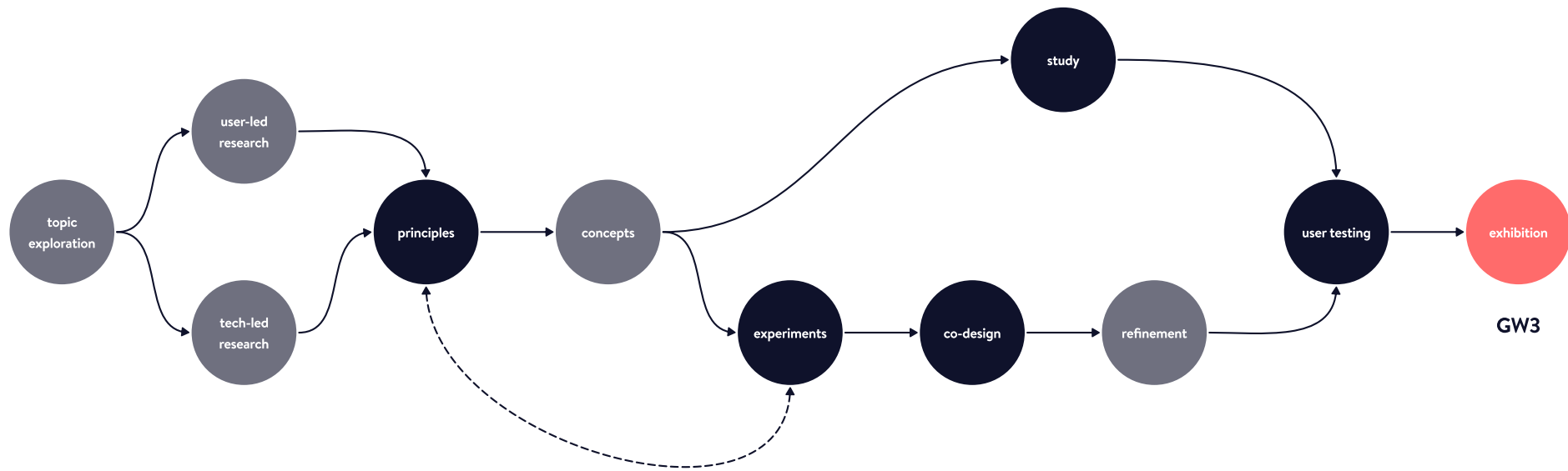


# Our Thesis

Taboos around sin industries restrict innovation and thoughtful problem-solving.

Interventions should empower rather than coerce, avoiding narratives that depict habits as “evil” or users as patients.

# Our Journey





Principle 1:

**Rhythmic Entrainment for  
Stress and Anxiety Reduction**

Principle 2:

**Targeted Acupoint Stimulation for  
Emotional and Cognitive Regulation**

Principle 3:

**Tangible Feedback for  
Behavioural Awareness**

Principle 4:

**Sensory Filtering for  
Impulsivity and Arousal Modulation**

P1

### Rhythm entrainment reduces stress & anxiety

Supporting Research: The calming effect of a new wearable device  
(Article number: 2285 (2017) 95 Citations)

- Experienced a significantly smaller increase in physiological arousal (measured by skin conductance)
- After speech preparation, users also reported significantly smaller increase in anxiety vs controls
- Users rated the speech preparation task as significantly less stressful than those in the control group.

This calming effect can be sustained in-session (not in preparation)

Calmer players =  
A. More focused  
B. Emotionally stabilised

More focus = better performance

Emotional stabilisation = modulation of highs and lows = less addictivity of variable reward schedule games (which prey on this)

P2

### Invasive Acupoint therapy can treat problem gambling

Supporting Research: The Role of Acupuncture in Treating a Patient with a Gambling Disorder — PMC9595637

Non-invasive Brain Stimulation for Gambling Disorder: A Systematic Review - 2020.00729

- Non Invasive and Non Medical (e.g. puncture or tDCS) stimulation can notably influence physiological circuitry
- This type of stimulation can be applied for immediate, preventative effects (not merely treatment)
- Non-invasive acupoint therapy can achieve similar effects in session (preventative), not solely as treatment (rehabilitative)

Resonance Massage for Headaches: Haptic/Musical Vibrochord Device (Conference Abstract)

Changes in Regional Brain Homogeneity  
Acupressure Applied on the Extra-1 (Yintang)

- Electroacupuncture at GV20 increases regional brain homogeneity (ReHo) in areas like the orbital frontal cortex, cingulate, precentral cortex, and precuneus.
- While reducing activity in areas such as the anterior cingulate, thalamus, and putamen.
- Acupressure or acupuncture at Yintang (EX-HN3) lowers bispectral index (BIS), indicating reduced stress and increased relaxation, and alters cerebral blood flow velocity in the middle cerebral artery.

Neurobiology will be positively influenced by stimulating GV20 and Yintang via vibrotactile actuators.

Stimulating GV20 and Yintang via vibrotactile actuators, will lead to the following KPIs (if not observable).

P3

### Creating tacit reflections of behaviour increase perceptiveness, thus self-regulation

Supporting Case Studies: Tangible User Interfaces

Supporting Case Studies: Session Visualisation

- Physical, visual, and haptic signals in UI (e.g., dial feedback, pulse, color change) improve perceived consequence by making abstract outcomes tangible.
- Feedback and monitoring (real-time visualisation of progress vs. goals), prompts and cues (timers, avatar status, color bars), and positive reinforcement are the most effective for driving behavior change and awareness of consequences.

It is possible to design tangible representations of interactions/behaviours for our gambling context?

These representations will be:  
A. Intuitively understood  
B. Reinforce good behaviour (self-reflection and awareness) and discourage bad behaviour

Supporting Case Studies: Hybrid and Physical-Digital Reflection Tools.

- Case studies comparing analogue, digital, and hybrid designs show hybrid tools (physical tokens plus digital interface) produce the strongest improvements in self-reflection and awareness.

P4

### Casino Sound & Light significantly impact speed of play

Supporting Research: Effect of Casino-Related Sound, Red Light and Pairs on Decision-Making During the Iowa Gambling Task  
(PMID: 24414096 36 Citations)

- Red light ("warm" colour) increases arousal and risk-taking
- Fast tempo casino sound accelerated betting speed
- Reflective time after losses diminished vs control.
- Combined sound + colour increased the effect on decision speed. It energises play.
- However, the environment did not cause non-gamblers to consistently make more disadvantageous choices (self control not overridden for most participants)

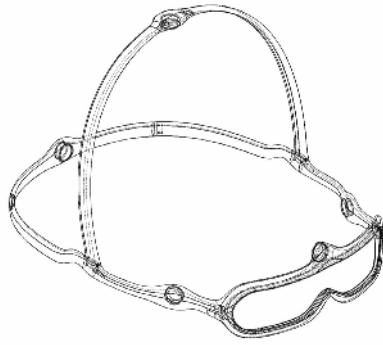
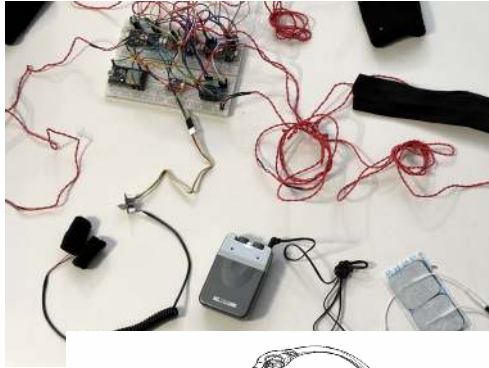
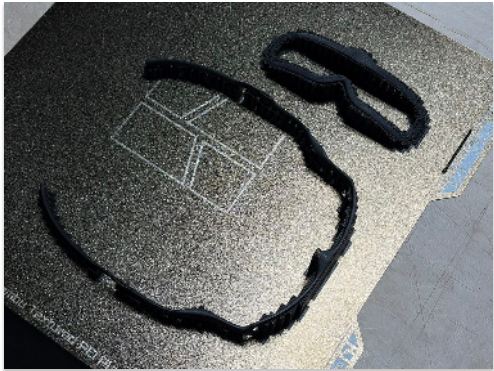
By muting warm colours and fast tempo sounds, the inverse is true

Slower play =  
A. More reflection after bets  
B. More conscious gambling experiences

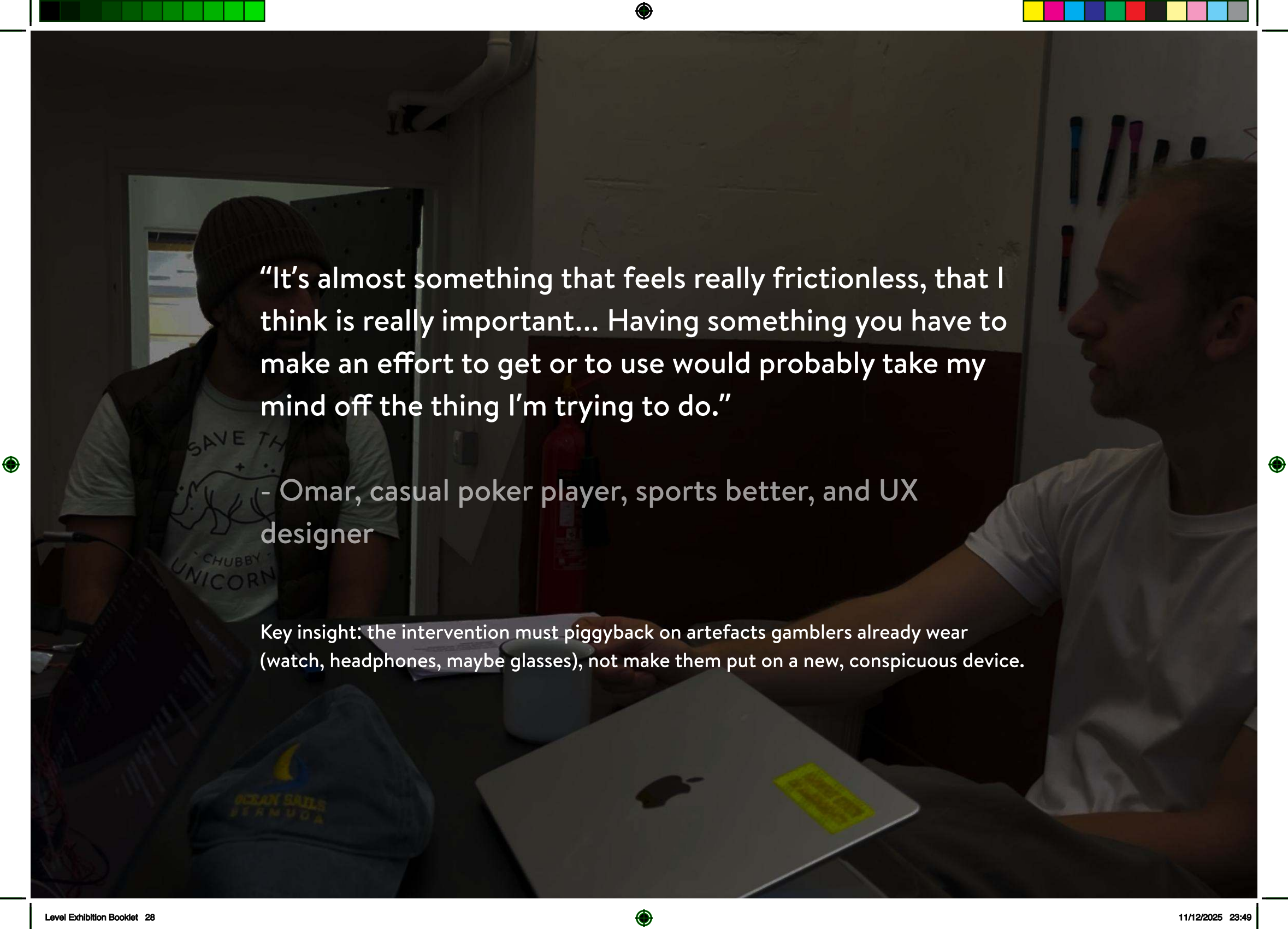
By muting warm colours and fast tempo sounds, the inverse is true

More conscious gambling experiences, more feelings of control and overtime, less risk of one substantial harmful gambling experience or addiction due to passive, carried away gambling









“It’s almost something that feels really frictionless, that I think is really important... Having something you have to make an effort to get or to use would probably take my mind off the thing I’m trying to do.”

- Omar, casual poker player, sports better, and UX designer

Key insight: the intervention must piggyback on artefacts gamblers already wear (watch, headphones, maybe glasses), not make them put on a new, conspicuous device.



existing  
hardware



new  
hardware



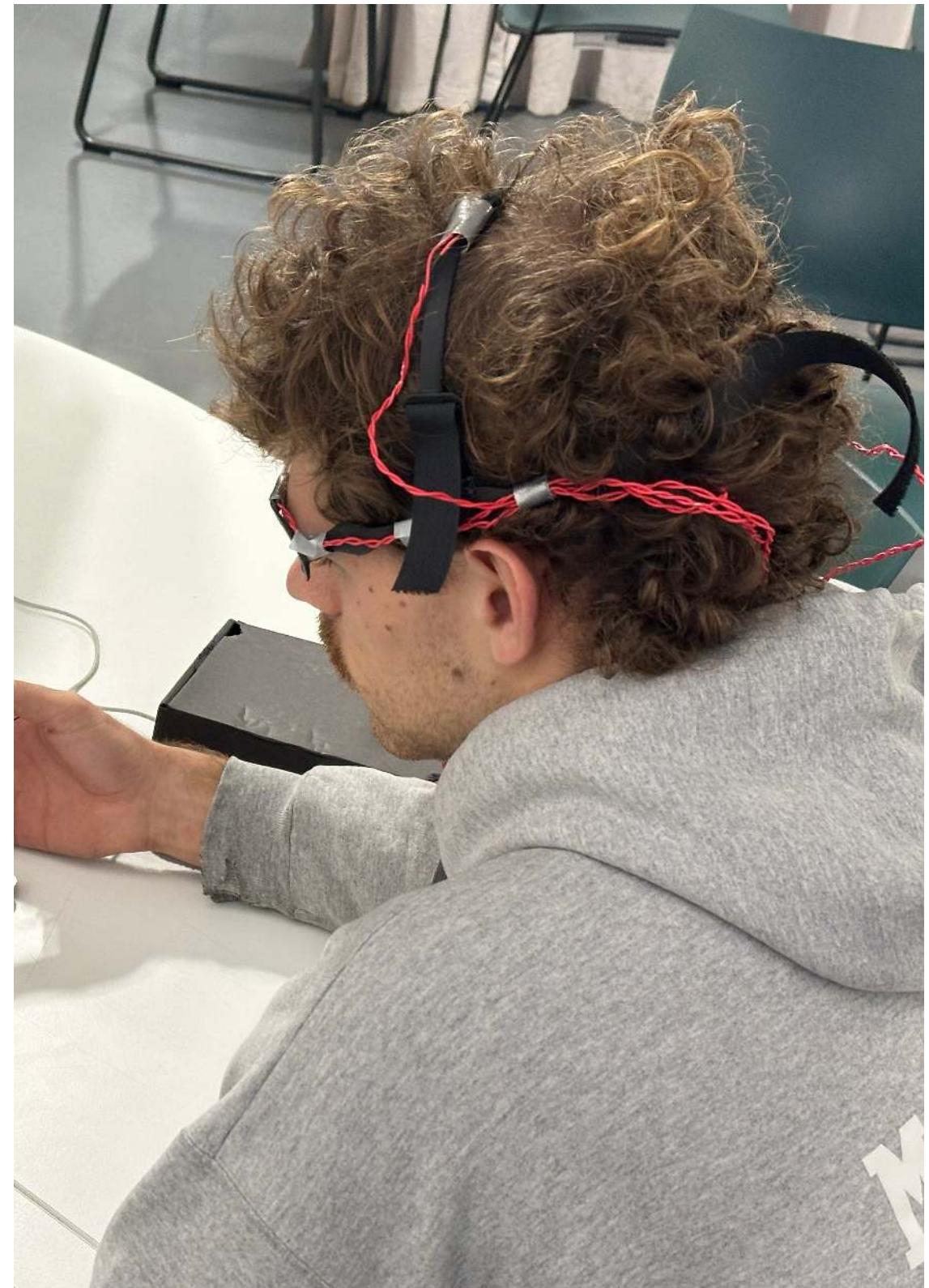
## Study Design: Discreet Wearable Intervention in Gambling Simulation

**Aim:** test a discreet “focus aid” wearable to see if it can subtly influence gambling behaviour and anxiety.

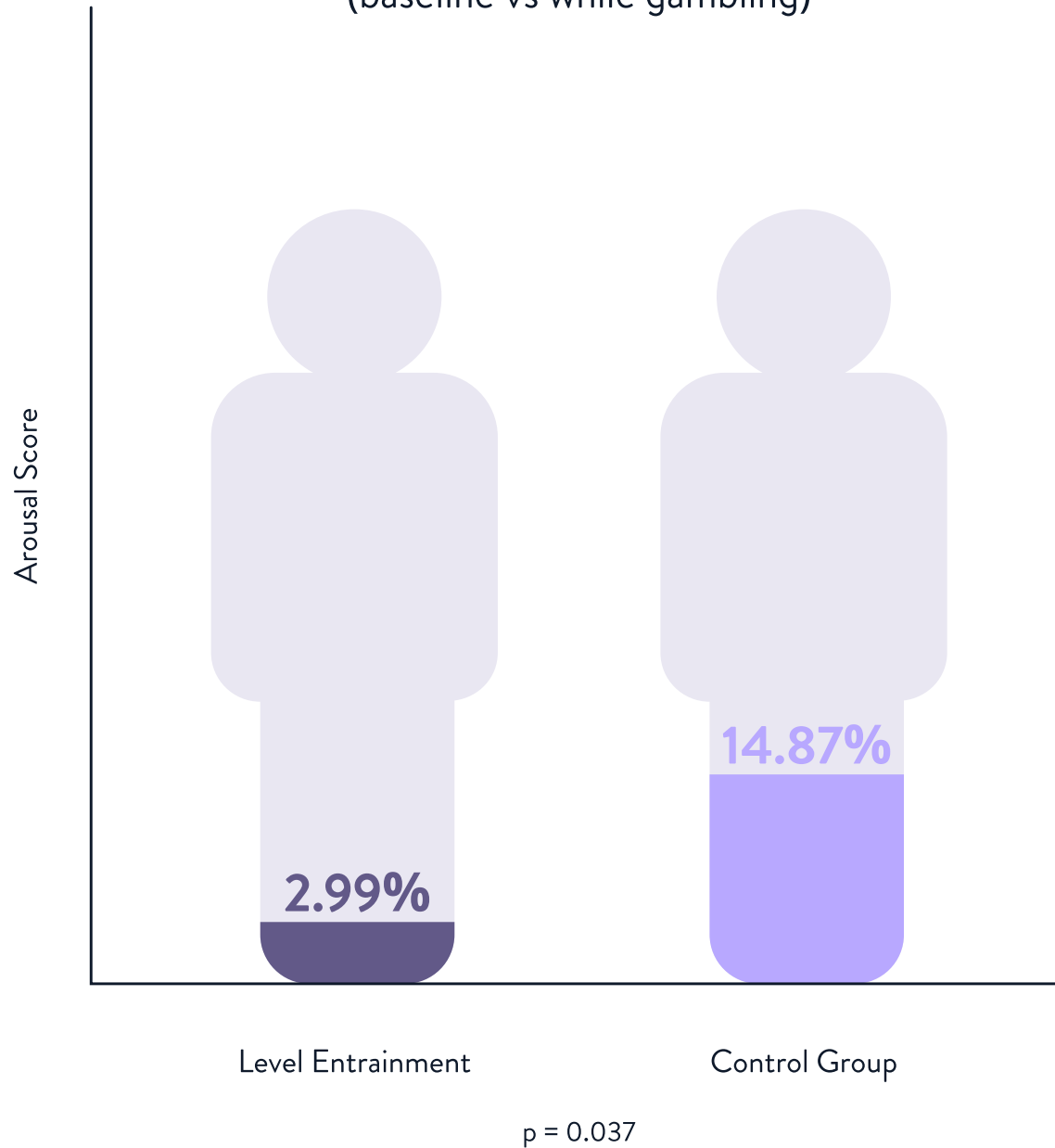
**Design:** single-blind, placebo-controlled lab study with random assignment to active vs placebo device.

**Procedure:** baseline questionnaires + GSR/HR, then slot-machine simulation and Iowa Gambling Task while wearing the device.

**Data Collected:** behavioural choices, physiological responses (GSR/HR), and self-report (gambling severity, impulsivity, anxiety, device experience).



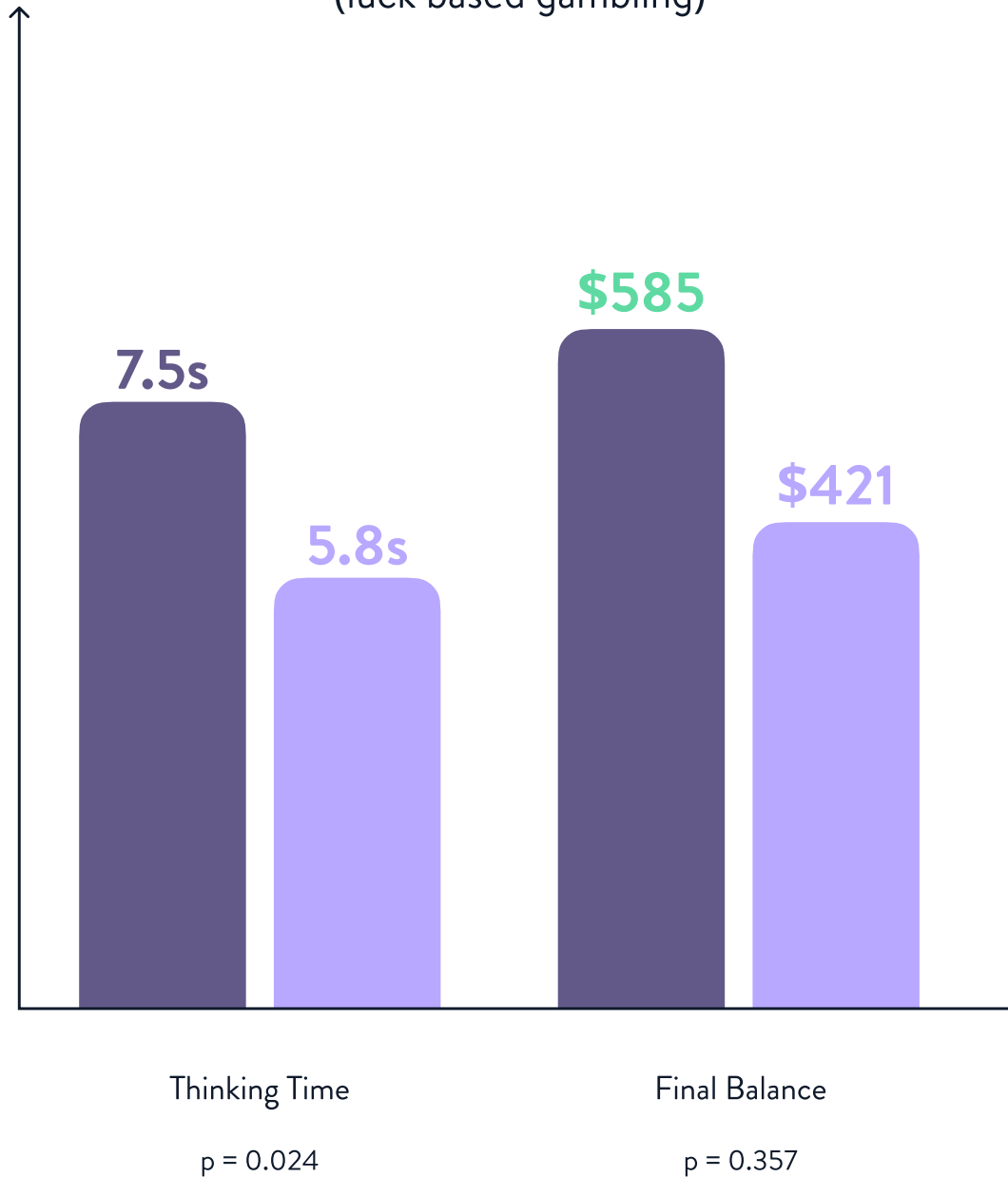
## Change in Player Arousal (baseline vs while gambling)



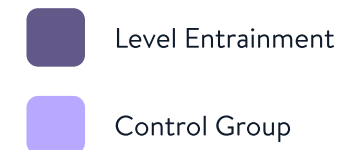
- GSR readings measure arousal.
- Control group median saw a greater change in GSR reading than Level entrainment group.
- GSR can be an indicator of stress, anxiety and excitability which are adverse in gambling contexts.

Level Entrainment  
Control Group

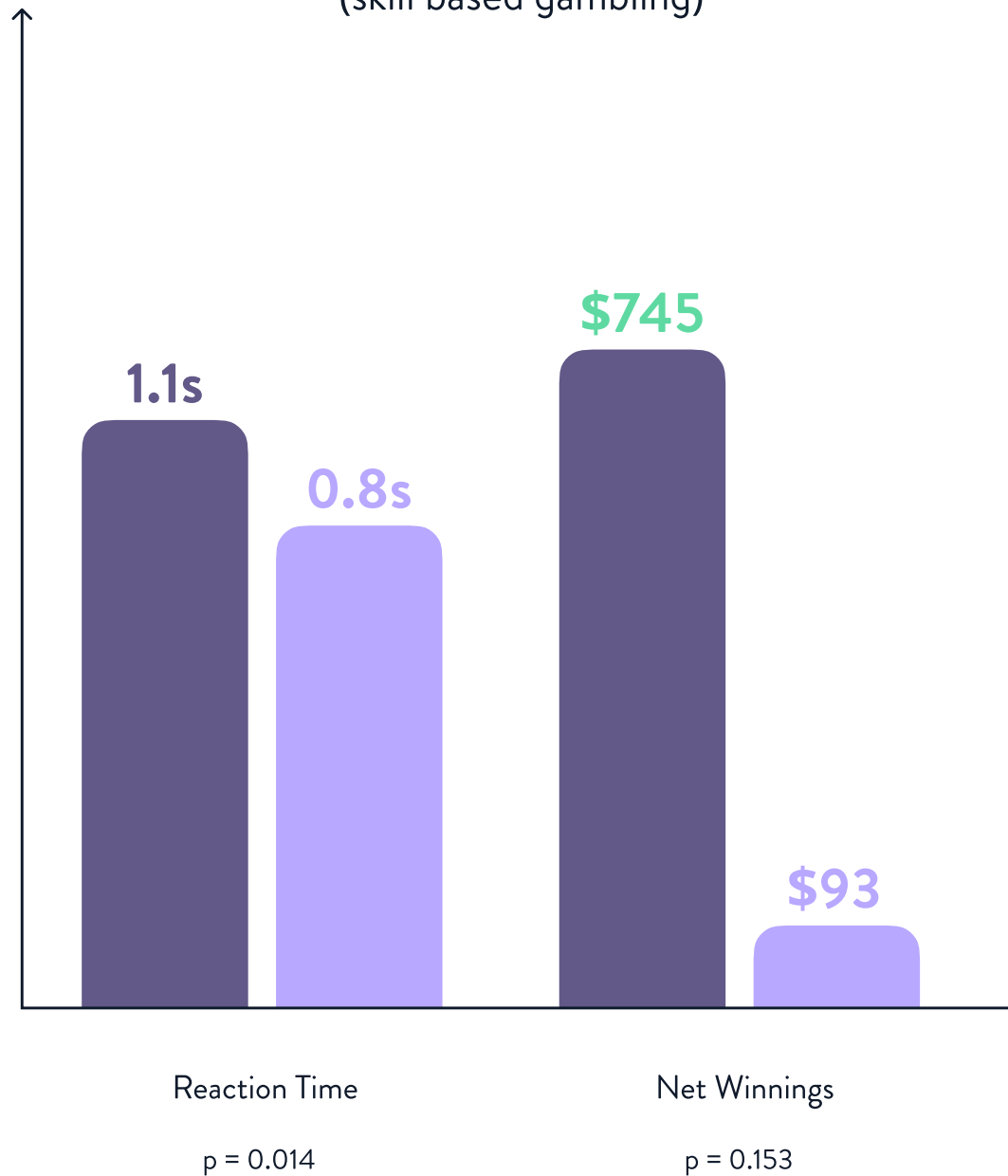
## Slot Machine (luck based gambling)



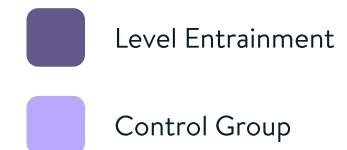
- Entrainment group spent 23% longer between spins suggesting more restraint & deliberation.
- Closing balance was 38% higher than control, indicating less losses experienced (\$1000 starting).
- Session duration was near identical across groups suggesting the experience was still equally enjoyable



## Iowa Gambling Task (skill based gambling)



- Entrainment group spent 27% longer picking cards suggesting more restraint & less impulsivity.
- Average Net Winnings was x8 times higher than the control group suggesting that this slight increase in deliberation time has a very large





# Street Interviews

"So it's like... a watch that tells my body, tranquilo, tranquilo, no?... ah, yes, I feel it... boom, boom... it's nice, it makes me more relaxed."



"I'm here for the buzz, not to calm down, but I can see how something like that would help people who get stressed or chase their losses."



"No, this place isn't for people who don't have money to lose... on a single spin, everyone's putting down two or three thousand pounds."





## Demo and feedback with Imperial College Poker Society

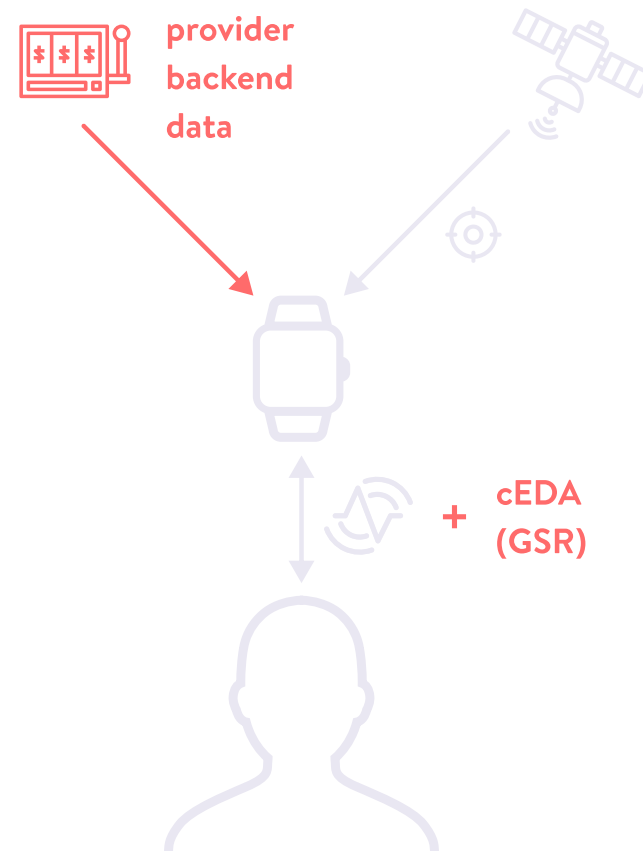
“Is it something that I would download... I think, I think if the science backs it up then definitely.”

“I think that people who play poker will probably want something like more intense, it's like it's just there, like it helps, it helps to bring up the competitiveness.”

“So I think in the long run, maybe some people like the thrill that that that you get with a sense of competitiveness, but I think that staying calm tends to help people perform better.”

## V2

Level becomes predictive and intelligent thanks to accurate stress monitoring (GSR) and access to backend provider data.

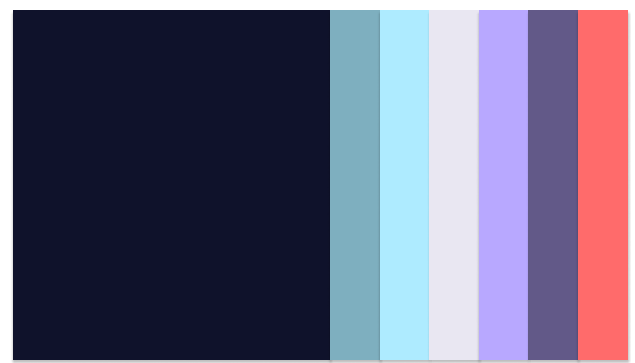


# Appendix A: Brand

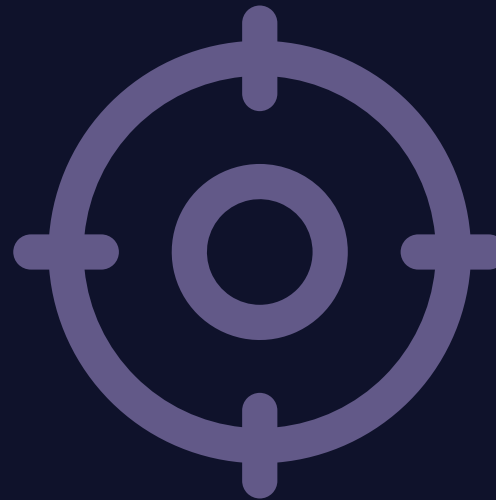


**Lev**  
**eL.** by thirteen.

Sora  
 Lorum Ipsum  
 Lorum Ipsum  
**Lorum Ipsum**







Sora

Lorum Ipsum

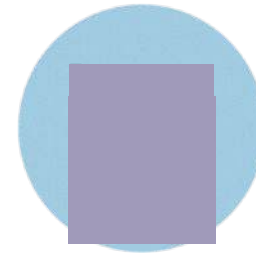
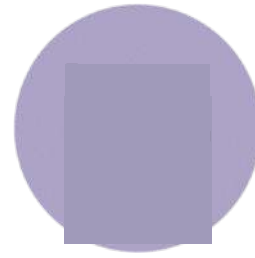
Lorum Ipsum

**Lorum Ipsum**



designed for  
Apple Watch





Lev  
eL. by thirteen.

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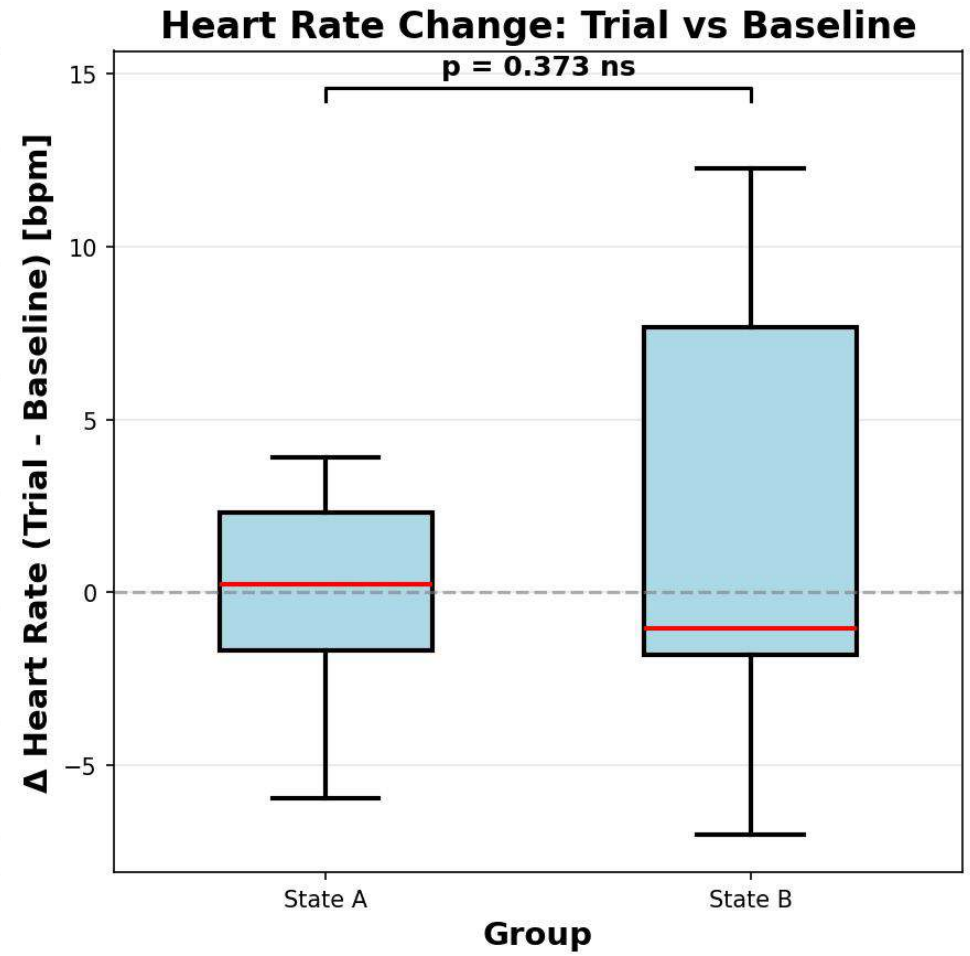
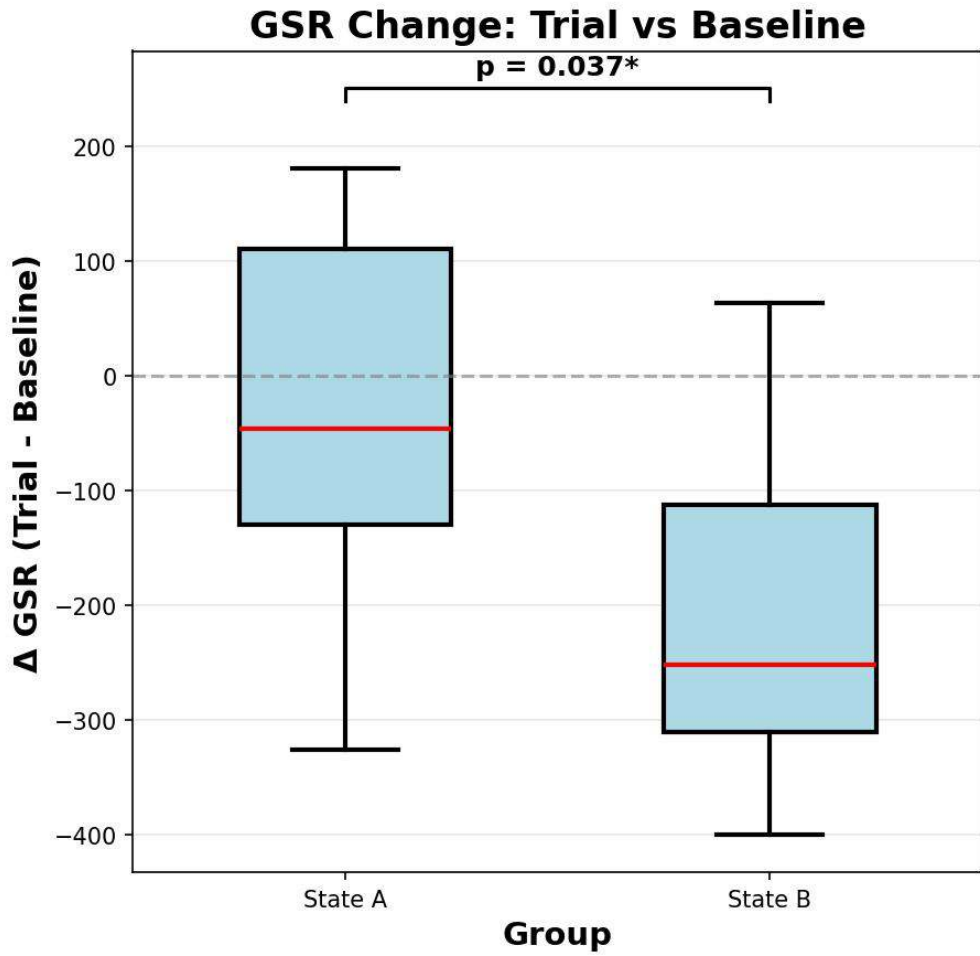
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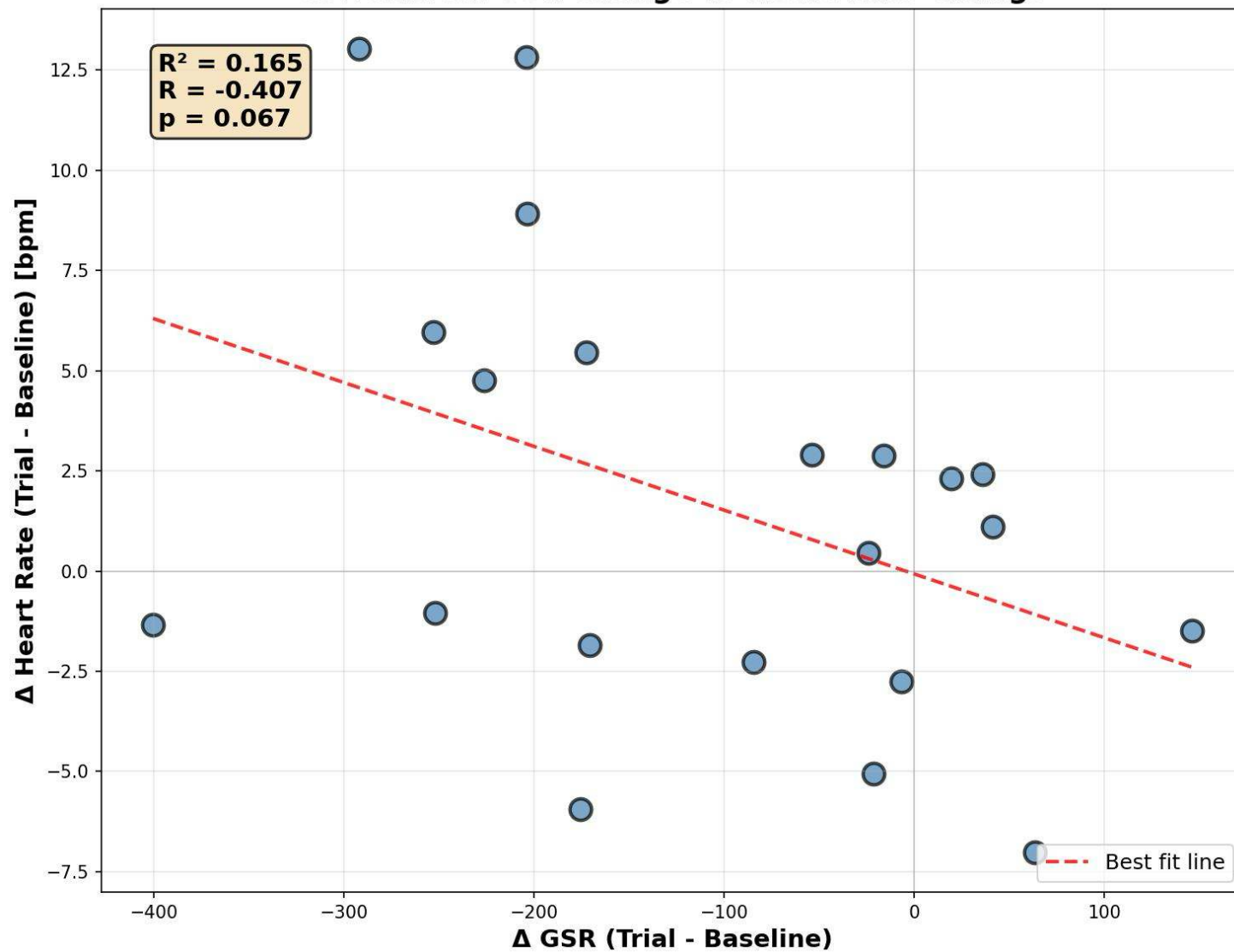


# Appendix B: Trial Material

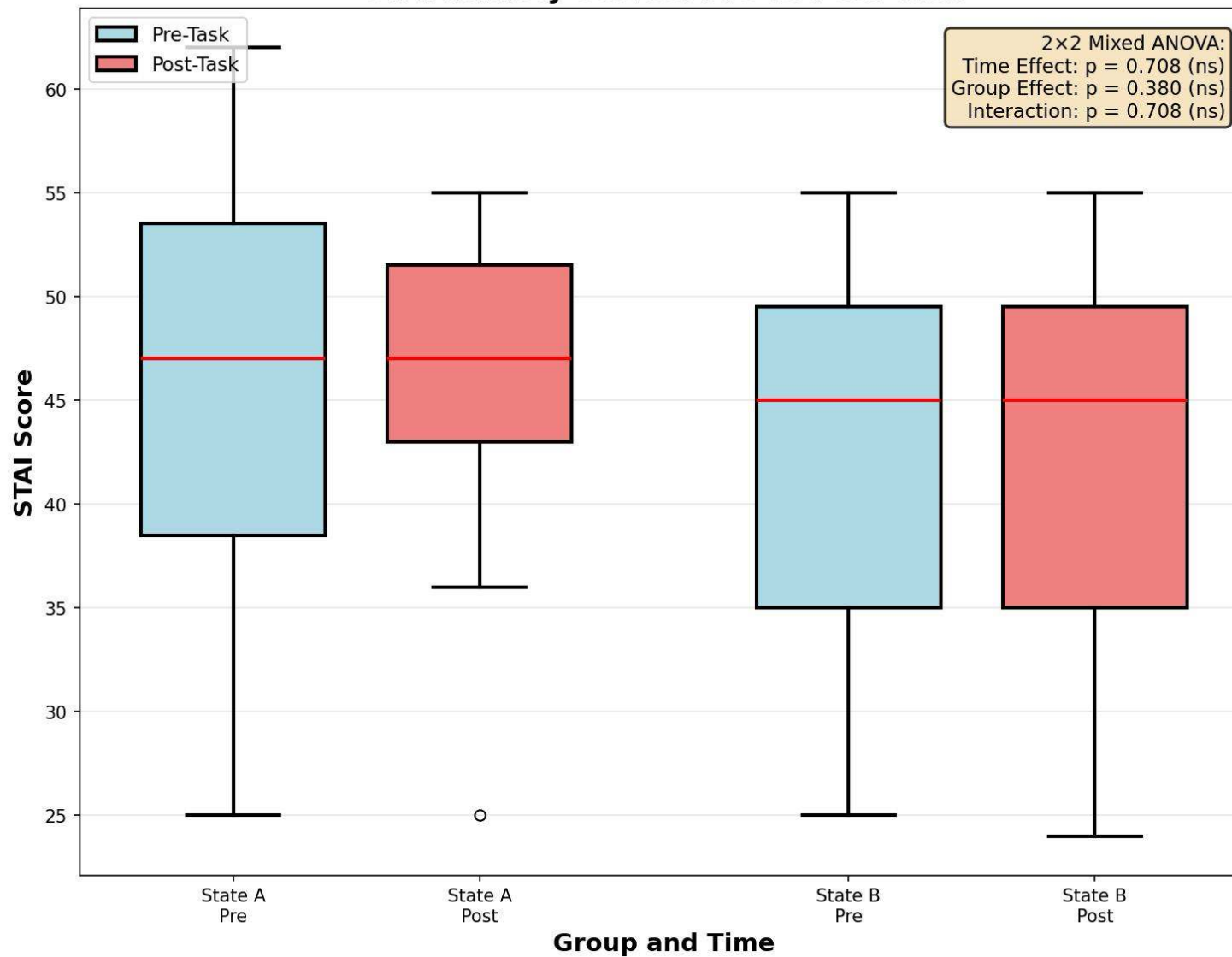


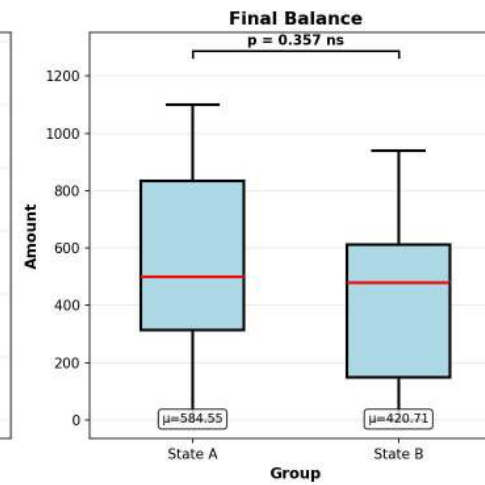
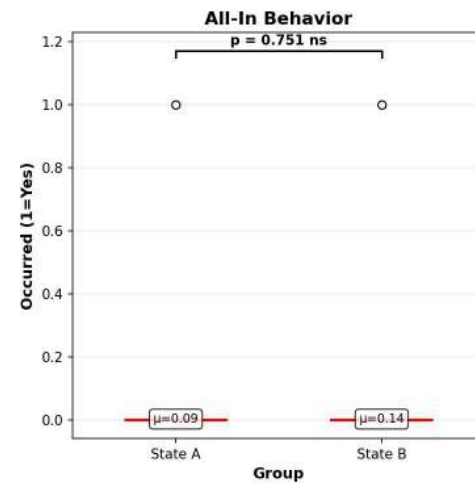
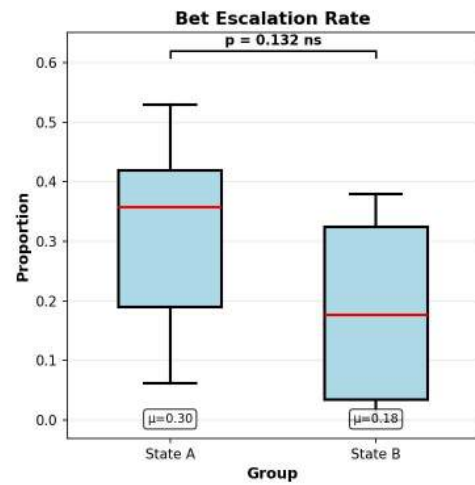
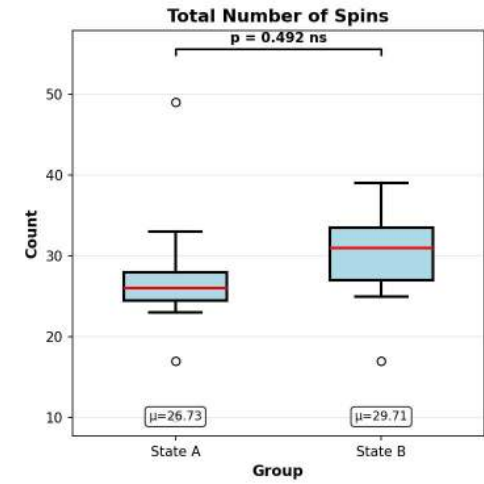
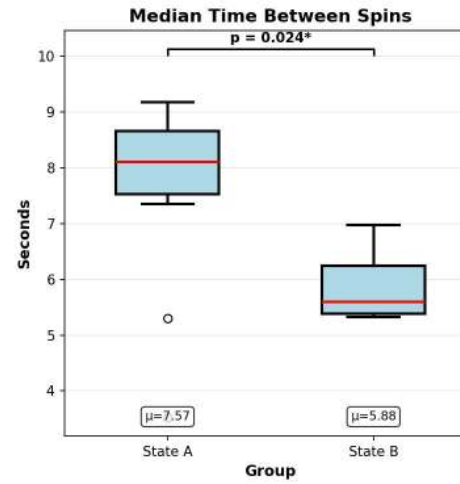
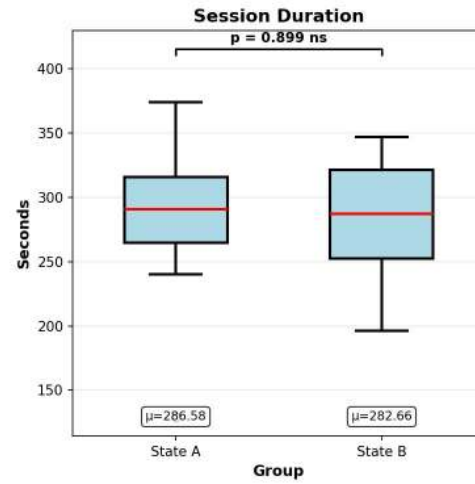
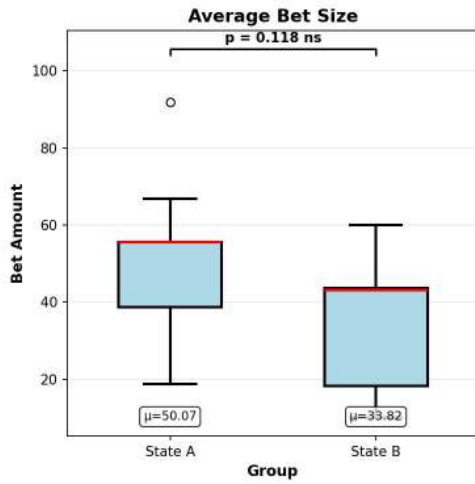


Correlation: GSR Change vs Heart Rate Change



### STAI Anxiety Scores: Pre vs Post Task

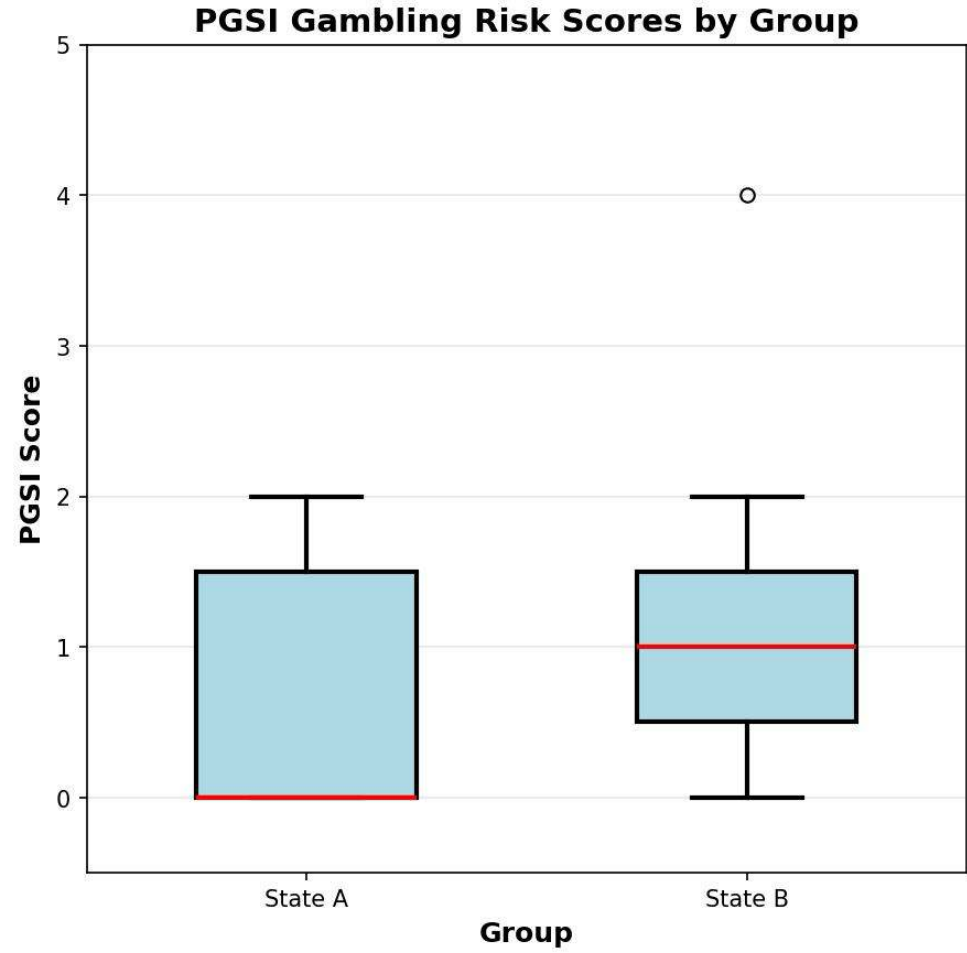
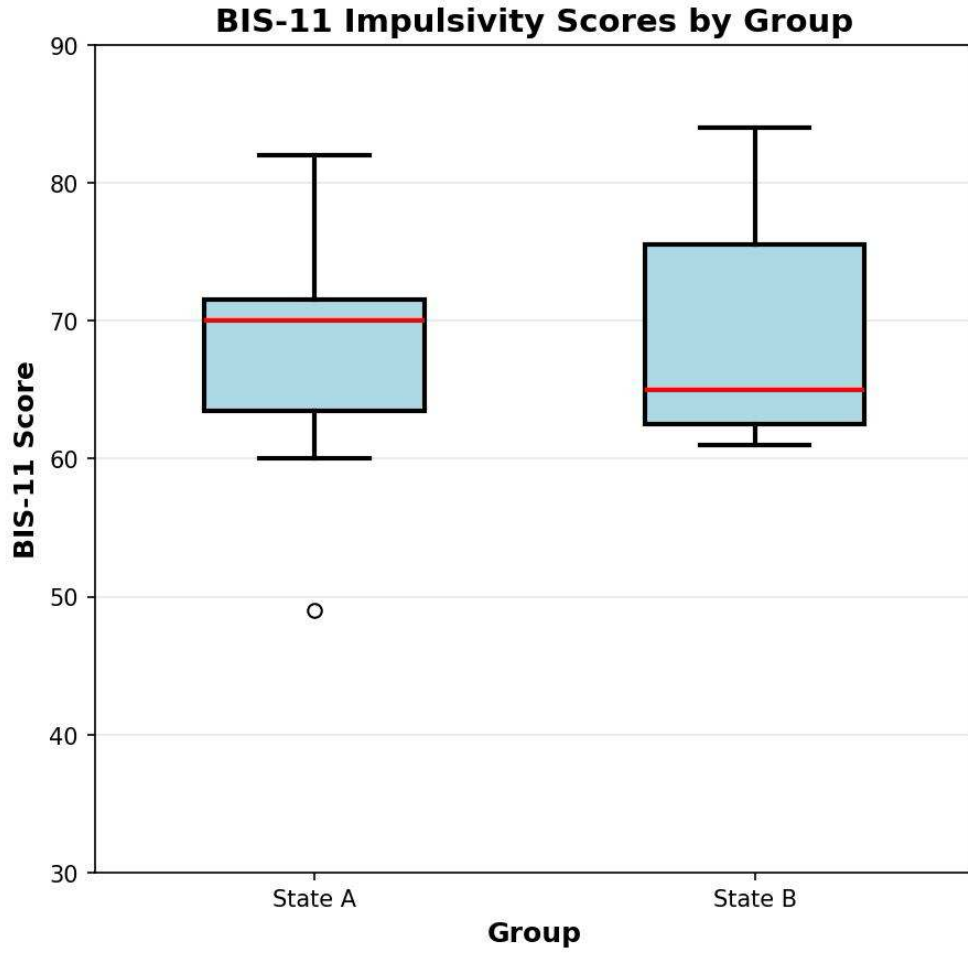




## Appendix A - Trial material

| ID | Statement   | 1 - Not at all | 2 - A little | 3 - Somewhat | 4 - Very Much So |
|----|---|----------------|--------------|--------------|------------------|
| 1  | I feel calm                                       |                |              |              | 3                |
| 2  | I feel secure                                     |                |              |              | 3                |
| 3  | I feel tense                                      | 1              |              |              |                  |
| 4  | I feel strained                                   |                | 2            |              |                  |
| 5  | I feel at ease                                    |                | 2            |              |                  |
| 6  | I feel upset                                      | 1              |              |              |                  |
| 7  | I am presently worrying over possible misfortunes |                |              |              | 3                |
| 8  | I feel satisfied                                  |                | 2            |              |                  |
| 9  | I feel frightened                                 | 1              |              |              |                  |
| 10 | I feel uncomfortable                              | 1              |              |              |                  |
| 11 | I feel self confident                             |                |              |              | 3                |
| 12 | I feel nervous                                    |                | 2            |              |                  |
| 13 | I feel jittery                                    |                |              |              | 3                |
| 14 | I feel indecisive                                 |                | 2            |              |                  |
| 15 | I am relaxed                                      |                | 2            |              |                  |
| 16 | I feel content                                    |                |              |              | 3                |
| 17 | I am worried                                      |                | 2            |              |                  |
| 18 | I feel confused                                   | 1              |              |              |                  |
| 19 | I feel steady                                     |                | 2            |              |                  |
| 20 | I feel pleasant                                   |                |              |              | 3                |

# Appendix A - Trial material





# Appendix C: Misc.





# Sntain

# Flutter™

