

# Game Experience Design

12 Evaluation

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18.07.2017





# Testformen

Functionality Testing

Certification Testing

Network Performance Testing

Stress and Load Testing

Compatibility Testing

Crowd & Cloud Testing

Test Automation

Beta Testing Management

**User Experience Testing**

QA Staffing

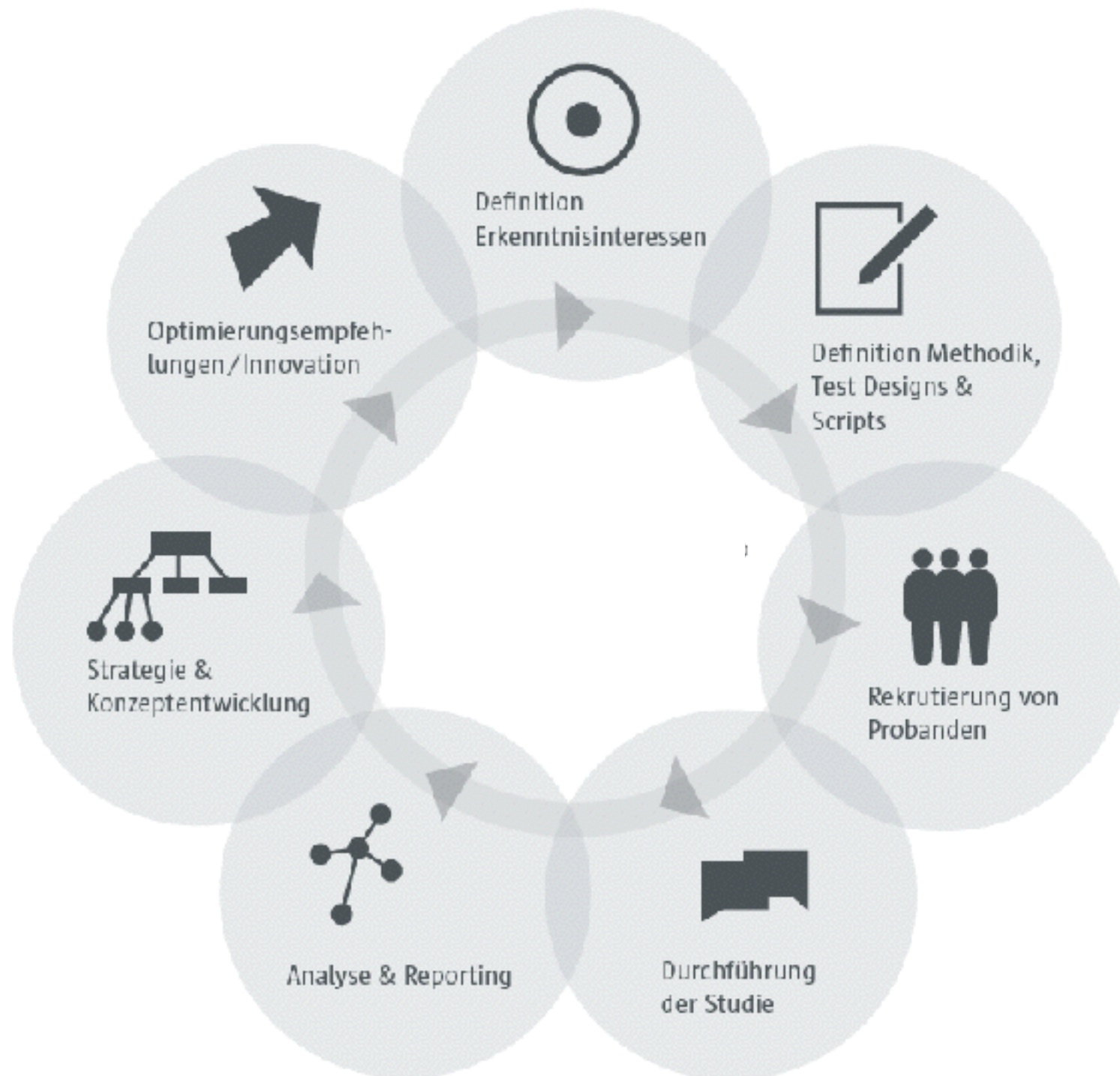
QA Consulting



<http://gamingjobsonline.com/videogametester/>

<http://www.babelmedia.com/service/>

# Game Experience Evaluation



Ziel festlegen

Methode auswählen

Prototypen erstellen

Evaluation durchführen

Auswerten

Umsetzen

# Evaluations-Ziele



## **Game Usability**

- Navigation
- Familiarity
- Consistency
- Error prevention
- Visual clarity
- Areas of discomfort (e.g. motion sickness)

## **Game Flow**

- Difficulty
- Pacing
- Enjoyment

## **Market Research**

- User feedback
- Focus groups
- Data compilation
- Expert recommendations

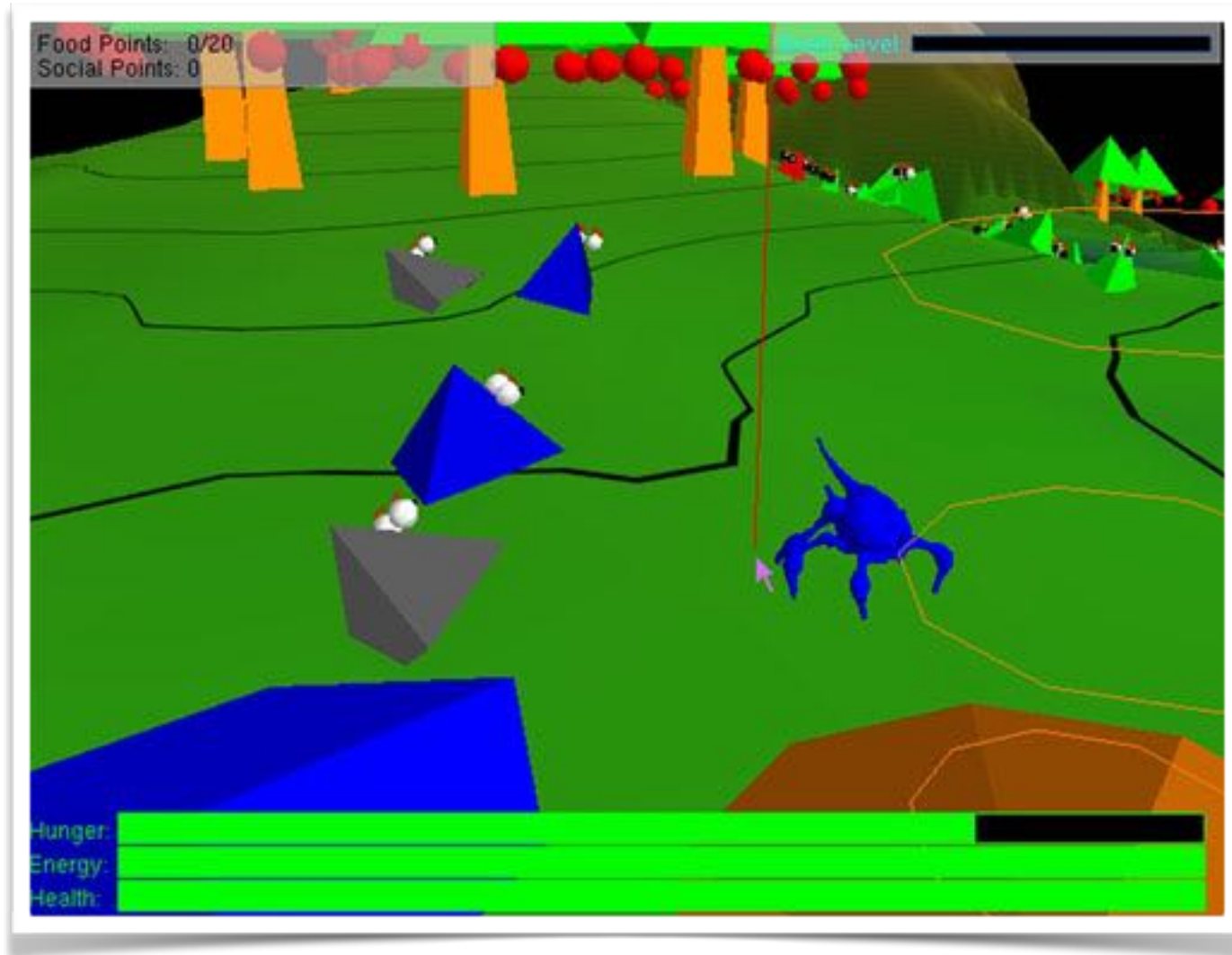


# Prototyp

Prototypen sollen Fragen beantworten

Prototypen sollen Probleme lösen  
(Proof of concept)

Solange es nicht um Look & Feel geht,  
müssen sie nicht gut aussehen

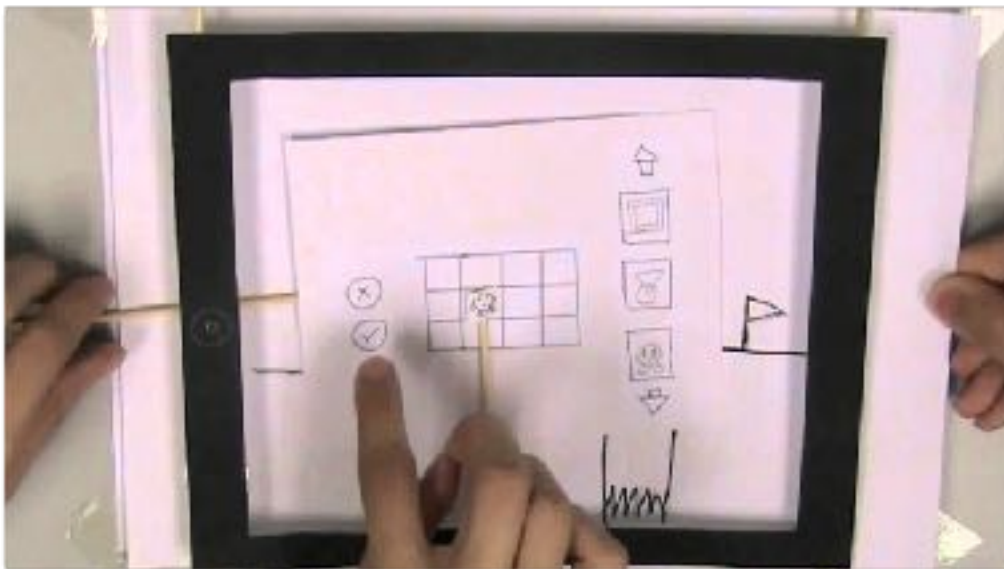


<https://www.nyfa.edu/student-resources/getting-the-most-out-of-your-prototype-game/>

# Ziele im Prototyping



Brown Boxing VR-Prototyp



Lo-Fi-Performance Papier Prototyp

## **Explorativ**

Anforderungen ermitteln

## **Experimentell**

Grundfunktionalität erkundbar machen

## **Performance**

Einsetzbarkeit in der anvisierten Umgebung testen

## **Evolutionär**

Frühe Versionen erstellen

## **Didaktisch**

Systemverständnis unterstützen

## **Persuasiv**

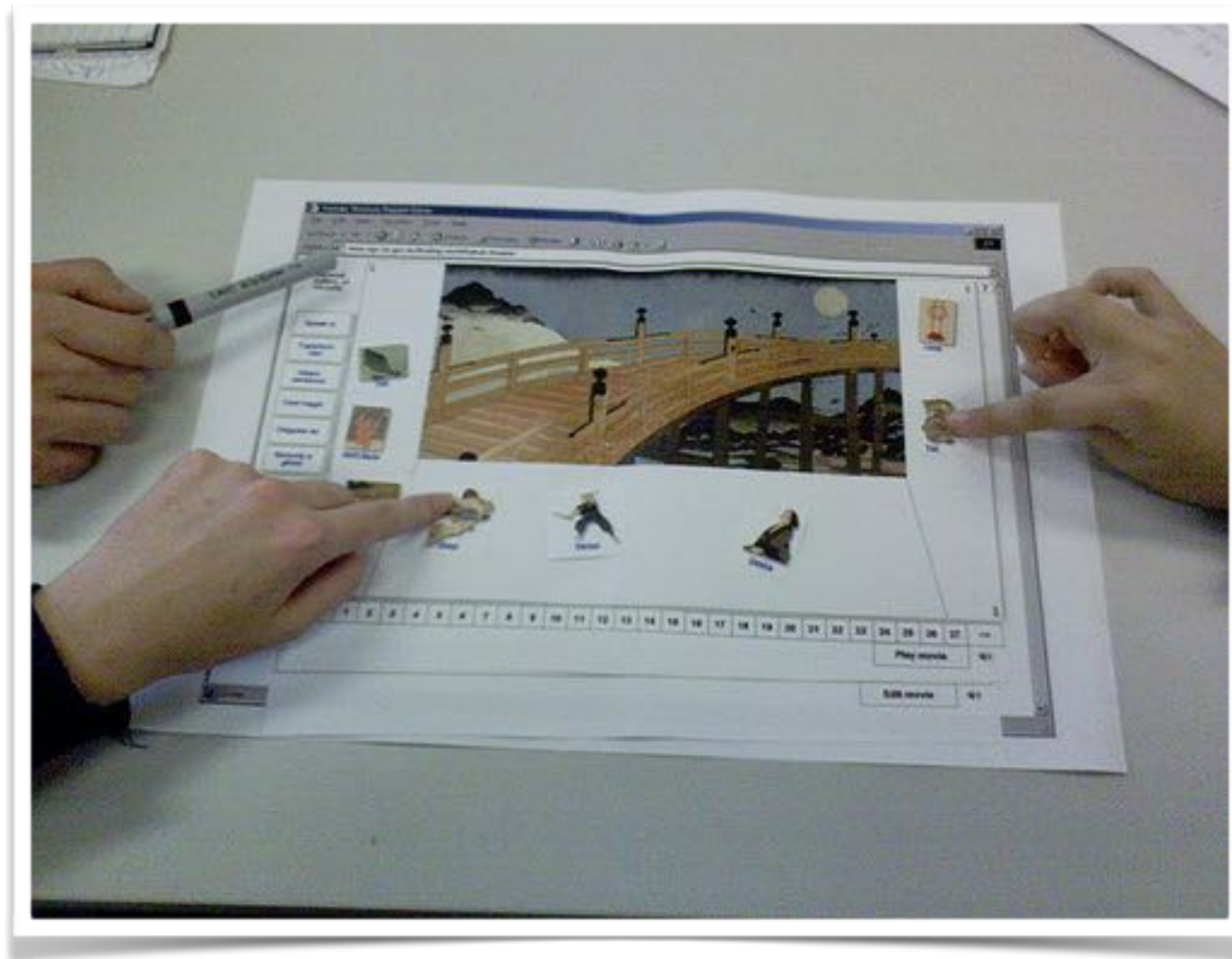
Ideen Pitchen

## **Sozial**

Zusammenarbeit stärken (Vision)



# Merkmale von Prototypen



Ein breiter aber flacher Prototyp

## **Breite (Horizontal)**

Eine Ebene (häufig die Oberfläche) wird umgesetzt.  
Welcher Anteil der Produktfunktionalität wird repräsentiert?

## **Tiefe (Vertikal)**

Ein Teilaspekt wird durch alle Ebenen umgesetzt  
Wie detailliert wird die Funktionalität implementiert?

## **Aussehen**

Die sinnliche Anmutung (häufig Aussehen) wird umgesetzt  
Welche Ähnlichkeit gibt es mit dem fertigen Produkt?

## **Interaktion**

Das Verhalten wird umgesetzt  
Wie genau wird die Transformation von Eingabe zu Ausgabe simuliert?

# Arten von Prototypen

## **Lo-Fi**

Skizze

Wireframes

Storyboards

Papier / Karton

## **Mi-Fi**

Designstudie

Usage Video

Ripomatic

Mock-Ups

Wizard-of-Oz

Experience Prototyp

Protoyp-Theater

## **Hi-Fi**

Vertical Slice

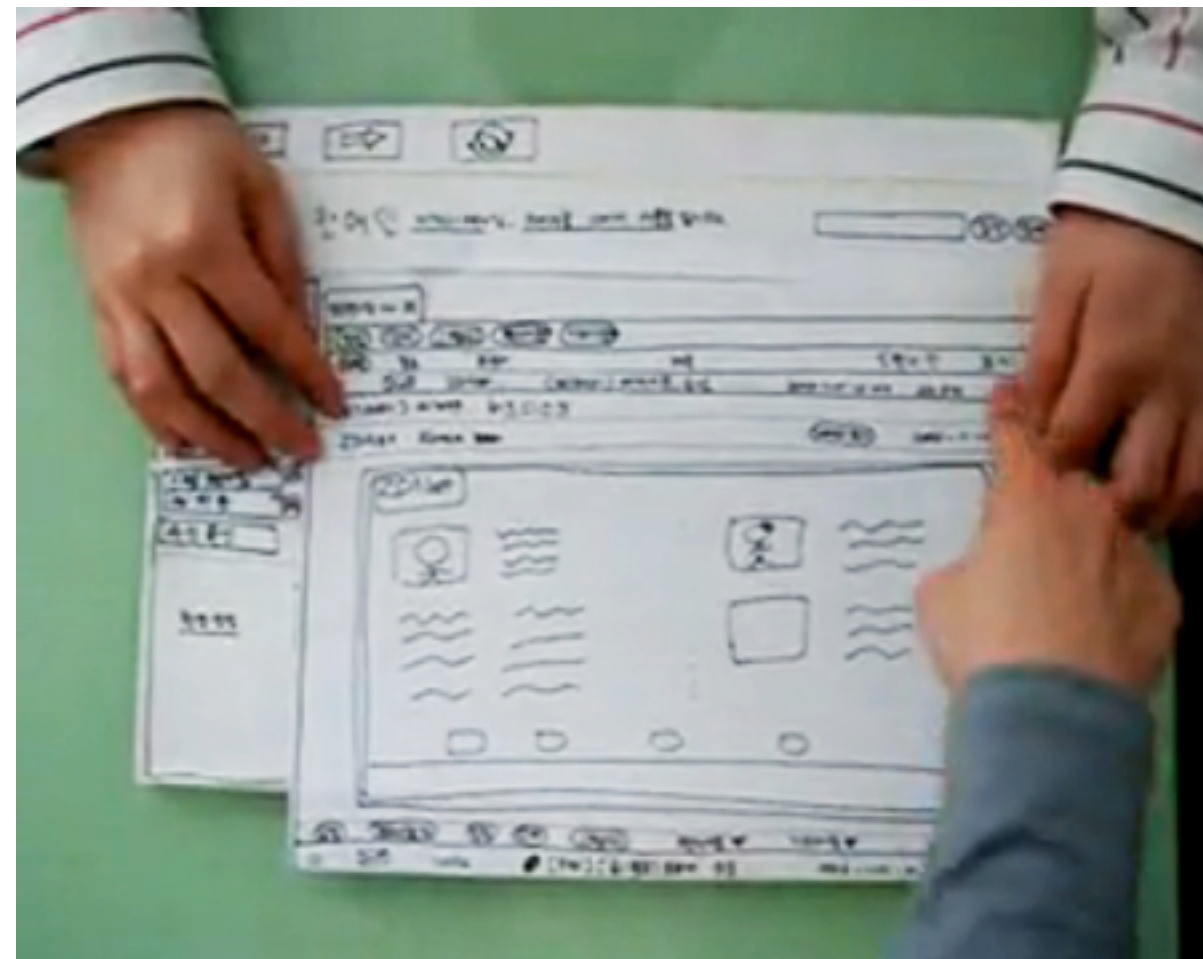
Horizontal Layer

Funktionsfähiger  
Prototyp



# Lo-Fi-Prototypen

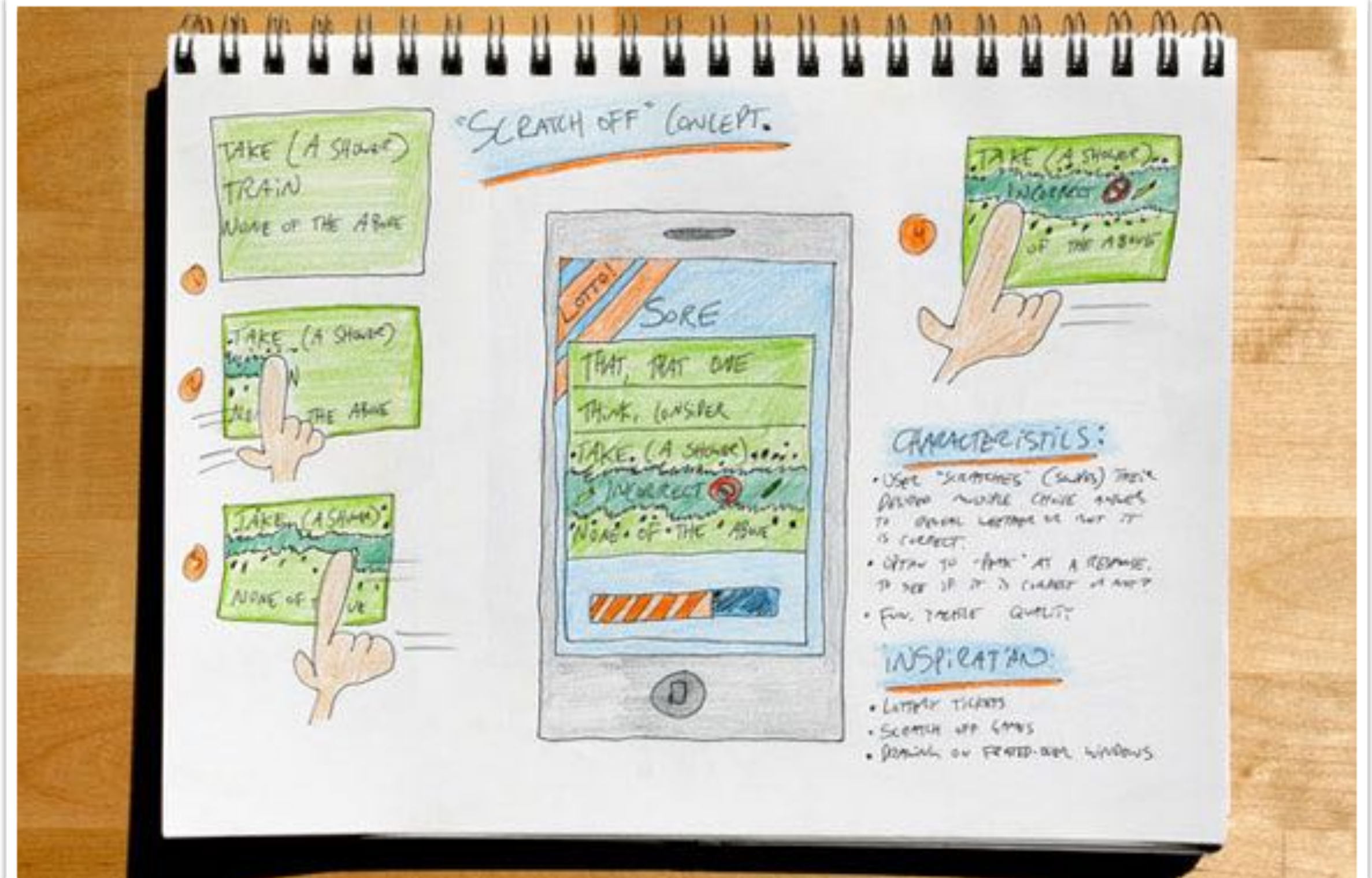
Ein Lo-Fi-Prototyp erfüllt sein Ziel ohne digitaltechnische Unterstützung.



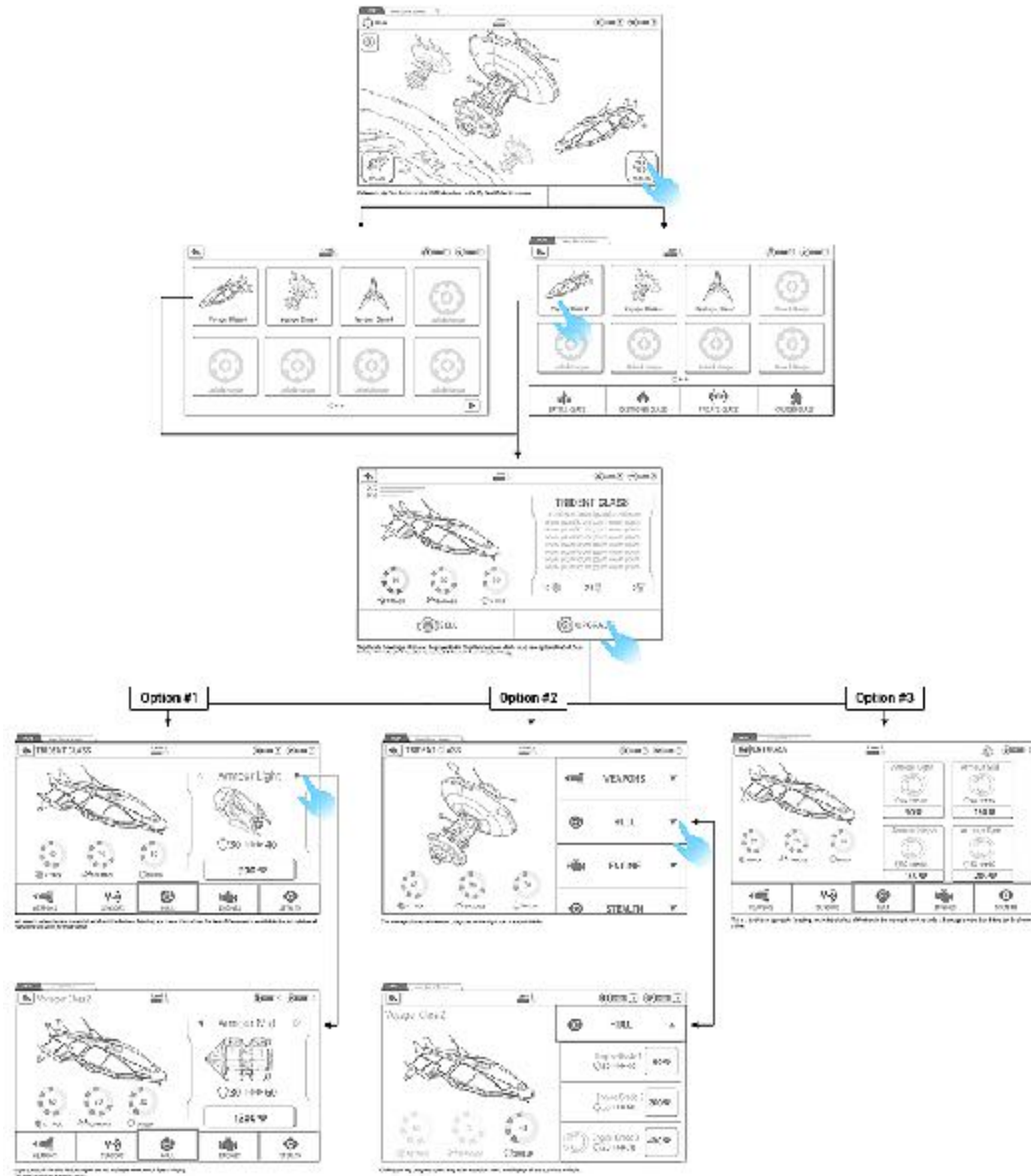
Es muss nicht immer digital sein: Ob Spiele oder Grafische Benutzeroberflächen – Tests mit Papierprototypen sind zielführend, einfach in der Herstellung und machen Spaß.



# Skizze



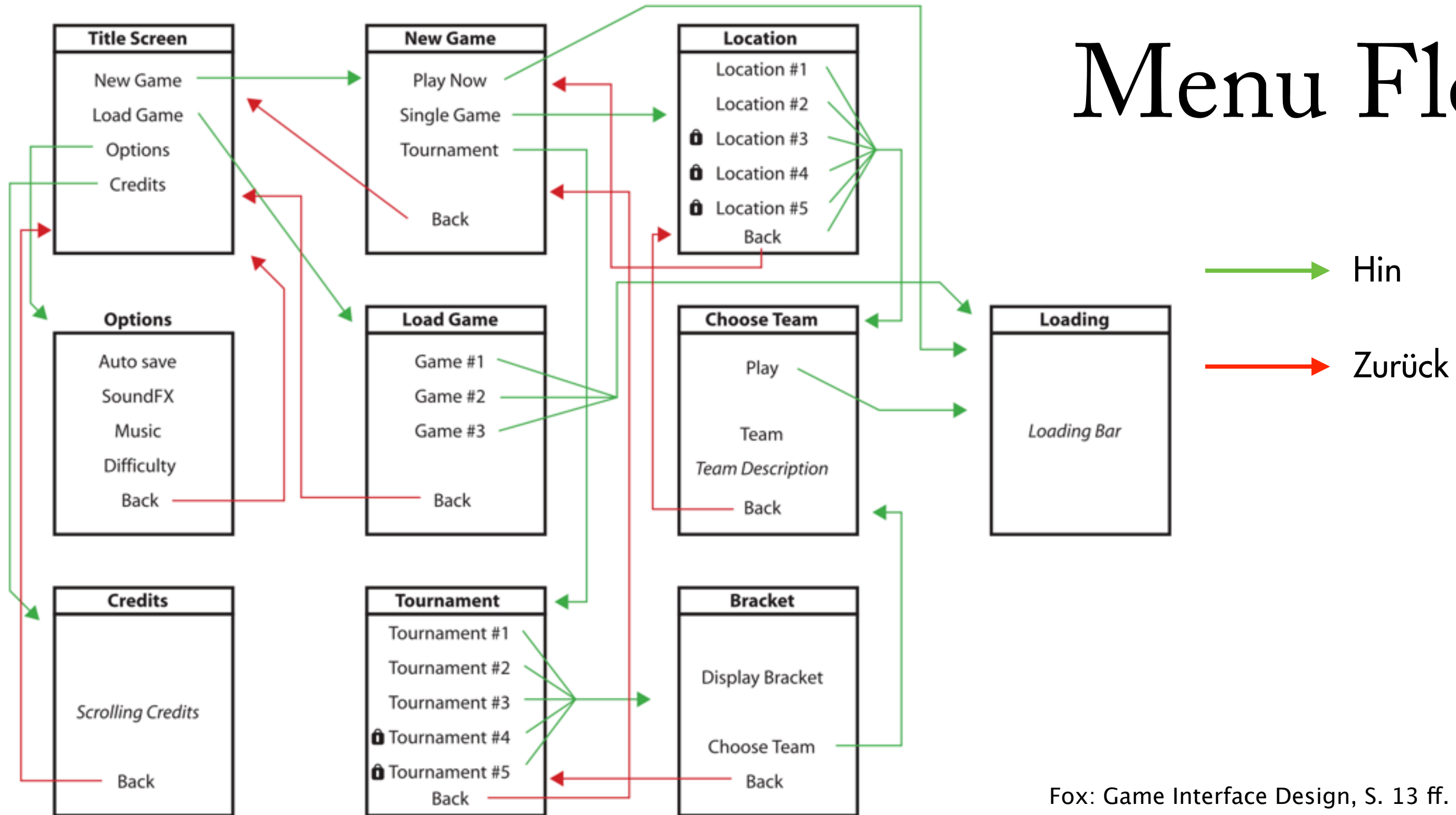
# Wireframes



<https://onextrapixel.com/40-brilliant-examples-of-sketched-ui-wireframes-and-mock-ups/>



# Menu Flow



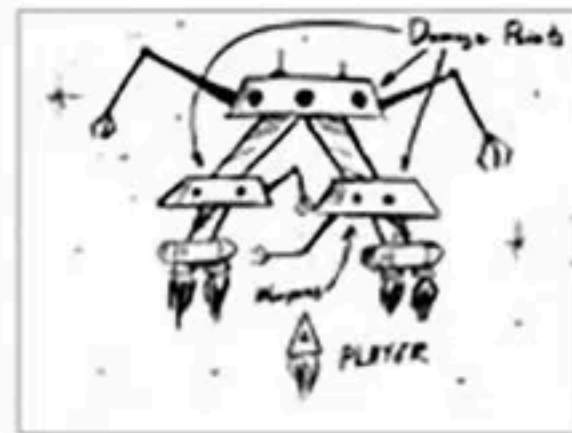
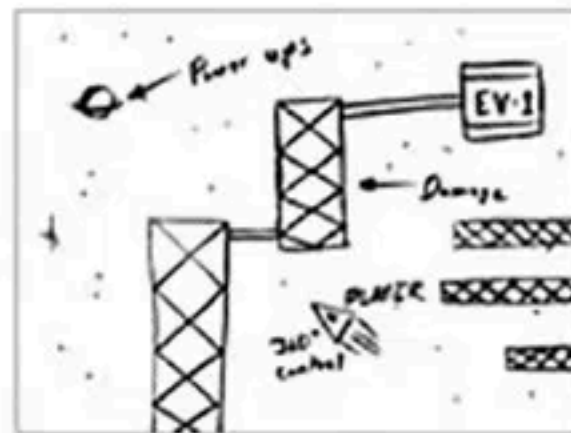
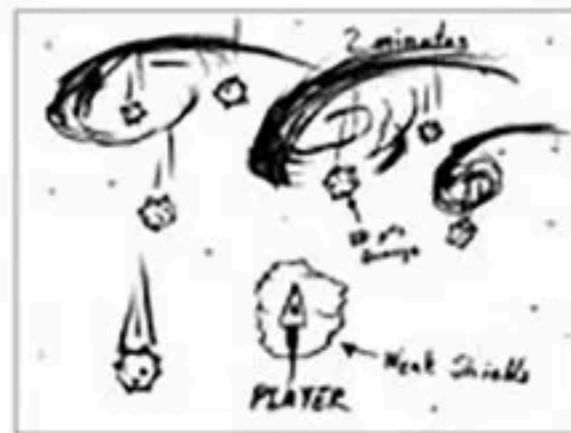
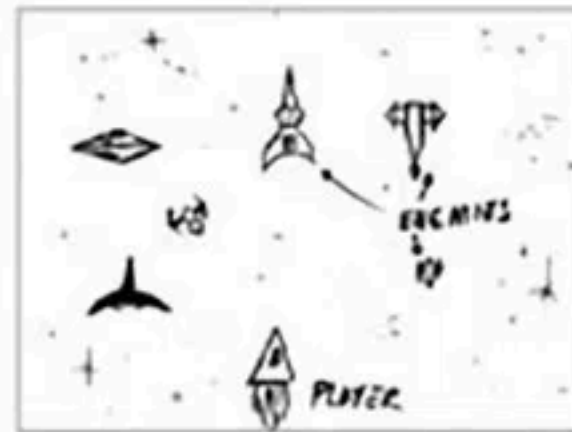
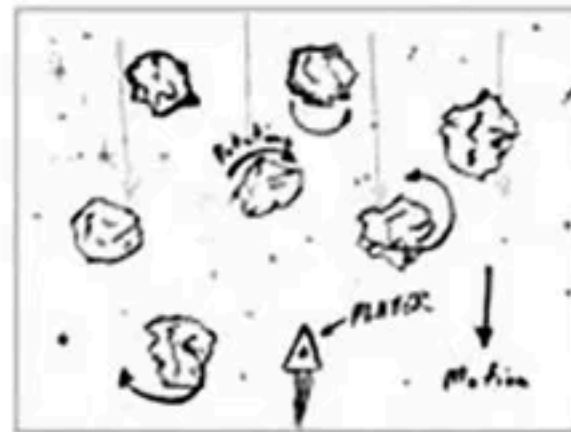
Fox: Game Interface Design, S. 13 ff.

# Common Menu Screens

- **Legal screen.** This can be a short sentence or a screen full of text. It will include legal issues like copyright notices.
- **Publisher logo screen.** It can be a requirement to show this screen before the developer logo. There may also be a requirement for how long it needs to be displayed before the user can move on.
- **Developer logo screen.** This is where your company logo is seen.
- **Console logo screen.** Some consoles require or encourage developers to display the system logo.
- **Title screen.** The name of the game appears here. It can also include interactive
- **Options.** An option screen allows the user to change many game settings.
- **Credits.** This is where everyone who worked on the game is listed.
- **Environment or level select.** This is used in games where the user can choose a level of location to play.
- **Player editor.** A player editor will allow the user to change the look and attributes of characters in the game.
- **Information.** This screen can have extra information, such as story, maps, and so on.
- **Save / Load game.** This screen lists how many games are saved and allows the user to load and save games.



# Storyboards



<http://gamescrye.com/blog/starting-your-game-with-a-story/>

# Paper-Prototyping mit Karteikarten



## Ausstattung

Weißes Papier, unliniert, 11-17“, stabil

5-8“-Karten

Klebebänder, Post-It-Kleber

Farbige Stifte, Marker

Sticky Notes

Overhead-Folien

Scheren, Cutter, Lineale, Pflaster

## Zeitgrenze setzen

## Modelle bauen, keine Illustrationen

## Test vorbereiten

1. Nutzer auswählen
2. Testszenarien vorbereiten
3. Üben

## Test auswerten



# VR Prototyping

Brown Boxing

Observe, what players do

[https://www.youtube.com/watch?v=5Oq\\_fVol\\_88](https://www.youtube.com/watch?v=5Oq_fVol_88)



# Vor und Nachteile von Lo-Fi



## **Vorteile**

Schnell, billig

Rasch veränderbar

Kann Spaß machen

## **Nachteile**

Abstrakt für Designer und Nutzer

Sehr abhängig vom Moderator

Evtl. technisch nicht umsetzbar

<https://www.youtube.com/watch?v=8lUYlo08qtl>

# Mi-Fi-Prototypen

Breite, Tiefe, Interaktion und Visualität sind eingeschränkt



Project Natal: You are the Controller (2009)  
[https://youtu.be/g\\_txF7iETX0?t=1m46s](https://youtu.be/g_txF7iETX0?t=1m46s)





# Designstudie



# Usage Video



# Ripomatic



The Order 1886

Ripomatic

<https://vimeo.com/68257748>

Trailer

<https://www.youtube.com/watch?v=8hxz8lWWzt8>



# Mock-Ups

Mockups repräsentieren die Erscheinung des Systems, ohne notwendigerweise Funktionalitäten zu implementieren.

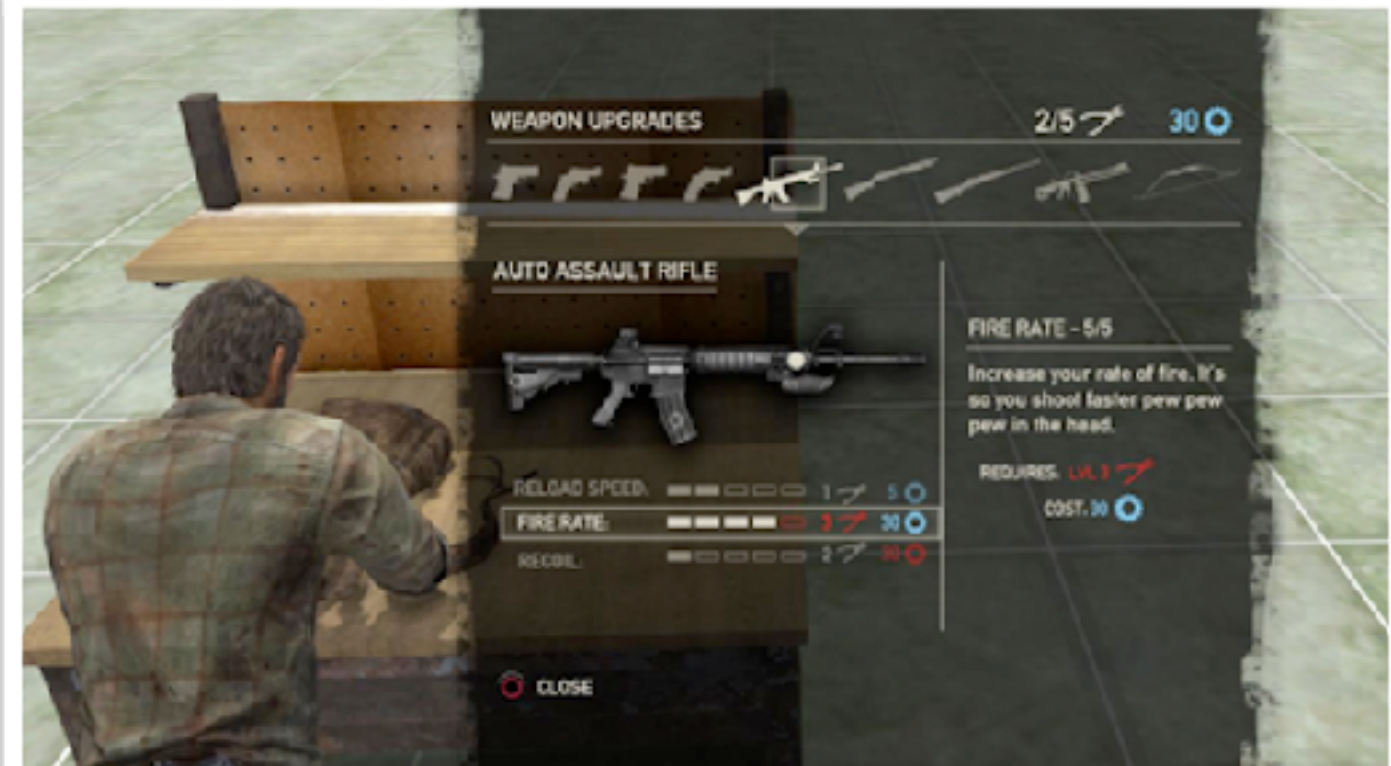






# Iterationen

Wireframe, implement, test, iterate and skin.

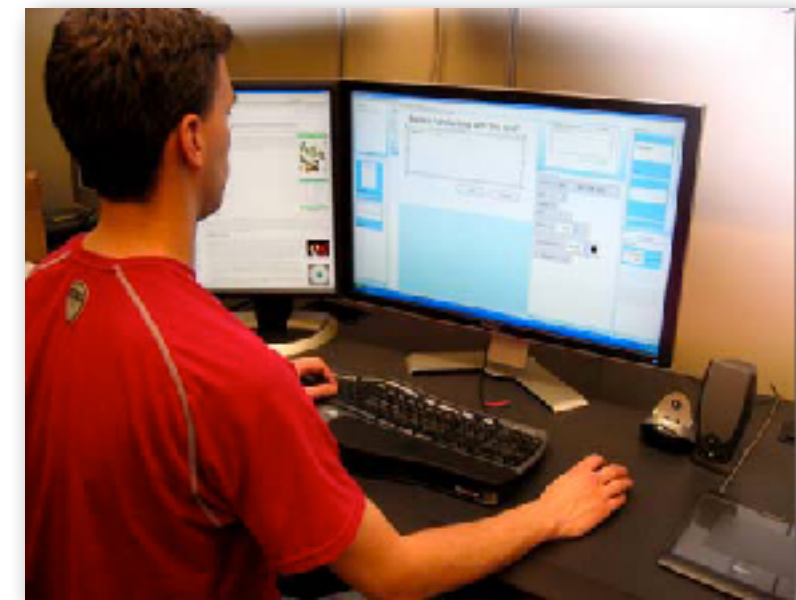




# Interaktion: Wizard-of-Oz-Prototypen



<https://www.youtube.com/watch?v=YWyCCJ6B2WE>



[http://dub.washington.edu/djangosite/media/papers/tmp7g\\_SPa.pdf](http://dub.washington.edu/djangosite/media/papers/tmp7g_SPa.pdf)



# Experience Prototyping

Experience Prototype is any kind of representation, in any medium, that is designed to understand, explore or communicate what it might be like to engage with the product, space or system we are designing.



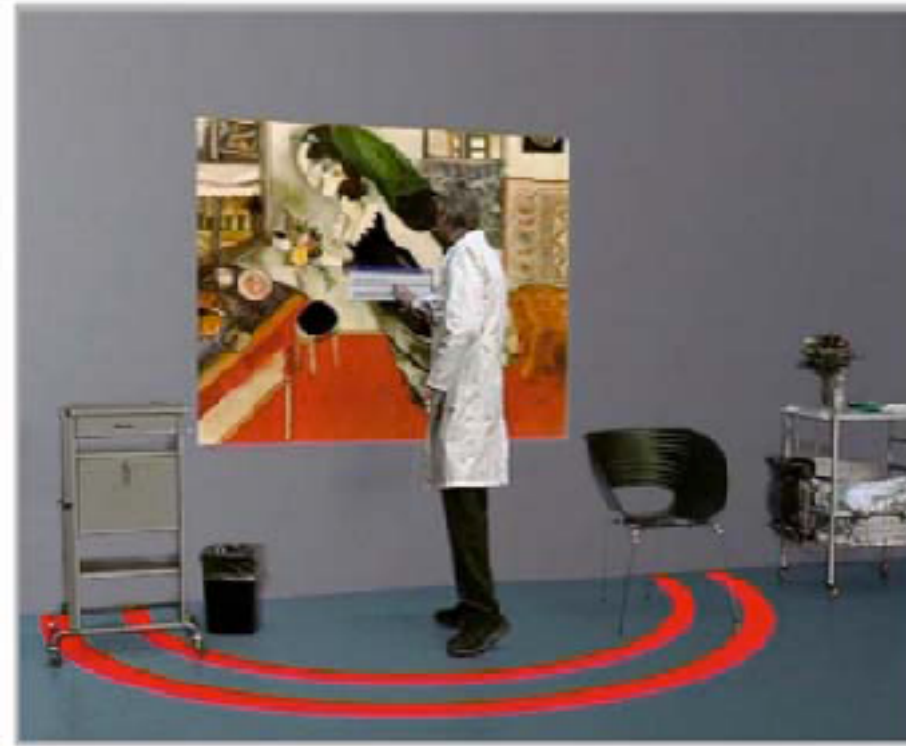
Figure 2: Experiencing a train journey.

*The team combined objective passenger research with subjective discovery as they played out roles they assigned each other.*



Figure 4: *Bodystorming layouts for an airplane interior.* Ideas were generated and evaluated rapidly by the team as they directly experienced physical and social issues in this full-scale environment.

# Prototyp-Theater



Ein Szenario wird vor einem Bluescreen durchgespielt und in der Postproduktion zu einem vollständigen Usage-Video ausgebaut.

**Figure 4.** Diana enters in a post office and has to take a number for the cue. There are several buttons to push for the numbers according to the service. Beside each button there is an explanation in Finnish, Diana scans the words with her magic thing, which are translated into English.



# Tower Tag



<https://www.youtube.com/watch?v=Fg8XobTnvOg>

# Hi-Fi-Prototypen

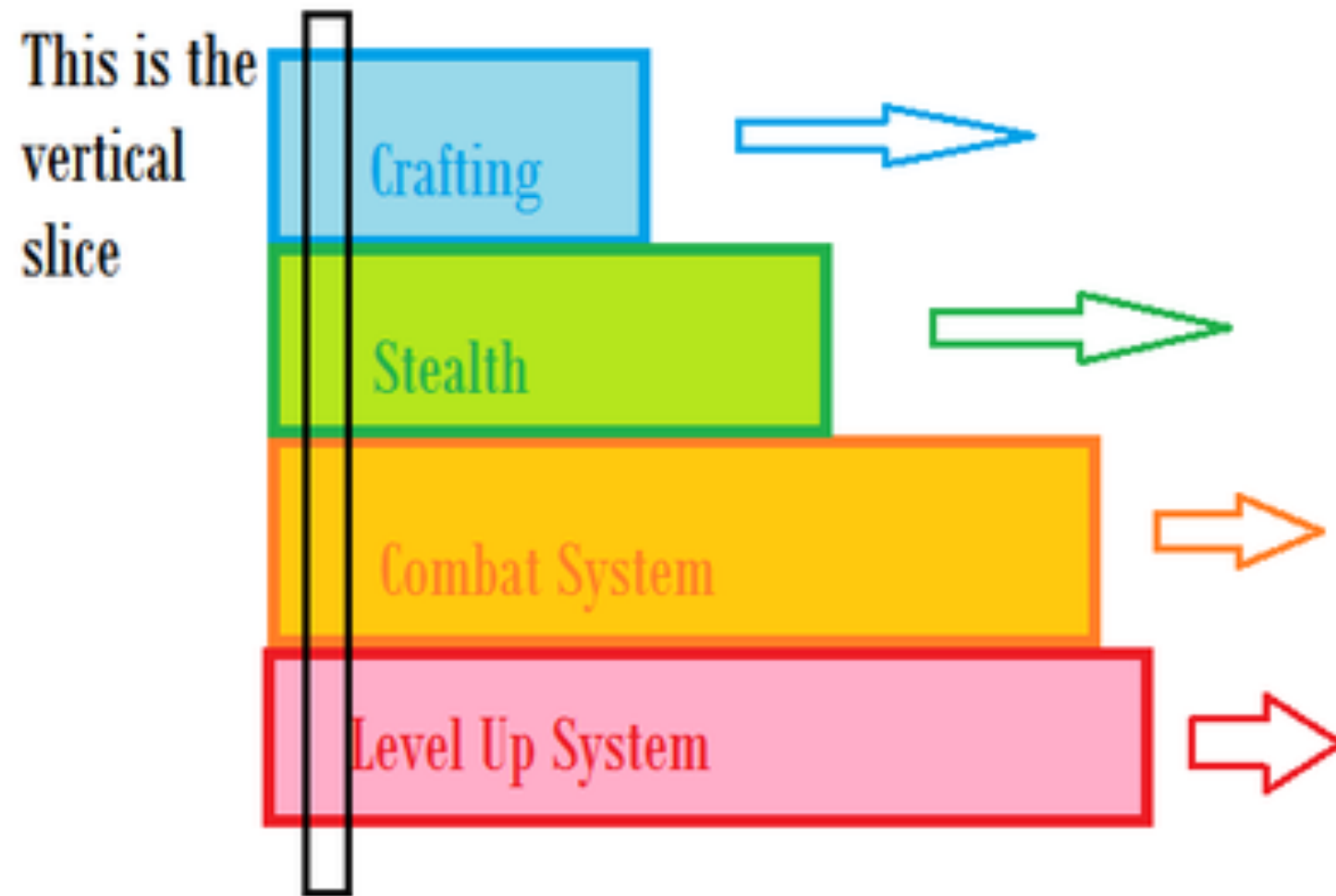


Figure 6: *Digital camera interaction architecture prototype.* The prototype used a desk-top computer's processing power to manipulate the dynamic qualities of the control system and screen behavior.

Für Gestaltung,  
Aussehen,  
Zeitverhalten, genaue  
Funktionen



# Vertical Slice



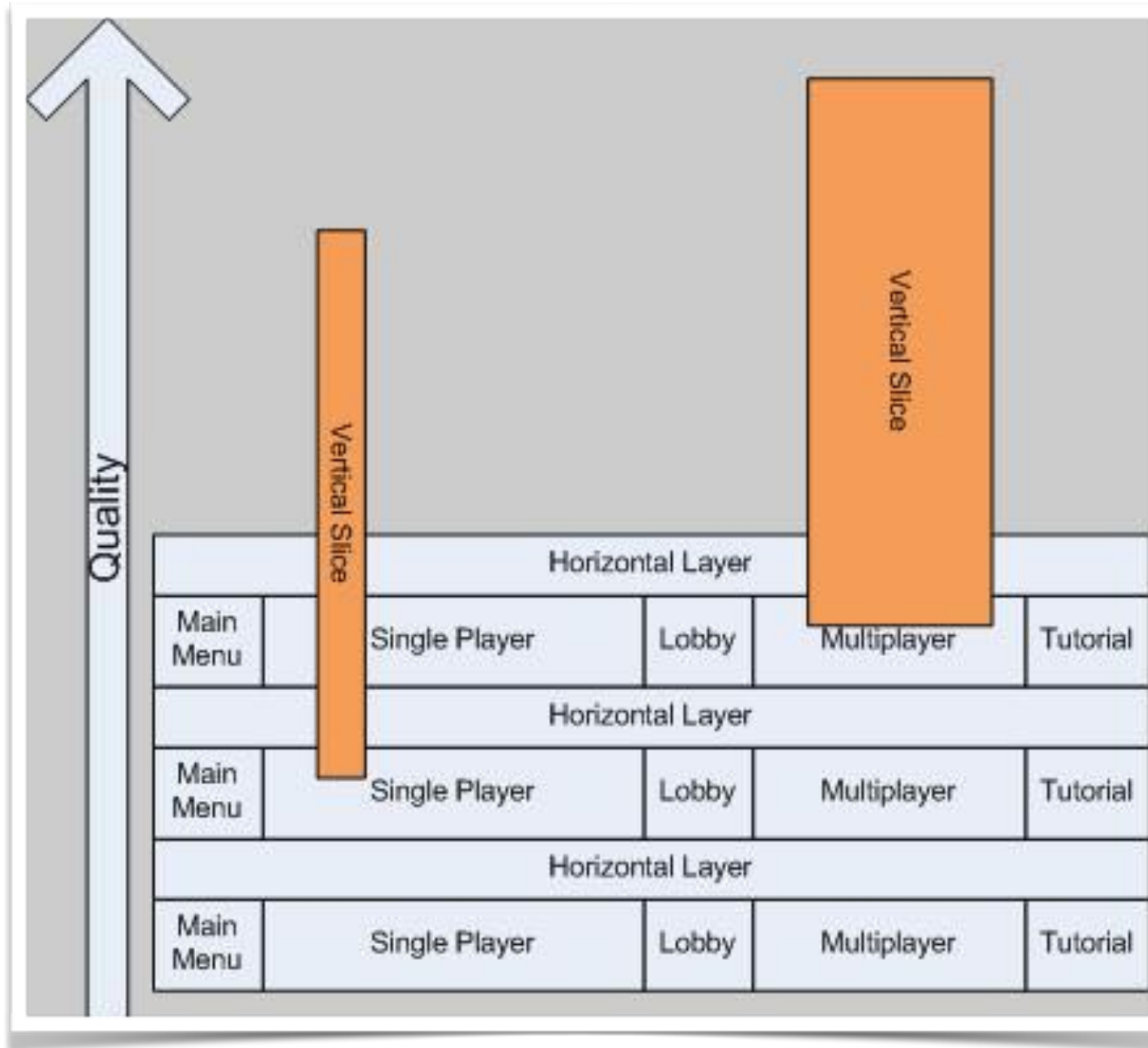
Maverick Hunter

<https://www.youtube.com/watch?v=olYCsHuqjOo>

1. In-game cinematic transitions
2. First Person shooter type run and gun sequences
3. Charge-up weapon attack (0:28-0:30)
4. Activatable melee combat kill animation sequences (0:31)
5. Throwable Grenades (0:42)
6. The ability to acquire temporary weapons from enemies (0:58)
7. Variation gameplay on cinematic kills - launch an enemy, shoot him in the air during time dilation (1:18)
8. Alternate methods of traversing geometry - note the meter being depleted as the transition happens (1:23)
9. Thrown Grenades having effects on the environment (1:32)
10. Grenades being used to open specific doors as well as destroying enemies (1:47)
11. Running/different movement speeds (1:53)
12. Shooting while falling without needing to navigate (2:00)

<http://askagamedev.tumblr.com/post/77406994278/game-development-glossary-the-vertical-slice>

# Horizontal Layer



Energy Racer, erstes Qualitätsniveau.



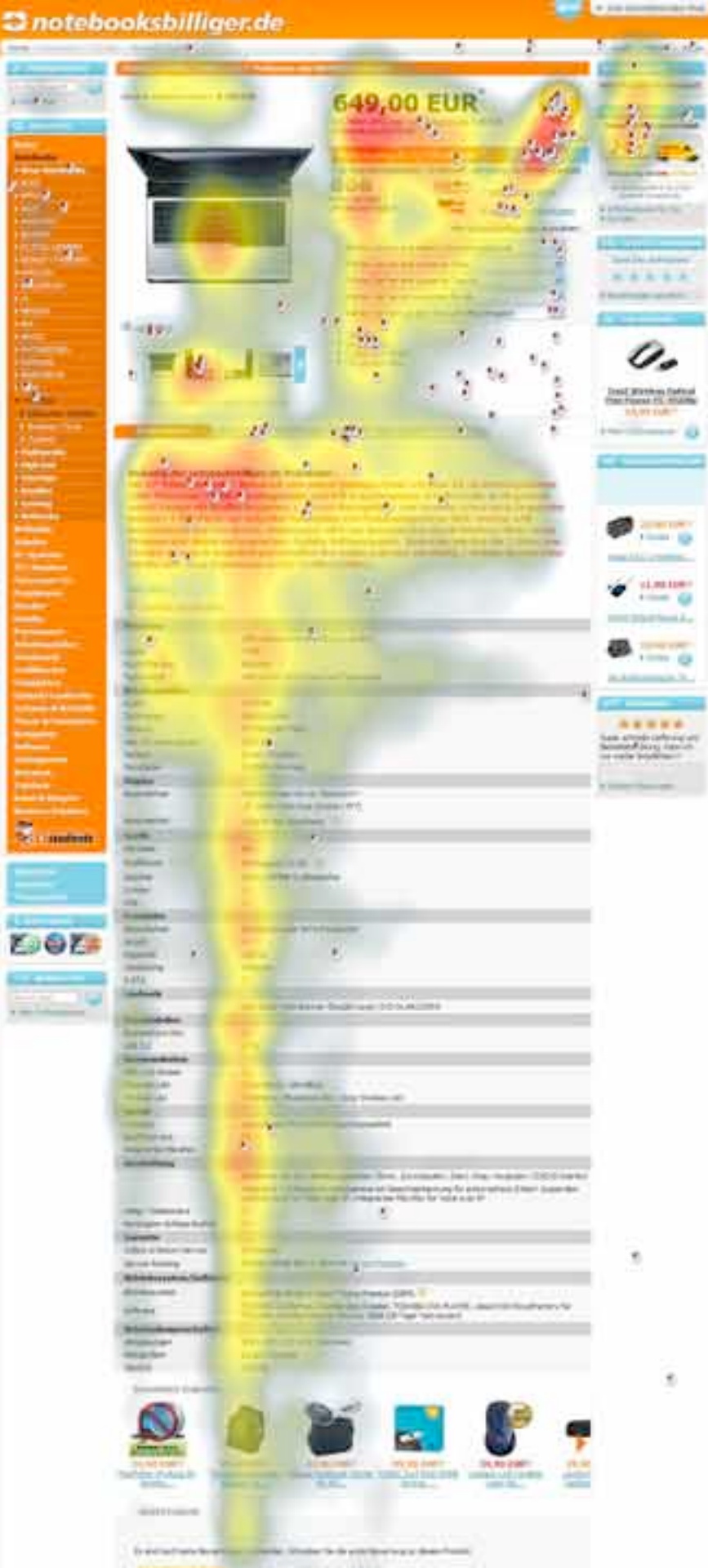
# Module / Subsysteme



Overgrowth Movement  
<https://www.youtube.com/watch?v=HLeb-NWOrsQ>



Star Citizen Hangar Module  
<https://www.youtube.com/watch?v=muMbBMc60e8>



# Evaluationsmethoden

## Wie wird evaluiert?

### **Nicht-empirisch (geringer Aufwand)**

Theoriegeleitete Evaluation (Modelle einsetzen zur Vorhersage)

Experten-Review

Checklisten

Cognitive Walkthroughs

### **Empirisch (hoher Aufwand)**

Fragebogen, Meinungsumfrage, Interviews Beobachten der Benutzer (mit Aufzeichnung)

A/B-Tests

Usability Tests (mit Nutzern und konkreten Aufgaben)

Physiologische Tests

Empathic Design: Ethnographische, ethno-methodologische Studien (partizipative Beobachtung)

### **Automatisch (mittlerer Aufwand)**

User Tracking



# GxD-Theorie



Universität Bayreuth

Angewandte Medienwissenschaft: Digitale Medien

Sommersemester 2017

## Game Experience Design

01 Einführung

Prof. Dr. Jochen Kaubek

25.04.2017



- Kognition
- Emotion
- Embodiement
- Kommunikation
- Subjektkonstitution
- Interfaces
- Sensory Design
- GUI
- Game Feel



An einem schwülen Dienstagnachmittag im Spätsommer 1994...

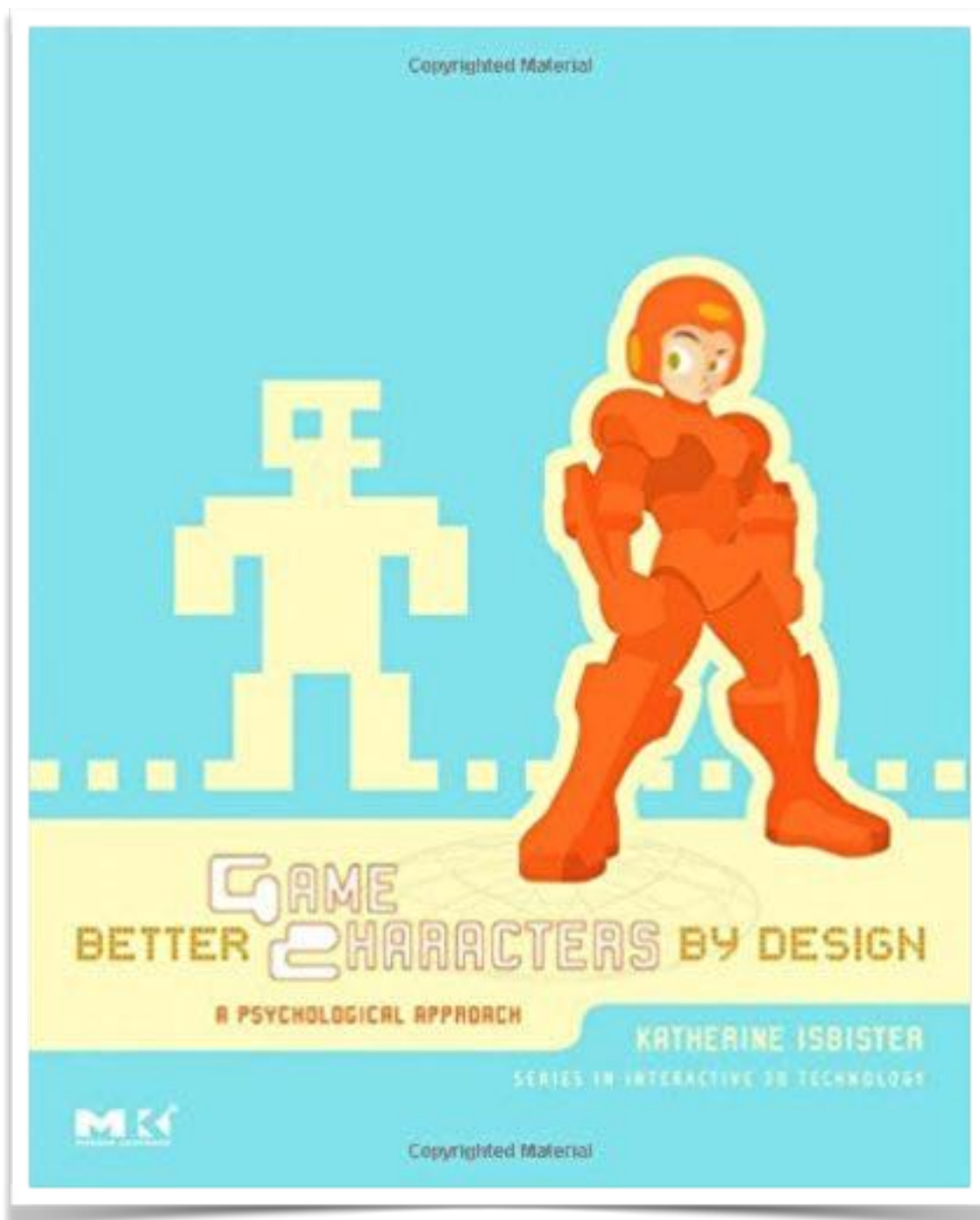


GAR NICHT SCHLECHT, JUNGER MANN, GUTE ARBEIT...  
AM VORNAMEN UND AN DER OBERWEITE KÖNNTE  
MAN EVENTUELL NOCH ETWAS FEILEN...

# Experten-Review



# Checklisten (Beispiel: Character Design)



## *General response.*

Does the player like this character?  
Are they interested in seeing more of this character?  
Does the character seem to come to life or does it seem mechanical?  
Is it fun to play with this character?  
Does the player want to know more about the character?  
What makes the person say so? (Ask them to provide memorable impressions of the character that led to this overall impression.)

## *Emotional direction.*

Is the player having the desired emotional responses to the character's actions? (Target moments that should be very emotional for a player and look to see if this is actually happening.)

## *Social legibility.*

If asked to describe the character, does the player describe the traits that were sketched out for this character?  
Can the player identify the social role of each NPC?

## *Affordances.*

Is the player clear about how to interact with NPCs?  
Does what is possible match up with what the player thinks of doing and/or wants to do?  
Is the player clear on the use value of NPCs (that is, what they can do for the player)?  
Is it fun to interact with the NPC, or is it in some way burdensome, annoying, or repetitive?

## *Identification.*

Does the player enjoy being the player-character?  
Does the experience of being this character work well at all four layers (visceral, cognitive, social, and fantasy—see Part IV)?  
What specific affordances or behaviors of the player-character cause very negative or positive reactions?

## *Connection.*

Does the player enjoy interaction with NPCs, beyond their functional value? Does the player want to see more (or less) of an NPC?  
How connected does the player feel to an NPC?  
How much empathy or antipathy does she or he express toward the NPC? What specific behaviors of the NPC cause very negative or positive reactions?

*Danger signs that a player does not like a character:*  
obvious or expressed boredom,  
rude behavior toward or comments about a character that is supposed to evoke empathy,  
avoidance of interaction with characters when it is optional, and  
expression of dissociation and impatience with the story of the game.

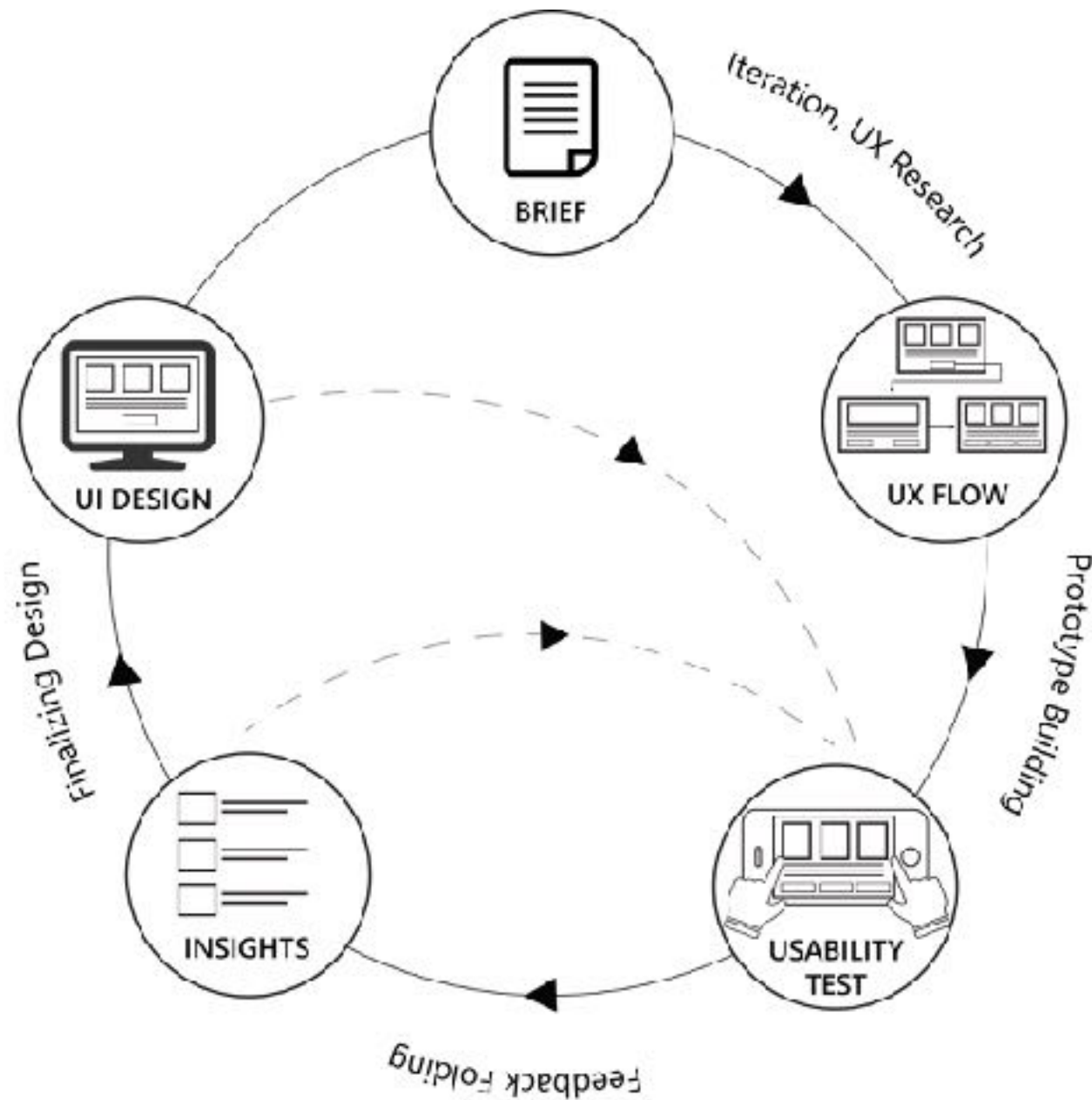
S. 274 f.

# UI Checkliste

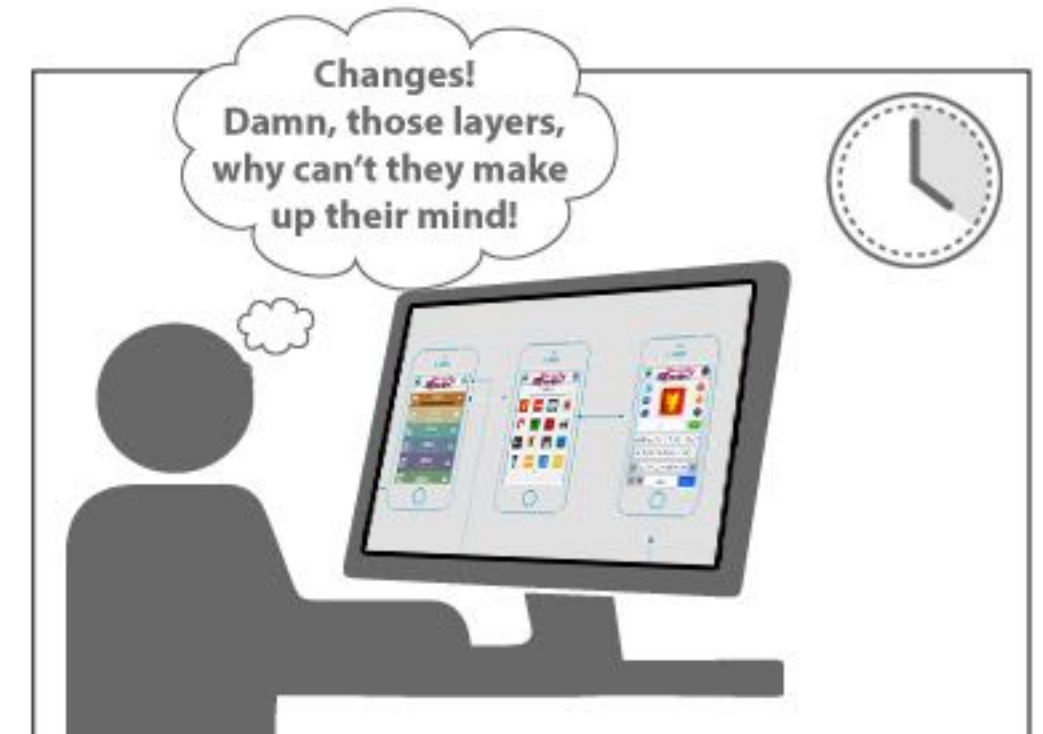
1. Does this interface tell me what I need to know right now?
2. Is it easy to find the information I'm looking for, or do I have to look around for it? (Are the menus nested so deep that they hide information from the player?)
3. Can I use this interface without having to read instructions elsewhere?
4. Are the things I can do on this screen obvious?
5. Do I ever need to wait for the interface to load or play an animation?
6. Are there any tedious or repetitive tasks that I can shorten (with a shortcut key, for example) or remove entirely?



# UX Walkthrough



**Changes in UX Flow.**



**Changes in UI Flow.**

# Empirisches GxD



Fragebögen

A/B-Tests

Physiologische Tests

Empathic Design

Durchführung



# Game Experience Questionnaire

[https://pure.tue.nl/ws/files/21666907/Game\\_Experience\\_Questionnaire\\_English.pdf](https://pure.tue.nl/ws/files/21666907/Game_Experience_Questionnaire_English.pdf)

## 2. Game Experience Questionnaire – Core Module

Please indicate how you felt while playing the game for each of the items, on the following scales:

- | not at all                             | slightly | moderately | fairly | extremely |
|----------------------------------------|----------|------------|--------|-----------|
| 0                                      | 1        | 2          | 3      | 4         |
| < >                                    | < >      | < >        | < >    | < >       |
| 1 I felt content                       |          |            |        |           |
| 2 I felt skilful                       |          |            |        |           |
| 3 I was interested in the game's story |          |            |        |           |
| 4 I thought it was fun                 |          |            |        |           |
| 5 I was fully occupied with the game   |          |            |        |           |
| 6 I felt happy                         |          |            |        |           |
| 7 It gave me a bad mood                |          |            |        |           |
| 8 I thought about other things         |          |            |        |           |
| 9 I found it tiresome                  |          |            |        |           |
| 10 I felt competent                    |          |            |        |           |
| 11 I thought it was hard               |          |            |        |           |
| 12 It was aesthetically pleasing       |          |            |        |           |
| 13 I forgot everything around me       |          |            |        |           |

## Core Module, In-Game version

Competence

Sensory and Imaginative Immersion

Flow

Tension/Annoyance

Challenge

Negative affect

Positive affect

## Social Presence Module

Psychological Involvement – Empathy

Psychological Involvement – Negative Feelings

Behavioural Involvement

## Post-game Module

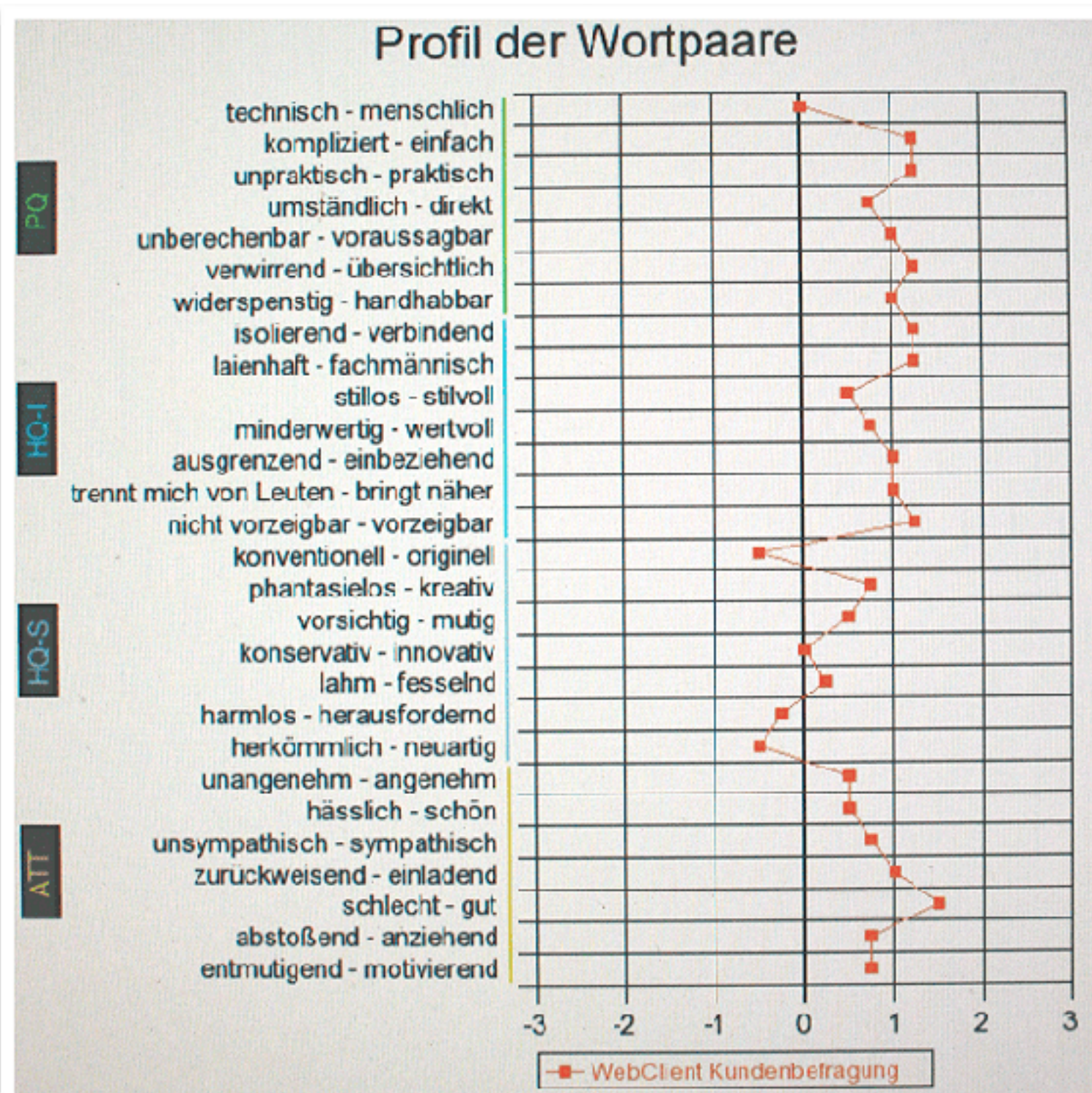
Positive Experience

Negative experience

Tiredness

Returning to Reality

# Fragebogen: Wortpaare



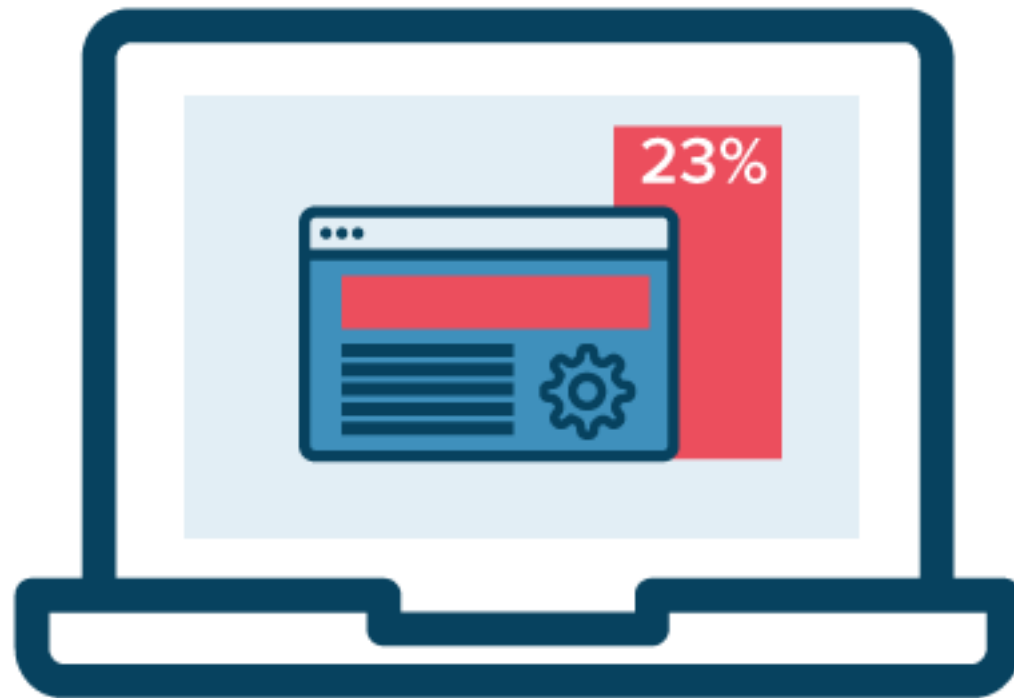
Wortpaare werden vor allem zur  
Beurteilung von Wirkungen eingesetzt



# A/B-Tests

<https://thetool.io/2017/app-ab-testing-strategy-mistakes>

## A



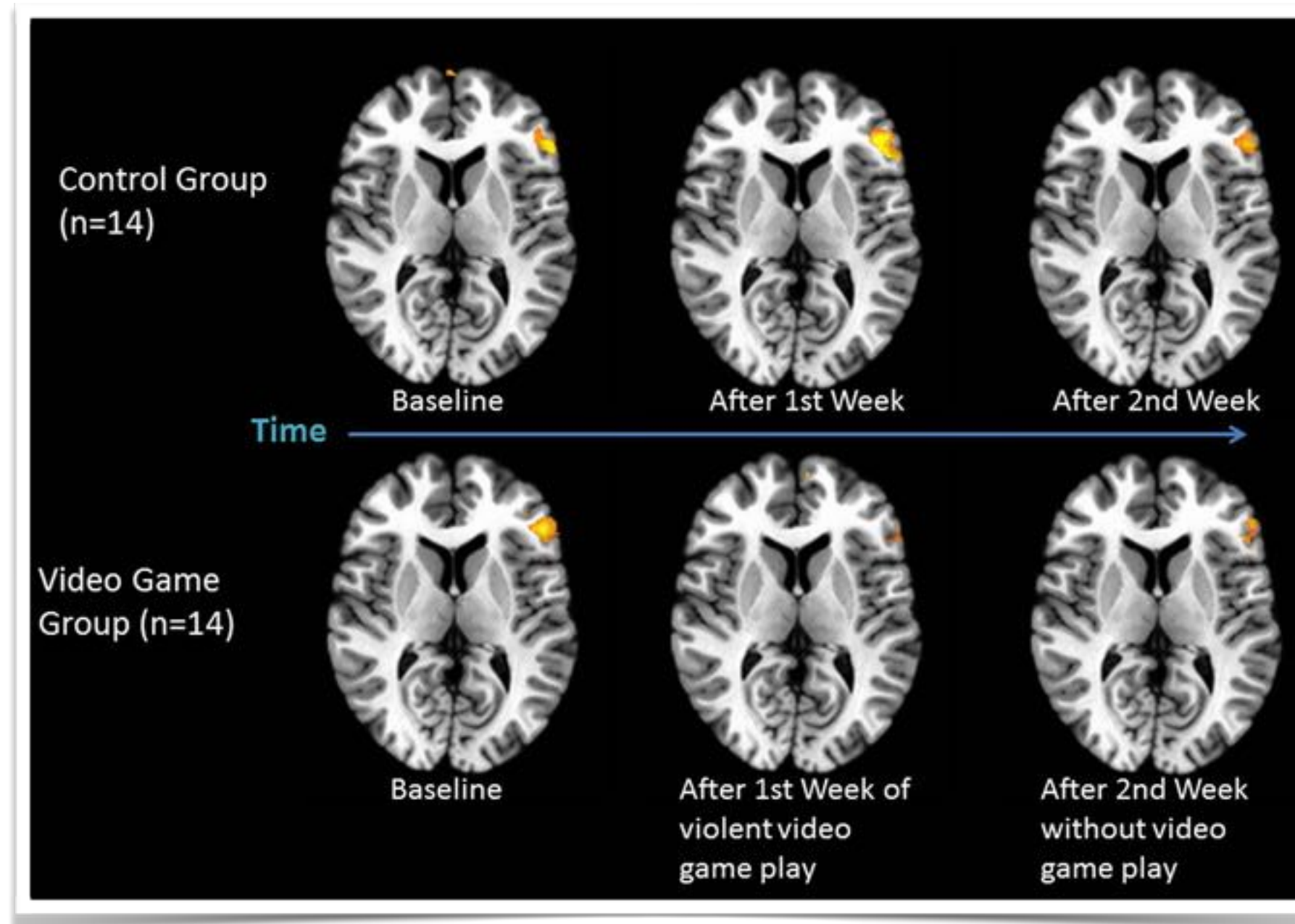
CONTROL

## B



VARIATION

# Physiologische Tests



EMG (Muskelspannung)

EDA (Hautleitfähigkeit)

EKG (Herzaktivitäten)

Puls / Blutdruck

EEG

MRT

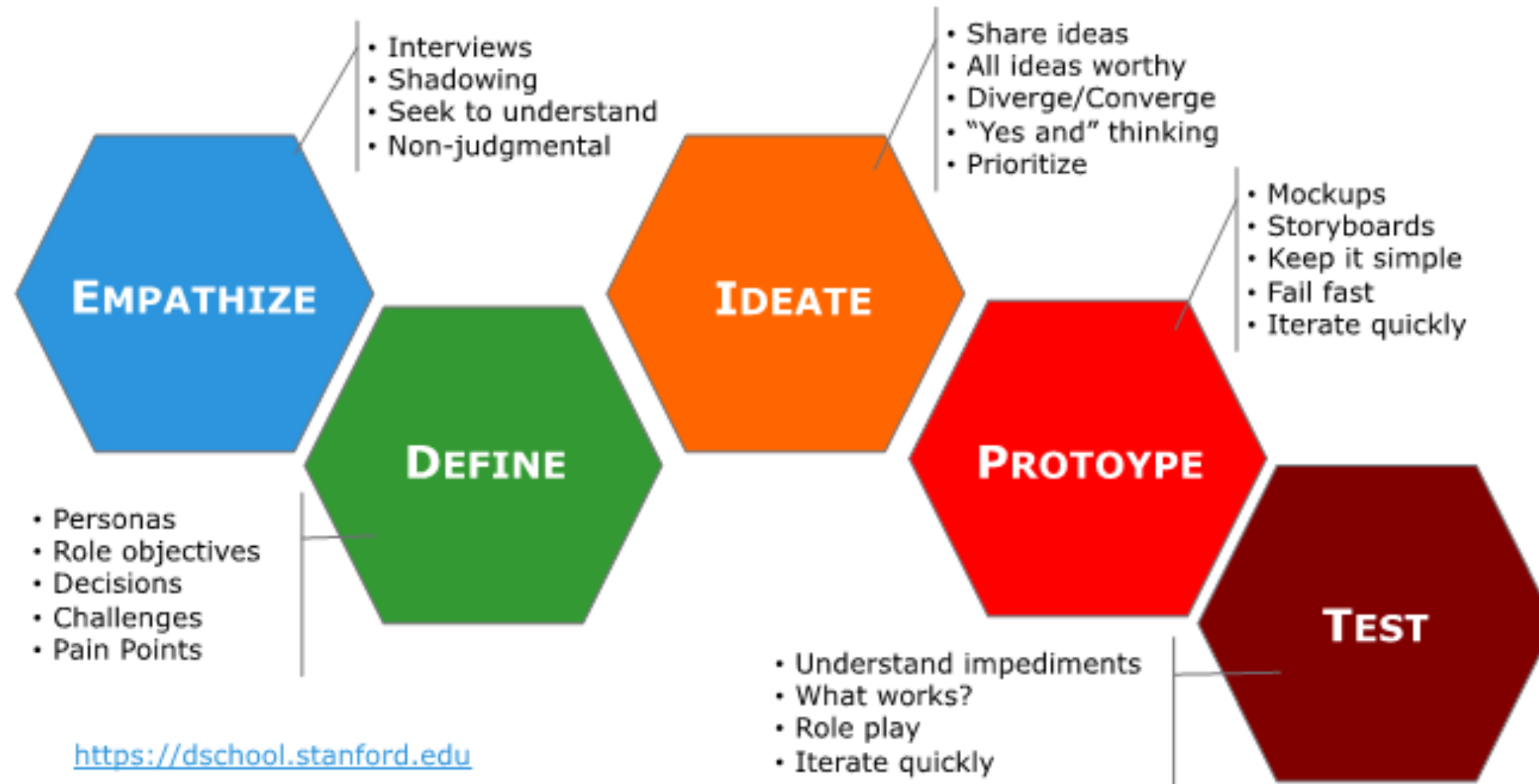
Enzyme

Hormonspiegel



# Empathic Design / Human Centered Design

## Stanford d.school Design Thinking Process



<https://sites.google.com/site/empathycodesign/sort/about-design>

# Usability Test

## Vorbereitung

Zielgruppe bestimmen

Benutzer auswählen? (Repräsentativität)

Kosten bestimmen (Dauer des Tests,  
Vergütung der Testbenutzer)

Zeitplan aufstellen

Evaluatoren auswählen

Equipment für Tests beschaffen

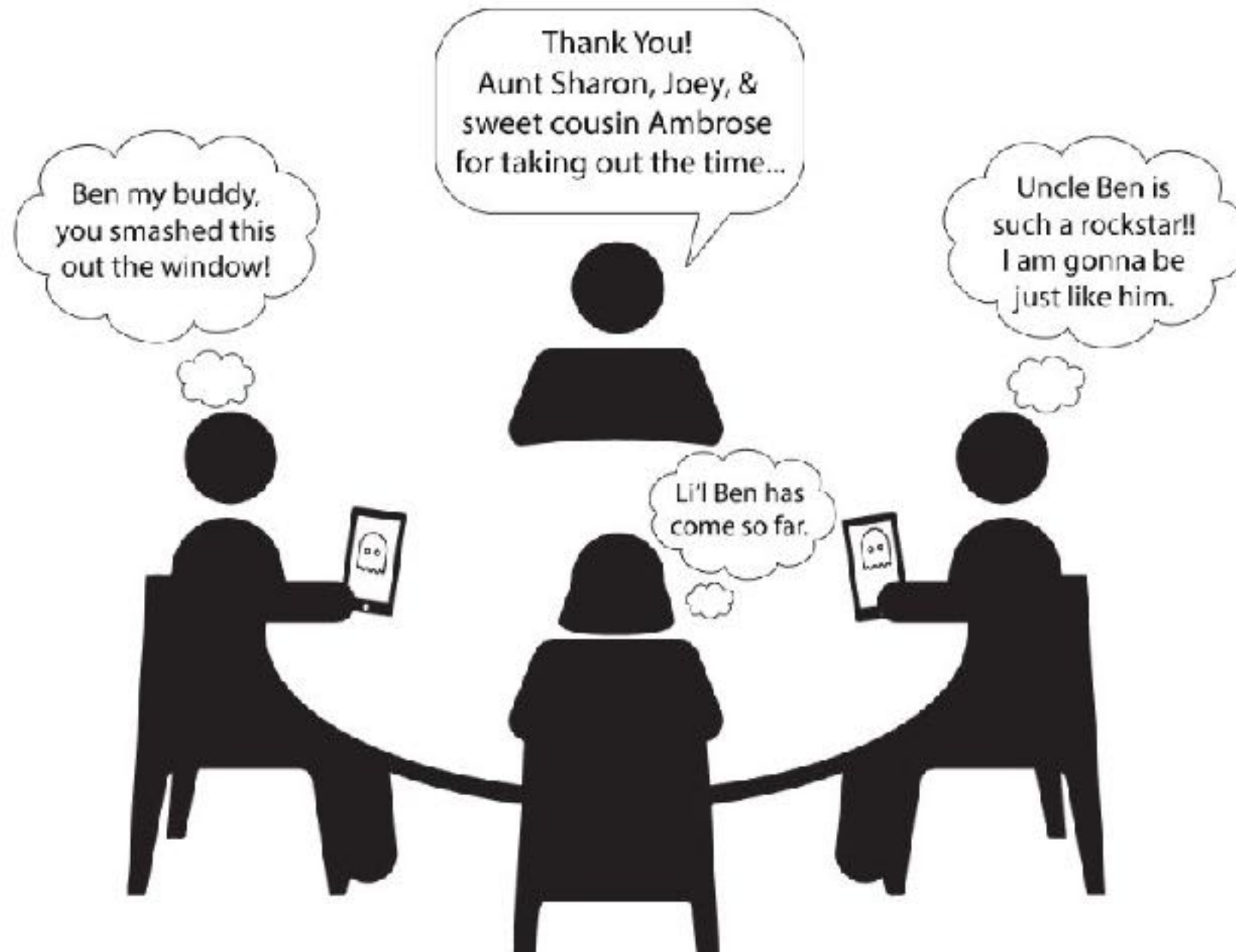


Typischer Usability Test

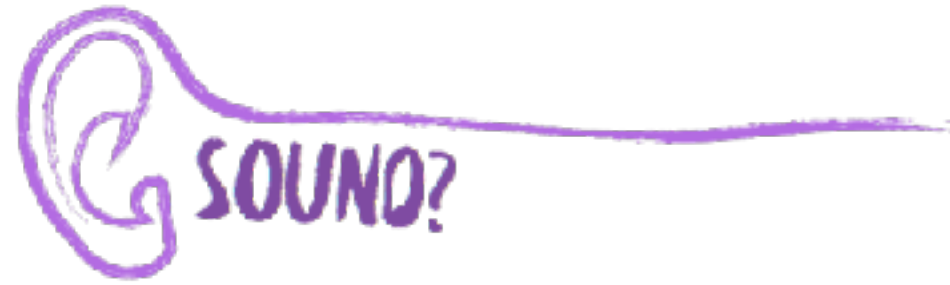


# Evaluation Bias

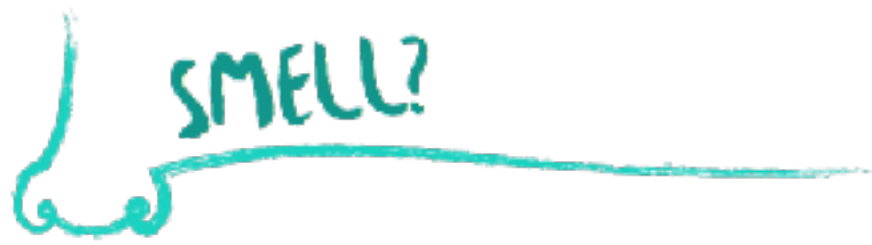
<https://www.linkedin.com/pulse/ux-walkthrough-anatomy-usability-test-video-games-part-1-om-tandon>



# Embodied Testing



Playtesters shouldn't OVERHEAR DEVELOPER DISCUSSIONS  
Playtesters shouldn't GET AN EARFUL OF QUESTIONS  
Playtests shouldn't ever be held on a NOISY EXPO FLOOR



A playtest shouldn't SMELL LIKE FEAR  
Playtests shouldn't come up SMELLING OF ROSES



Playtesters shouldn't FEEL SICK  
Playtests should feel IN CONTROL  
Playtesters should FEEL WELCOME



Playtesters shouldn't be REWARDED WITH FOOD  
Playtest food shouldn't be SICKLY, SMELLY OR SUGARY  
Playtests shouldn't leave a BAD TASTE IN THE MOUTH

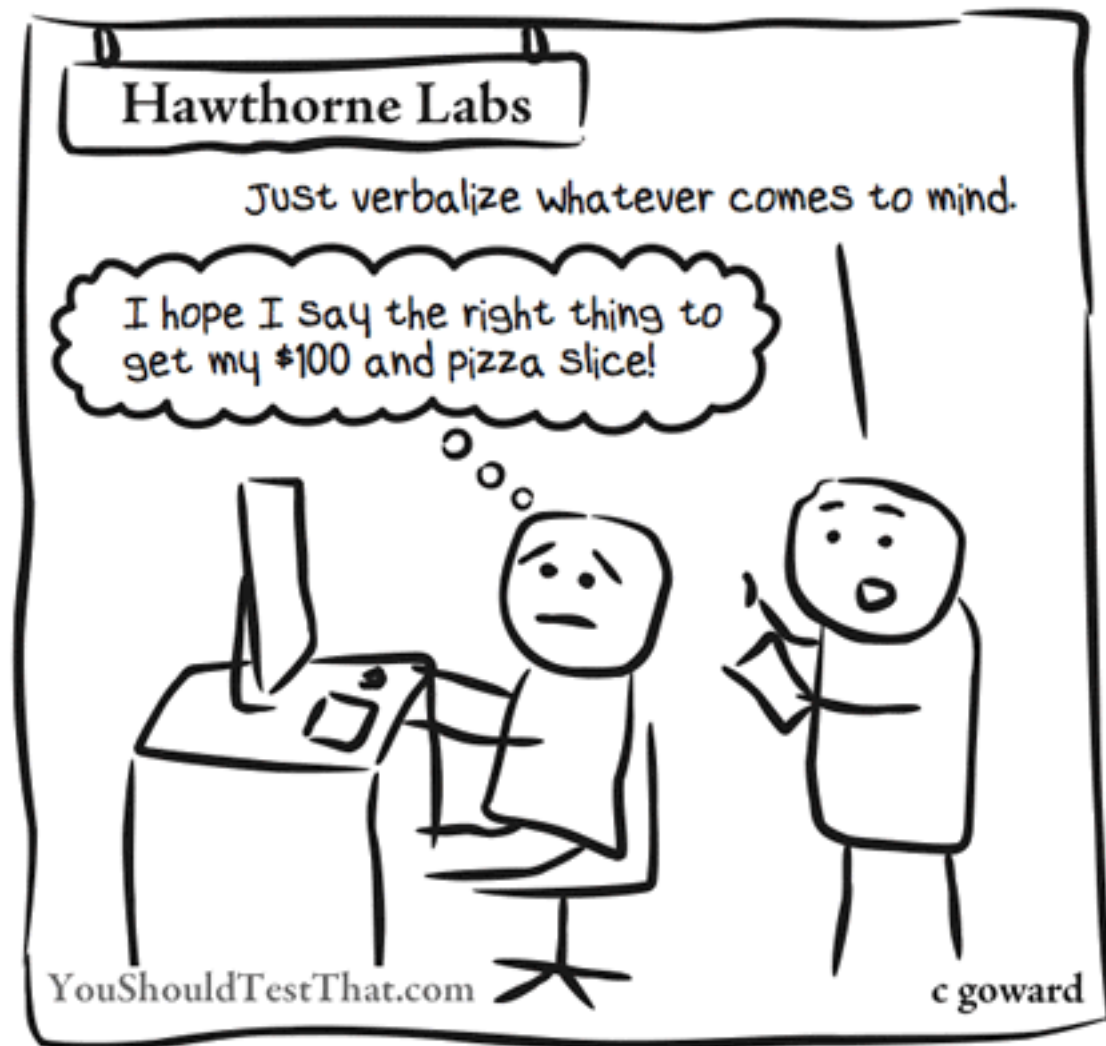


Playtesting shouldn't look like a MARKETING EXERCISE  
Playtesting sessions shouldn't look LIKE A SCAM



# Top 7 Ways to Ignore Player Feedback

[http://www.gamasutra.com/blogs/TanyaXShort/20151110/259017/Top\\_7\\_Ways\\_to\\_Ignore\\_Player\\_Feedback.php](http://www.gamasutra.com/blogs/TanyaXShort/20151110/259017/Top_7_Ways_to_Ignore_Player_Feedback.php)



Remind yourself that they don't get it.

Clarify to the playtester what they didn't understand.

Show them how to play it correctly.

Are they younger/less experienced than you?

Are they older/irrelevant?

Don't let them play your game.

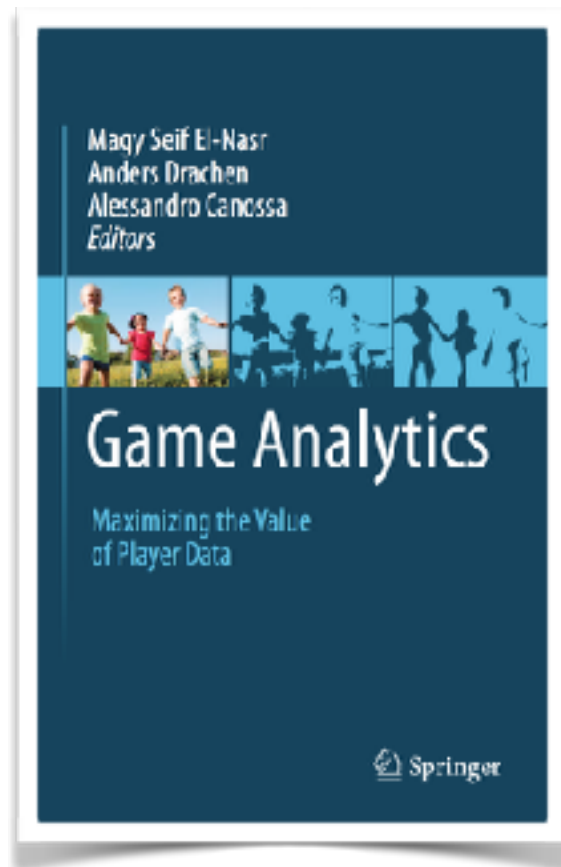
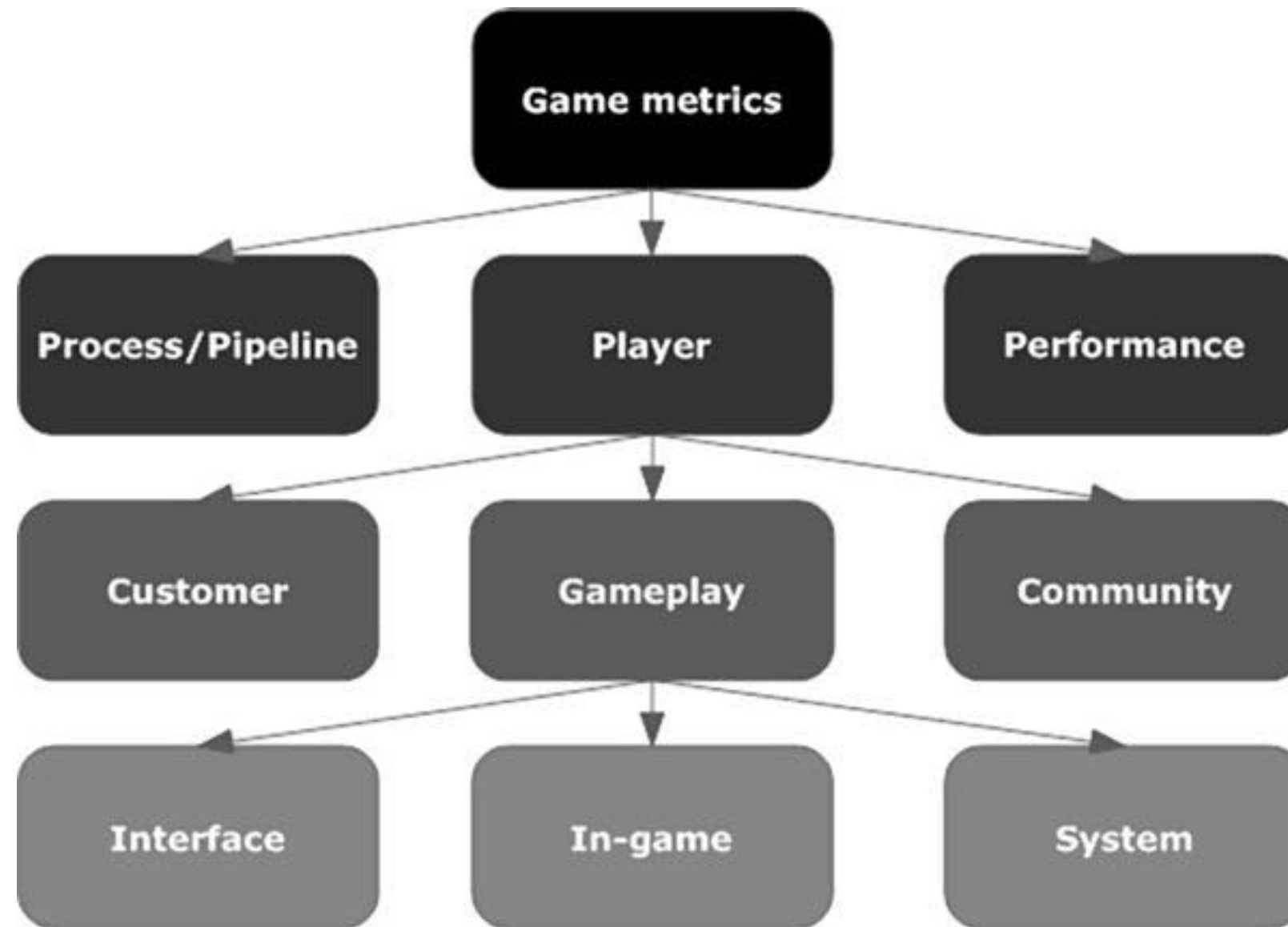
Don't make games at all!

# Game Experience Tracking





# Spiele-Metriken



# Spiele-Metriken

a game metric is a quantitative measure of one or more attributes of one or more objects that operate in the context of games.

## **User metrics**

total playtime per player, average number of in-game friends per player or average damage dealt per player

## **Performance metrics**

frame rate, game server stability.

## **Process metrics**

task size estimation with burn down charts, average turnaround time of new content being delivered, type and effect of blocks to the development pipeline



# Spieler-Metriken

## **Customer metrics**

Covers all aspects of the user as a customer, e.g. cost of customer acquisition and retention

## **Community metrics**

Covers the movements of the user community at all levels of resolution, e.g. forum activity.

## **Gameplay metrics**

Any variable related to the actual behavior of the user as a player – inside the game, e.g. object interaction, object trade, and navigation in the environment

# Gameplay-Metriken

Five types of information can be logged whenever a player does something – or is exposed to something – in a game: What is happening? Where is it happening? At what time is it happening? In addition, when multiple objects (e.g. players) interact: to whom is it happening?

**In-game:** Covers all in-game actions and behaviors of players, including navigation, economic behavior as well as interaction with game assets such as objects and entities. This category will in most cases form the bulk of collected user telemetry.

**Interface:** Includes all interactions the user (player) performs with the game interface and menus. This includes setting game variables, such as mouse sensitivity, monitor brightness.

**System:** System metrics cover the actions game engines and their sub-systems (AI system, automated events, MOB/NPC actions, etc.) initiate to respond to player actions. For example, a MOB attacking a player character if it moves within aggro range, or progressing the player to the next level upon satisfaction of a pre-defined set of conditions.



# Genre-spezifische Metriken I

**Action:** anything that relates to the reflex-based mechanics.

**FPS:** Weapon use, trajectory, item/asset use, character/kit choice, level/map choice, loss/win [quota], heatmaps, team scores, map lethality, map balance, vehicle use metrics, strategic point captures/losses, jumps, crouches, special moves, object activation. AI-enemy damage inflicted+trajectory. Possibly even projectile tracking.

**TPS:** as for FPS + camera angle, character orientation.

**Racing:** Track choice, vehicle choice, vehicle performance, win/loss ratio per track and vehicle, completion times, completion ratio per track and player, upgrades [if possible], color scheme [if possible], hits, avg. speed different types of tracks/track shapes.

# Genre-spezifische Metriken II

**Adventure:** story progression [e.g. node based], NPC interaction, trajectory, puzzle completion, character progression, character item use, world item use, AI-enemy performance, damage taken and received+source (player, mob).

**Arcade:** trajectory, powerup usage, special ability usage, session length, stages completed, points reached, unlocks, opponent type damage dealt/received, player damage dealt/received [as applicable].

**Platformer:** jumping, progression speed, items collected, powerups/abilities used, AI-enemy performance, damage taken + sources of damage.

# Genre-spezifische Metriken III

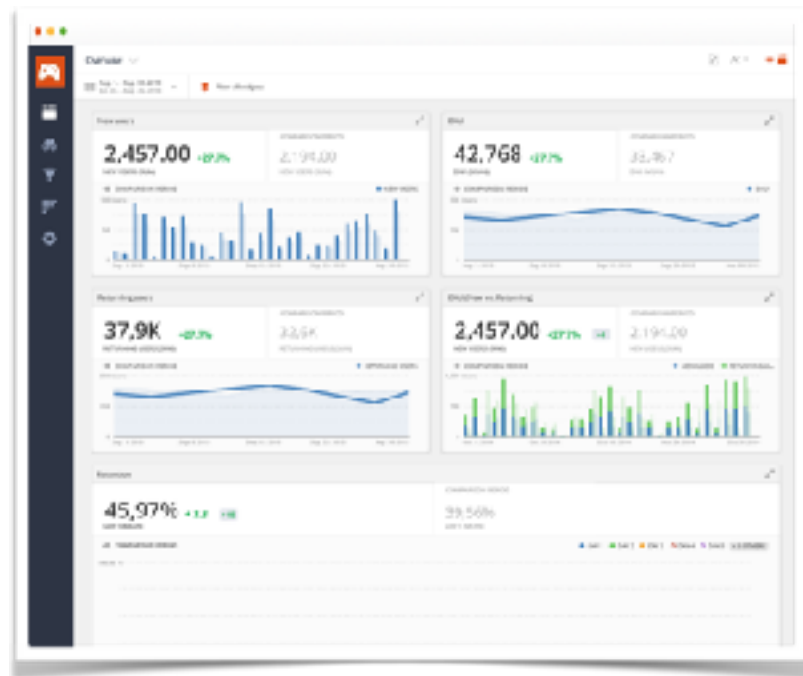
**RPG:** character progression, quest completions, quest time to complete, asset use (resources), character ability/item use [including context of use], combat statistics, AI-enemy performance, story progression [including choices], NPC interactions [e.g. communication], ability/item performance, damage taken+sources of damage, cutscene viewed/skipped, items collected [including spatial info].

**Strategy:** all features related to player strategy and control. Generally two types of things players can build: building and units. Selections and order of selection are crucial metrics. Commands given to units, upgrades purchased, trajectory, win/loss ratio, team/race/color selection, maps used, map settings, match/game settings (usually strategy games have some settings that affect the core mechanics). Race/aspect/team chosen, time spent on building tasks vs. unit tasks.

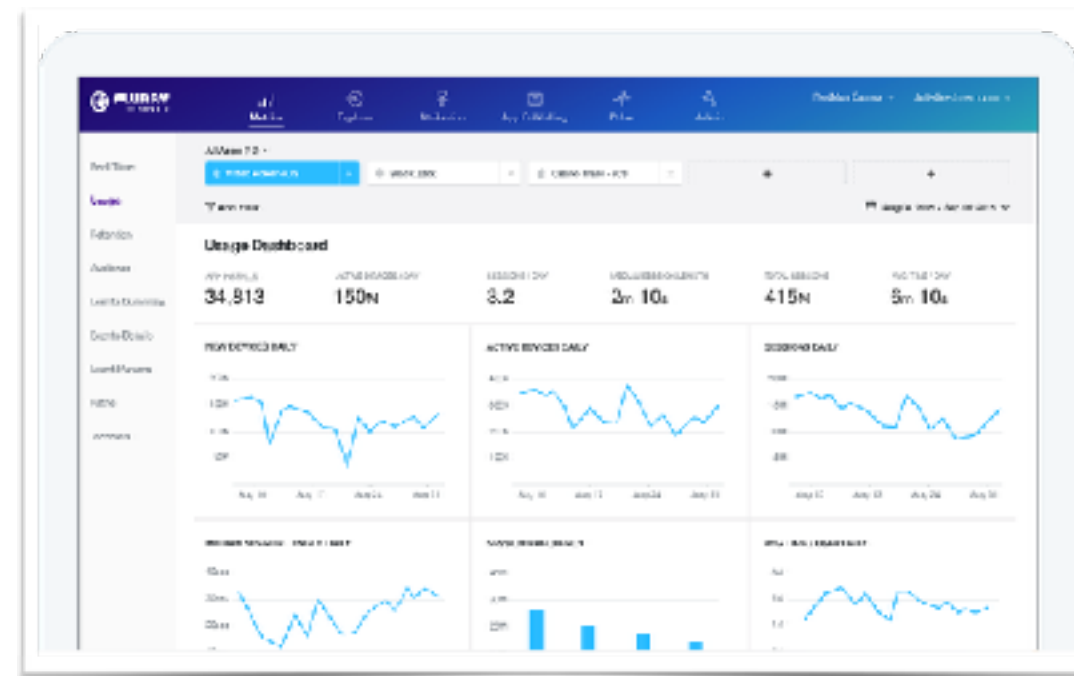
...



# Analyse-Werkzeuge



GameAnalytics



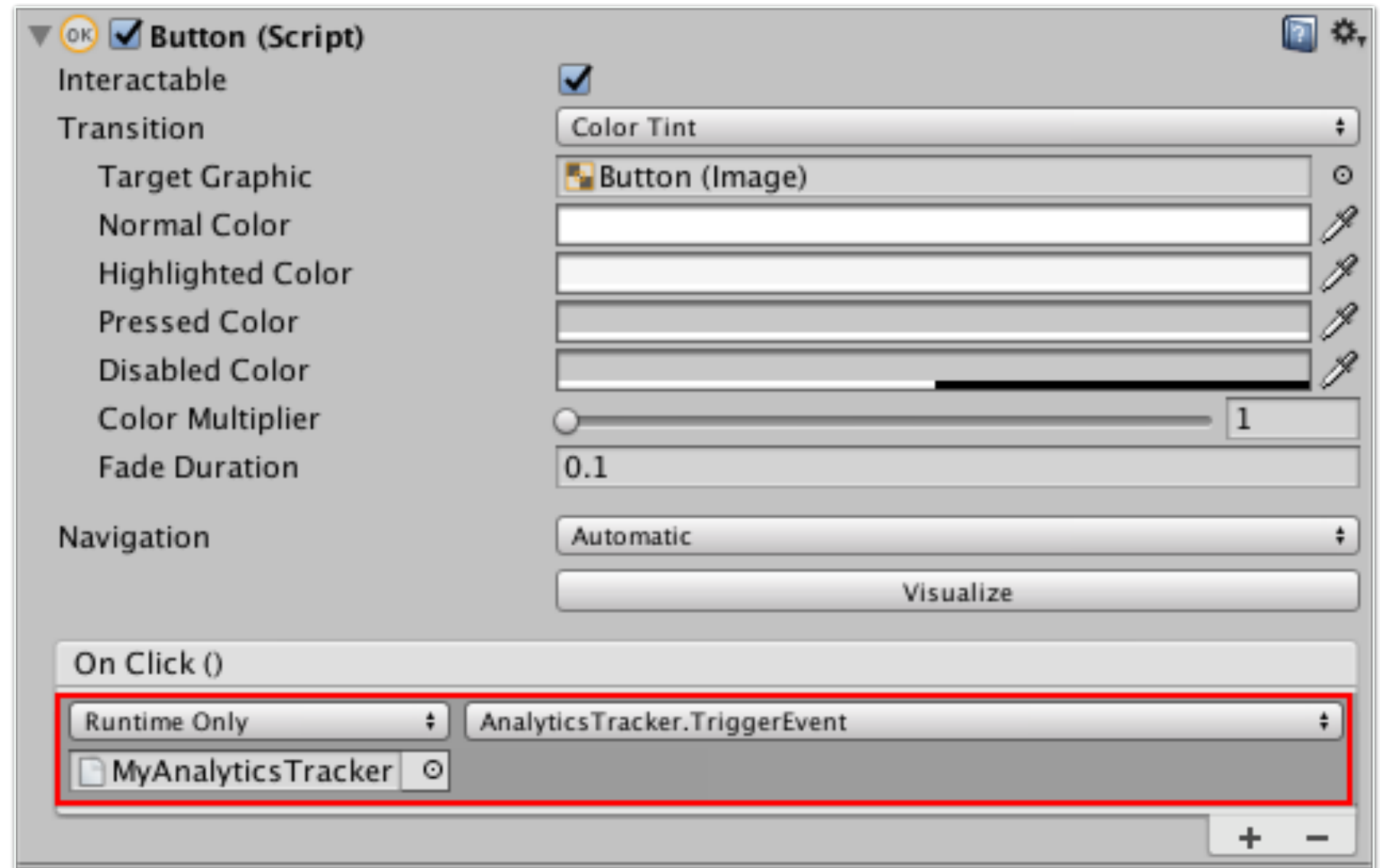
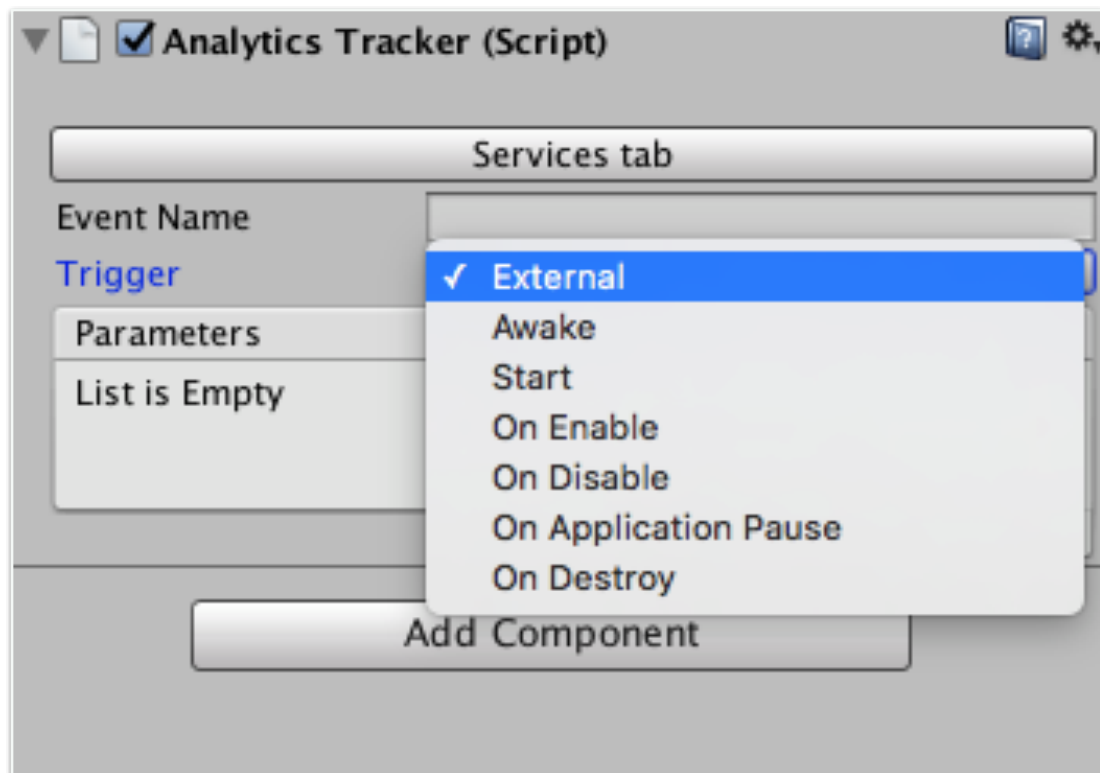
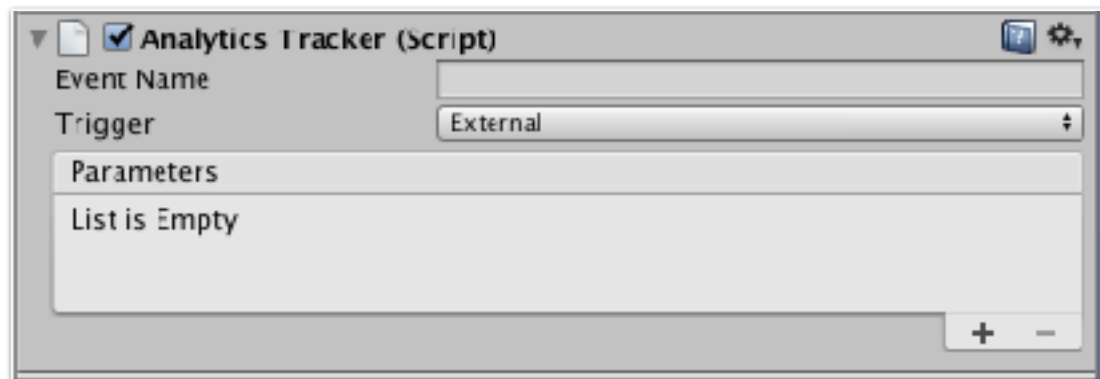
Flurry Analytics



Unity Analytics

# Unity Analytics Tracker Component

<https://docs.unity3d.com/Manual/UnityAnalyticsAnalyticsTracker.html>



In this example, a GameObject called MyAnalyticsTracker has an Analytics Tracker component with its Trigger type set to External. This button component can trigger the event by invoking AnalyticsTracker.TriggerEvent in its OnClick event.

# Custom Event Scripting

```
// Reference the Unity Analytics namespace
using UnityEngine.Analytics;

// Use this call for wherever a player triggers a custom event
Analytics.CustomEvent(string customEventName,
IDictionary<string, object> eventData);

// Reference the Collections Generic namespace
using System.Collections.Generic;

int totalPotions = 5;
int totalCoins = 100;
string weaponID = "Weapon_102";
Analytics.CustomEvent("gameOver", new Dictionary<string, object>
{
    { "potions", totalPotions },
    { "coins", totalCoins },
    { "activeWeapon", weaponID }
});
```



# Auswertung

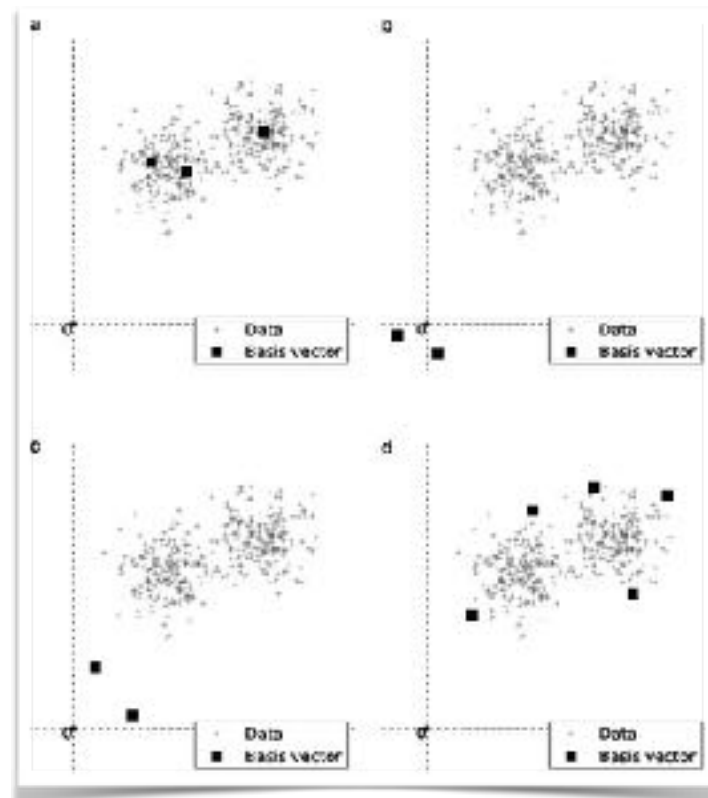
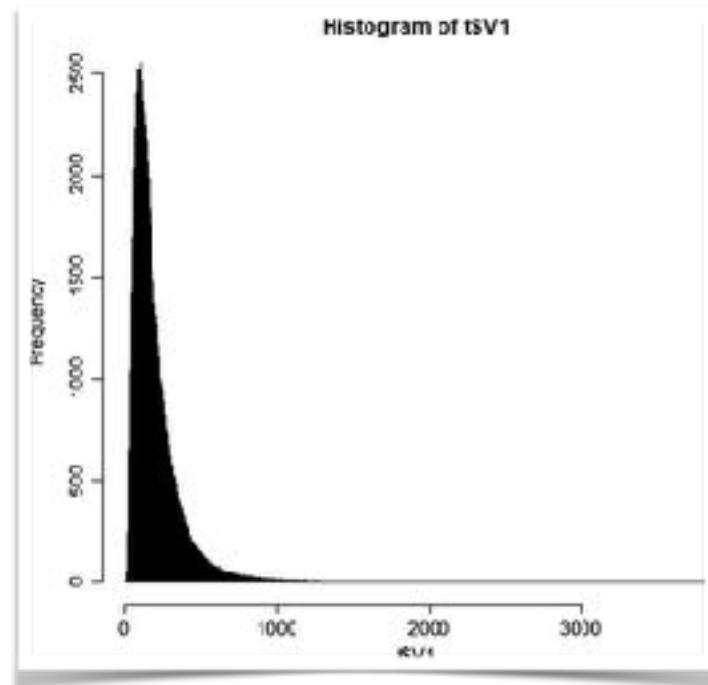
Deskription

A/B-Tests (isolierte Abweichungen)

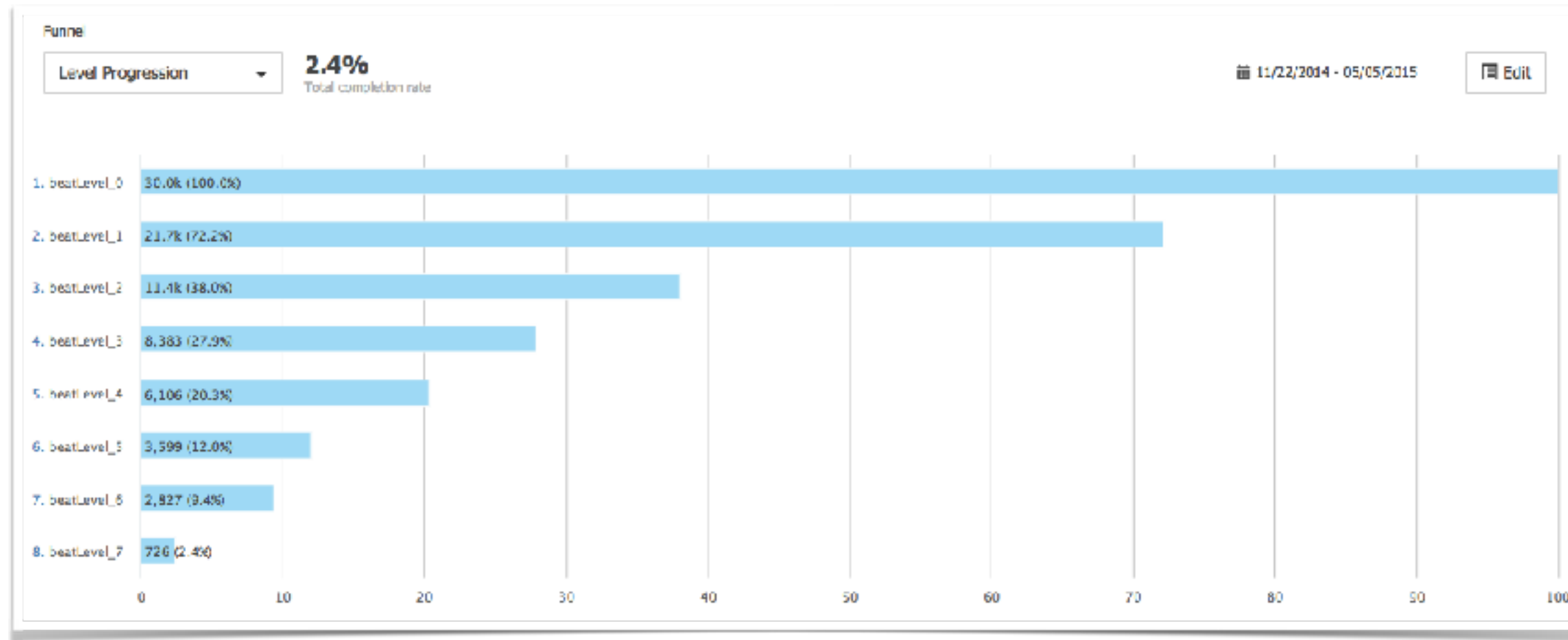
Statistik (Mittelwerte, Varianzen, Verteilungen, Korrelationen, Regressionen)

Clustering (unbekannte Klassen)

Data Mining (unbekannte Korrelation)

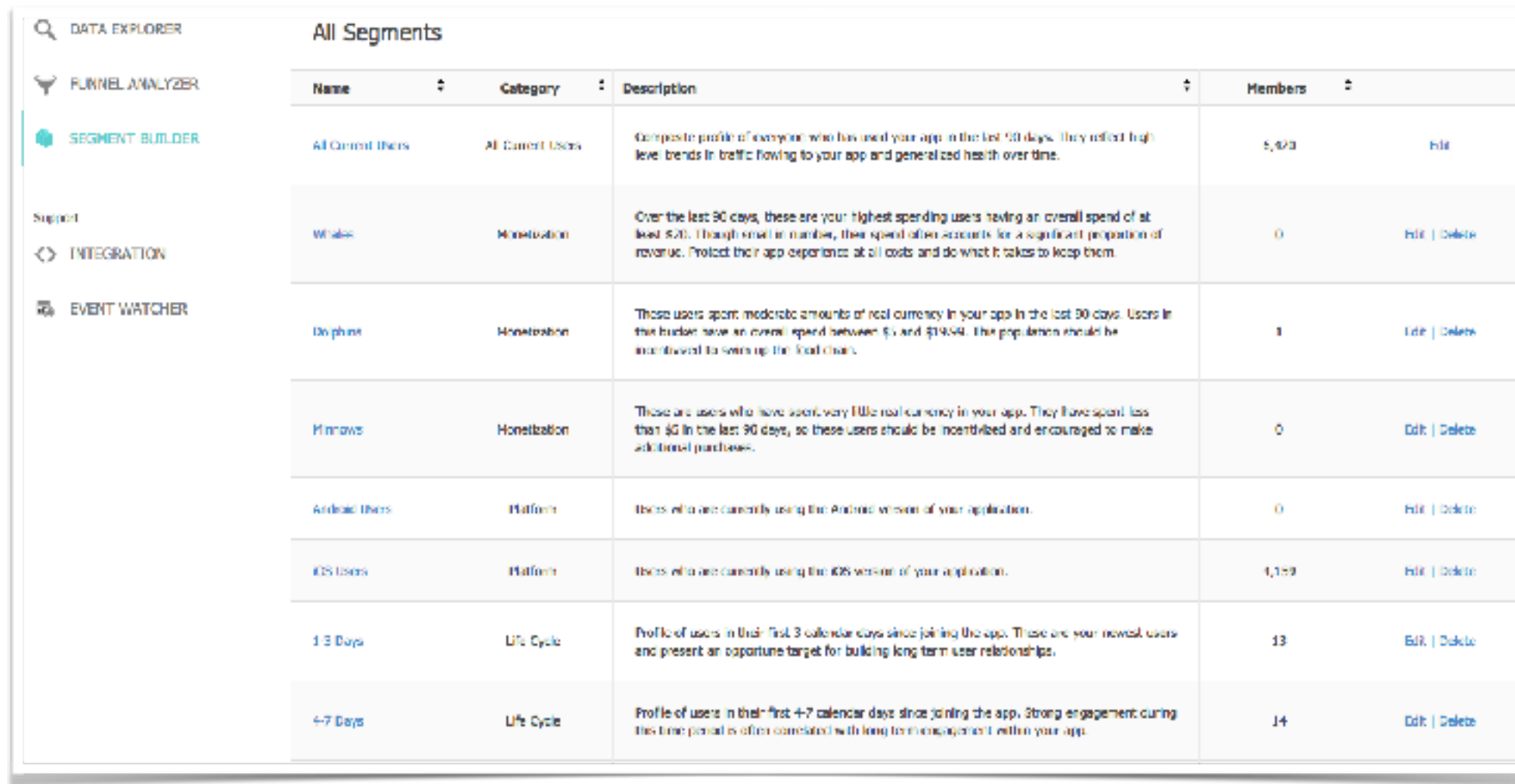


# Funnel



A funnel is a visual interpretation of how players move through a series of events (steps)

# Segments



The screenshot shows a software interface with a sidebar on the left containing navigation items: DATA EXPLORER, FUNNEL ANALYZER, SEGMENT BUILDER (highlighted), Support, INTEGRATION, and EVENT WATCHER. The main area is titled 'All Segments' and displays a table of user segments.

| Name              | Category          | Description                                                                                                                                                                                                                                                                     | Members |               |
|-------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------|
| All Current Users | All Current Users | Composite profile of everyone who has used your app in the last 90 days. They reflect high level trends in traffic flowing to your app and generalized health over time.                                                                                                        | 5,423   | Edit          |
| Whales            | Monetization      | Over the last 90 days, these are your highest spending users having an overall spend of at least \$20. Though small in number, their spend often accounts for a significant proportion of revenue. Protect their app experience at all costs and do what it takes to keep them. | 0       | Edit   Delete |
| Dolphins          | Monetization      | These users spent moderate amounts of real currency in your app in the last 90 days. Users in this bucket have an overall spend between \$5 and \$19.99. This population should be incentivized to swim up the food chain.                                                      | 1       | Edit   Delete |
| Minnows           | Monetization      | These are users who have spent very little real currency in your app. They have spent less than \$5 in the last 90 days, so these users should be incentivized and encouraged to make additional purchases.                                                                     | 0       | Edit   Delete |
| Android Users     | Platform          | Users who are currently using the Android version of your application.                                                                                                                                                                                                          | 0       | Edit   Delete |
| iOS Users         | Platform          | Users who are currently using the iOS version of your application.                                                                                                                                                                                                              | 1,159   | Edit   Delete |
| 1-3 Days          | Life Cycle        | Profile of users in their first 3 calendar days since joining the app. These are your newest users and present an opportune target for building long term user relationships.                                                                                                   | 13      | Edit   Delete |
| 4-7 Days          | Life Cycle        | Profile of users in their first 4-7 calendar days since joining the app. Strong engagement during this time period is often correlated with long term engagement within your app.                                                                                               | 14      | Edit   Delete |

**Behavioral:** Engagement, session length, session frequency

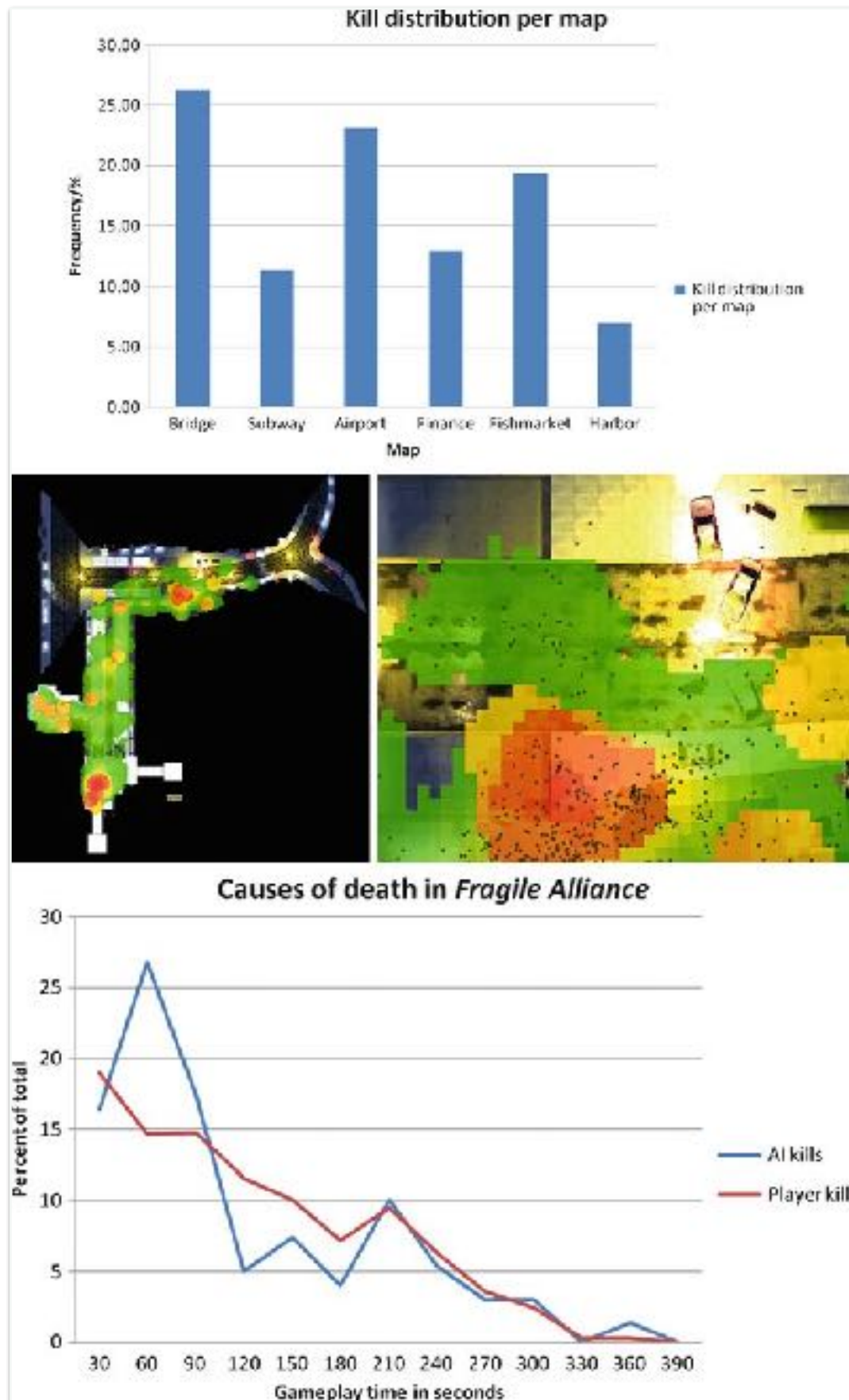
**Lifecycle:** Number of days since first session

**Demographic:** Age, gender, geography, platform

Segments are groups of players (users) who embody a particular trait or have completed a specific action within a specific period of time.

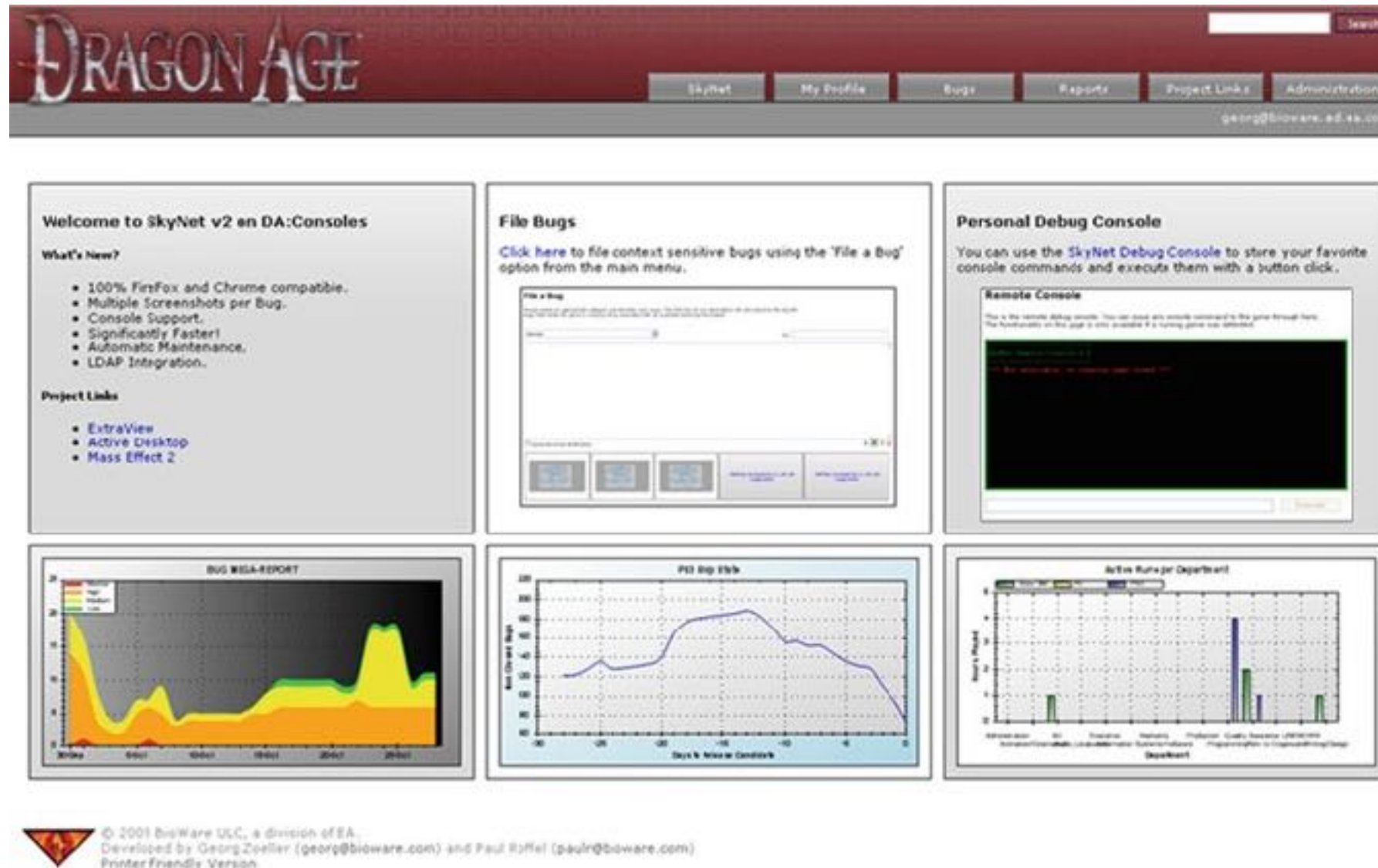


# Visualisierung



- Graphen
- Diagramme
- Räumliche Visualisierung

# Entwickler-Tools



# Third-Party-Tools



[See the trailer](#)

89

out of 100

## Metascore

Generally favorable reviews  
based on [77 Critics](#)

[What's this?](#)

**Summary:** Hero Isaac Clarke returns for another heart-pounding adventure, taking the fight to the Necromorphs in this thrilling action-horror experience. New tools to gruesomely slice and dismember the Necromorphs complement Isaac's signature Plasma Cutter, empowering him as he meets new characters, e... [Expand](#) ▼

8.2

## User Score

Generally favorable reviews  
based on [213 Ratings](#)

Your Score



10

[Login to rate.](#)

**Developer:** Visceral Games

**Genre(s):** Other Shooters

**Cheats:** [On GameFAQs](#)

**Rating:** M

[More Details and Credits »](#)

## Critic Reviews

Positive:  75  
Mixed:  2  
Negative:  0

## User Reviews

[Write a Review](#)

Positive:  75  
Mixed:  2  
Negative:  2



# Spiel



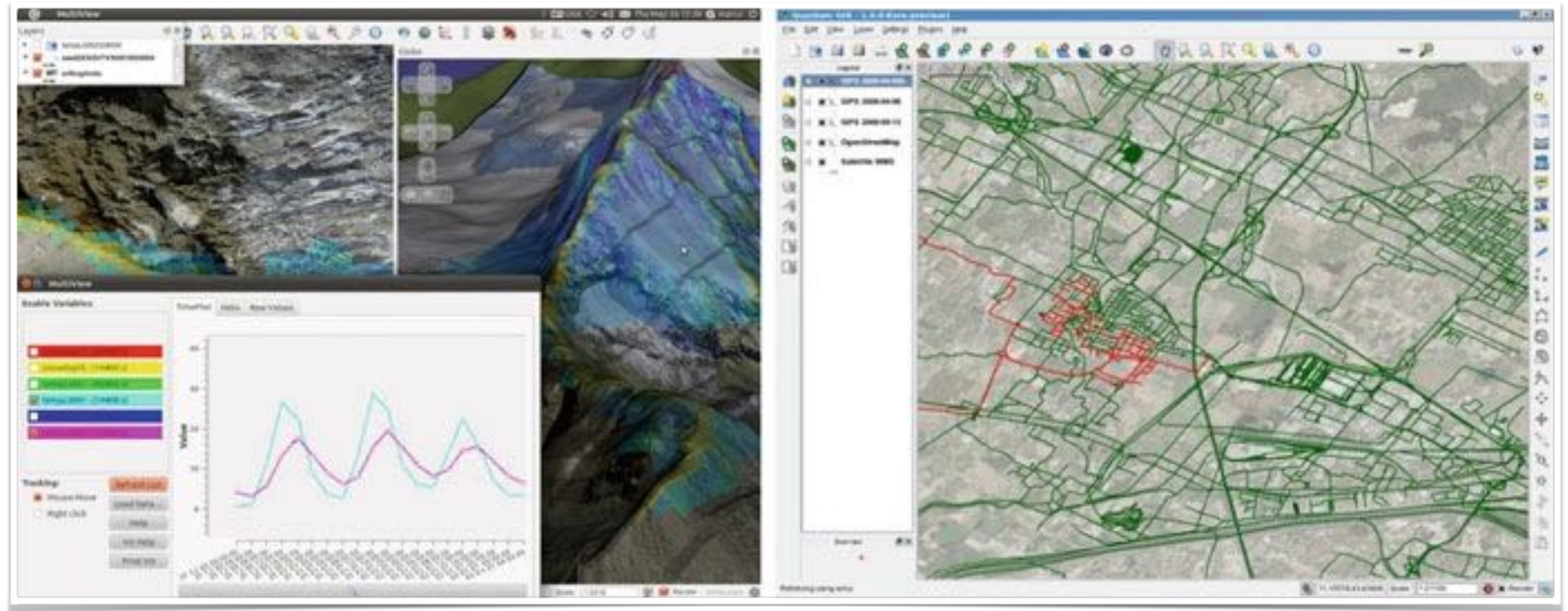
# Community-Tools



Minecraft Eihort

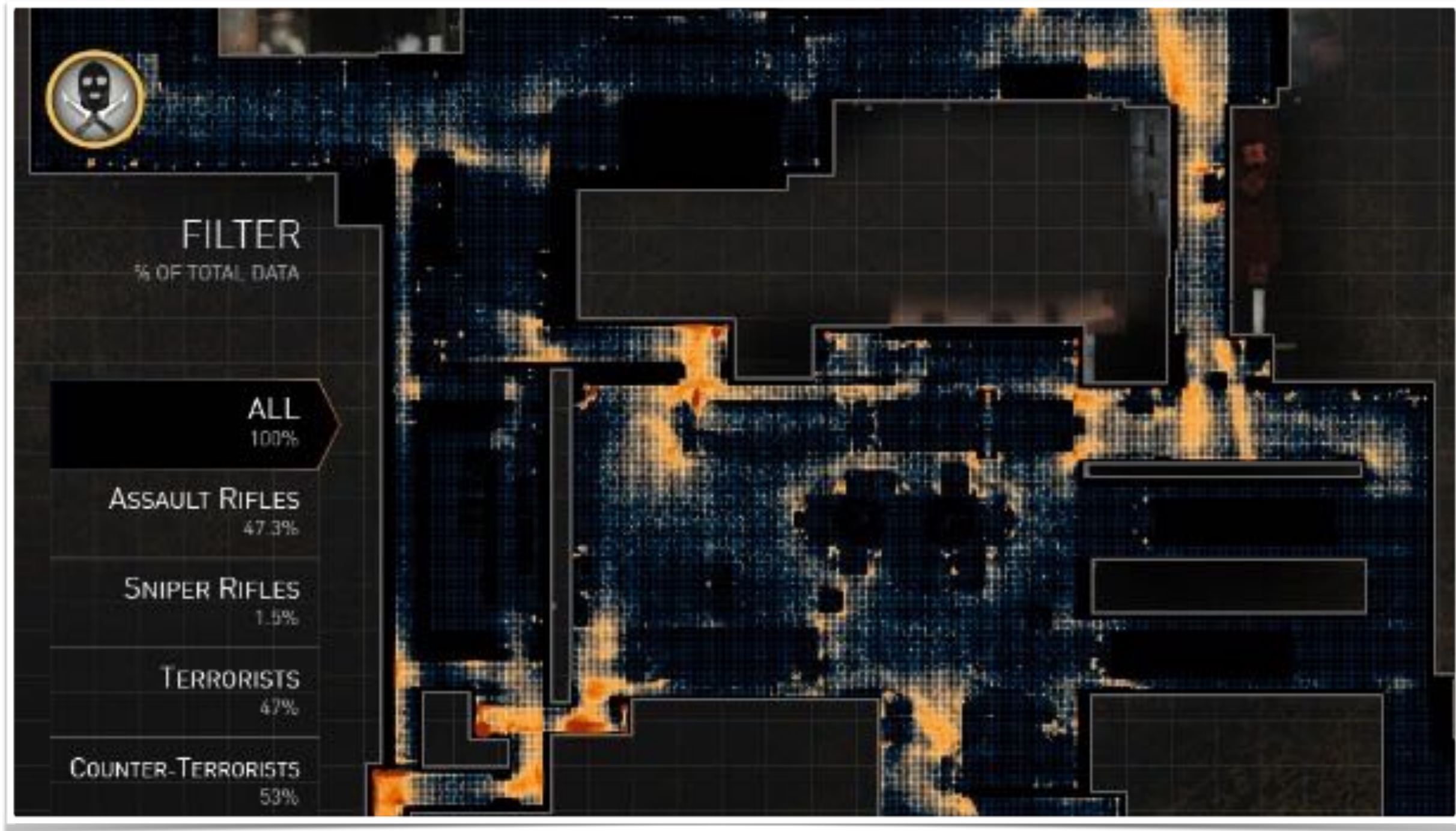


# Geo-Information-Systeme



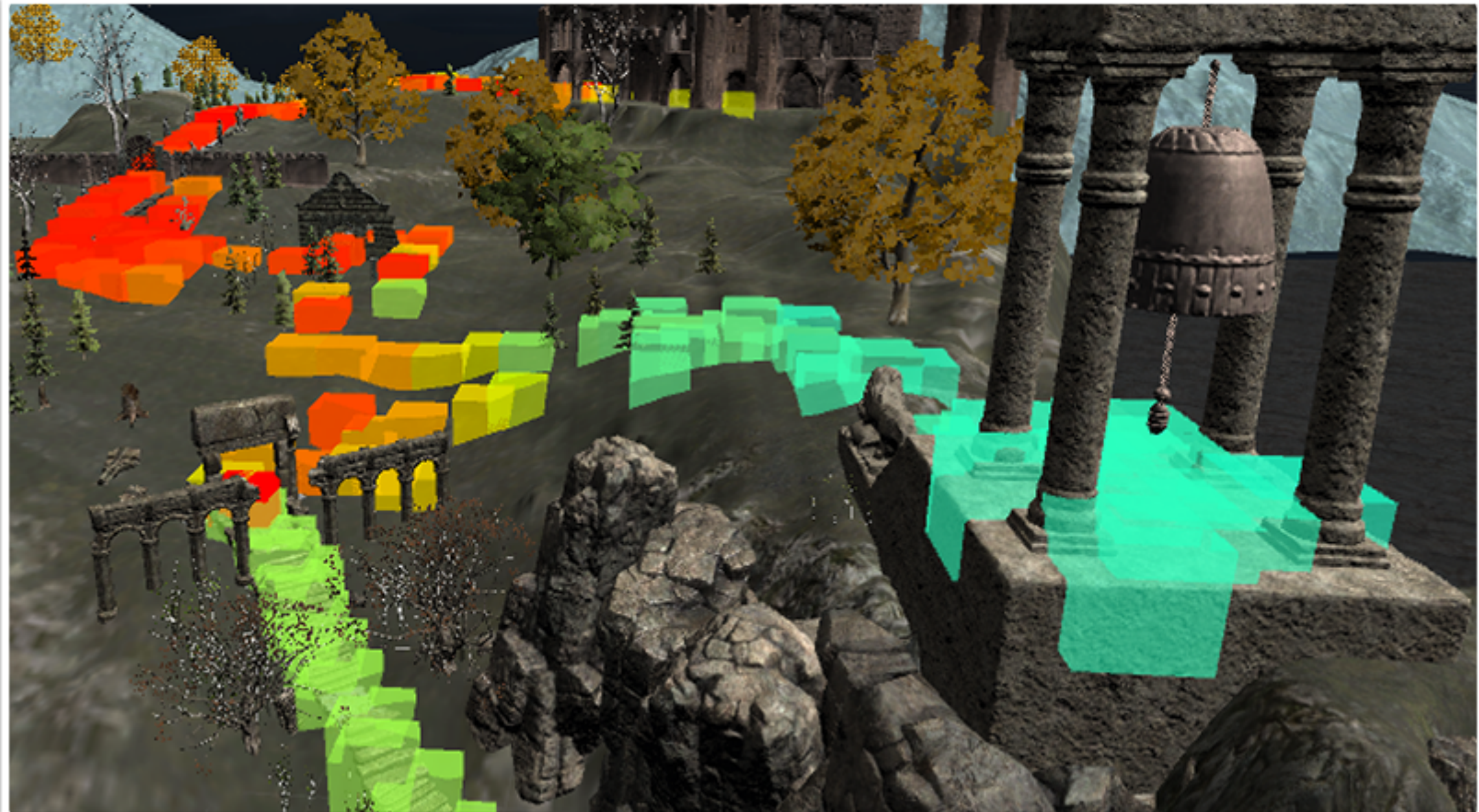


# Heatmap



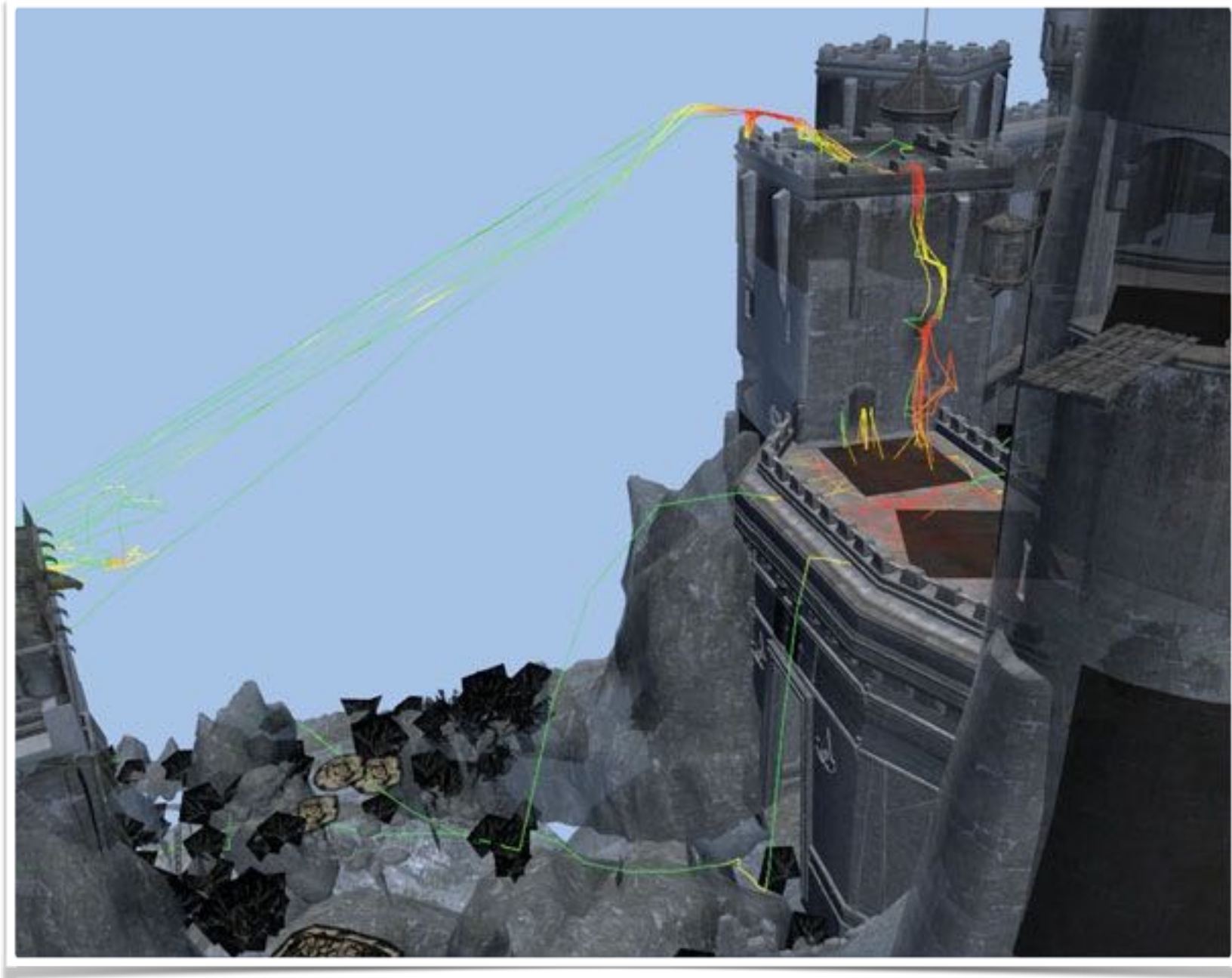


# 3D-Heatmaps



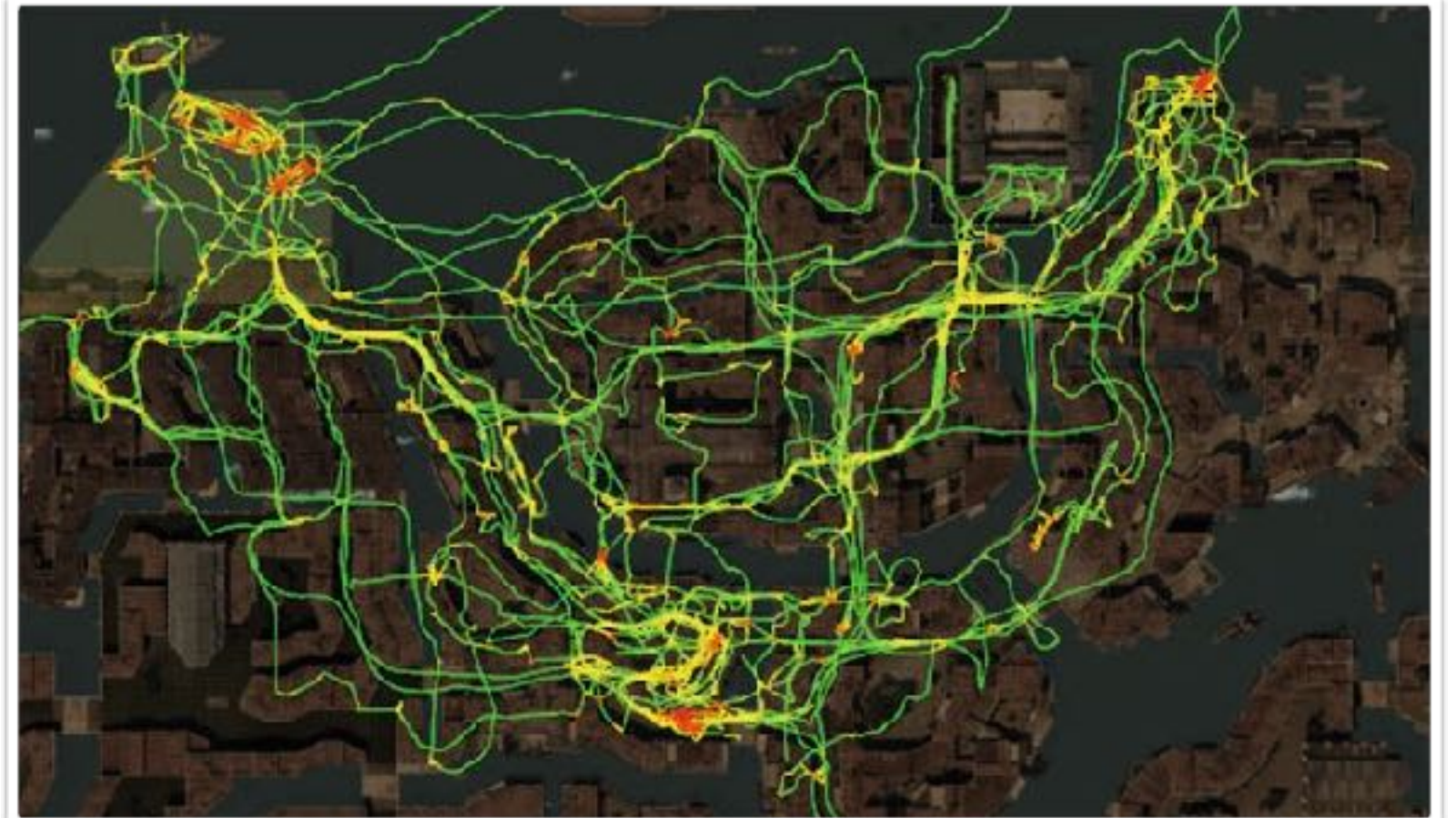


# Trajektorien





# Spielerpfade





# Eye Tracking



Tobii Eye Tracker 4C