Cosmina–Mihaela Toma presents

DECEPTIVENESS? IN MY VIDEOGAME?

It's more likely than you think

Press START to play

Deceptiveness? In MY videogame? It's more likely than you think

How to detect deceiving patterns, prevent their implementation and safeguard players

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> Abstract

While they have been mostly researched in the HCI (human-computer interaction) design field, they have also been found in other areas, like videogames.

But both fields still struggle to find standards they can agree on, such as which patterns count as deceptive. This fact, coupled with an industry that is more focused on investors' happiness and lacks strong regulatory approaches in the matter, leads players to an inferior quality in their gaming experience.

Since the implementation of deceptive patterns in videogames involves different figures, it is difficult to understand where to unravel the knot to address the problem.

For this reason, the following thesis will try to name the most responsible parties in this matter and, by analyzing their needs, to offer a solution that can help them to act against this kind of pattern.

The study will start with a scenario analysis, seeing the opposite positions between researchers and practitioners, how and why deceptive patterns are used by AAA videogame companies, and what regulatory approaches are currently available. The focus will then shift towards loot boxes, of the most famous deceptive patterns, by comparing the results of three different regulation approaches towards them.

After comprehending why the methods did or did not succeed, the study will continue with a manually carried-out scan on multiple online videogame stores' platforms to

detect and unify the opinion and knowledge of the players in the matter.

With these observations and the scenario previously analysed, the most accountable actors behind the deceptive pattern's implementation will be identified.
The thesis will then go ahead with the analysis of all the parties' needs and the development of a website that can provide all the necessary information to allow them to act and intervene.

Scenario analysis

> What is a deceptive pattern…
> …in videogames
> The videogame industry
> Regulatory approaches

> What is a deceptive pattern...

In software engineering, a design pattern is a "general, reusable solution to a commonly occurring problem" . (Contributors to Wikimedia projects, 2024)

But, even if implemented with the best intentions, there is no guarantee that a design pattern will make a project achieve the intended goal: in this case, the effect of the project on users could be undesired, if not even negative, and in that case we speak about anti-pattern.

But what if the negative effect is intended? In the field of Human-Computer Interaction Design, this phenomenon has a specific name, deceptive pattern.

Originally coined as 'dark pattern' by designer Harry Brignull in 2010 (Deceptive Patterns - About Us, n.d.), and its definition is:

tricks used in websites and apps that make you do things that you didn't mean to, like buying or signing up for something. (Deceptive Patterns (Aka DarkPatterns) – Spreading Awareness Since 2010, n.d.)

Unlike anti-patterns, the implementation of deceptive patterns and the negative effects they cause are being actively researched. From influencing the purchase of unwanted products (by deceptively placing them in a client's cart) to deliberately making the process of avoiding sharing more data with third-party sellers frustrating, these kinds of patterns leverage people's psychological mechanisms to nudge them in a precise direction advantageous for designers, such as generating profit.

The final effect is that users, once they find out, feel treated more as 'customers' rather than 'people'. (Gray et al., 2021)

How is it possible to understand if a pattern has been implemented by a designer without malevolent intentions? Brignull himself, in 2010, opens the website deceptive. design (once called darkpatterns.org). With the aim to address the phenomenon by educating the public and creating a new, more 'transparent' digital landscape, in the website are available:

> lists of patterns found over the years and explanation of each;
> laws issued in the European Union and the USA against certain patterns;
> collections of exemplary case studies;
> documents on sanctions against companies that have implemented deceptive patterns in their products;
> papers dealing with deceptive patterns.

Fig. 1: a schematic representation of deceptive patterns in the HCI field. (Gray et al., 2019)

NAGGING

Redirection of expected functionality that persists beyond one or more interactions.

INCLUDES:
Brignull "Roach Motel," "Price Comparison Prevention," and Intermediate Currency

OBSTRUCTION

Making a process more difficult than it needs to be, with the intent of dissuading certain action(s).

INCLUDES:
Brignull "Forced Continuity," "Hidden Costs," "Sneak into Basket," and "Bait and Switch"

SNEAKING

Attempting to hide, disguise, or delay the divulging of information that is relevant to the user.

INCLUDES:
Brignull "Forced Continuity," "Hidden Costs," "Sneak into Basket," and "Bait and Switch"

INTERFACE INTERFERENCE

Manipulation of the user interface that privileges certain actions over others.

INCLUDES:
Hidden Information, Preselection, Aesthetic Manipulation, Toying with Emotion, False Hierarchy, Brignull "Disguised Ad," and "Trick Questions"

FORCED ACTION

Requiring the user to perform a certain action to access (or continue to access) certain functionality.

INCLUDES:
Social Pyramid, Brignull "Privacy Zuckering," and Gamification

The coin of the term and the publication of the website, by giving a name to a phenomenon that would otherwise have remained in the dark, have started a new line of research within HCI design, carried out mainly by UX designers/practitioners and researchers: but it has also demonstrated how deceptive patterns, even if they now have a name to define them, still elude this community of experts.

Despite the general recognition of the importance of Brignull's work on the topic, there is still no general consensus on how many types of deceptive patterns exist, or their definitions, or how to catalogue them, or even just how to assess the presence or absence of deceptive patterns in the first place: Gray

> ...in videogames

The designer's participation in the act and the intentionality of the implementations are the main methods to distinguish a deceptive pattern

et al. (2018) identify how there is a large gap between the practitioner's 'down-to-earth' needs and the means (theories and methodologies) researchers have given to their 'colleagues'.

Therefore, the designer's participation and the intentionality of the implementations stand for the main methods to distinguish a deceptive pattern from an anti-pattern. But the lack of a 'common ground' and 'standard' methods accepted among researchers and practitioners prevents us from being able to set more 'scientific' parameters if not the subjectivity of the end users to the various implementations.

Furthermore, research has revealed that, even if the users notice the presence of deceptive patterns, it does not mean that they have the ability to 'resist' them.

Bongard-Blanchy et al. (2021) did a study with 406 participants, with 59% of them that were able to identify five or more dark patterns in 9 different interfaces: but the study notes that 'awareness is not a significant predictor for participants' likelihood to be influenced by manipulative designs'.

HCI Design has not been the only field struck by deceptive patterns: Zagal et al. (2013) published "Dark Patterns in the Design of Games", where they identified a protodefinition able to identify precisely what a deceptive pattern consists of in a videogame.

Even in videogames, the intention to create a negative experience is the key factor to figure out whether a pattern is deceptive or not, and the direction that game creators impose on players with their implementation is monetary gain (ex. Use of monetization tactics). The paper also presents a first list of deceptive patterns concerning videogames. And this list, despite the authors themselves recognizing that the definition of the patterns is not 'clear' (or that their 'deceptiveness' is dependent on the context in which they are implemented), has had an effect not dissimilar from Brignull's, opening a chapter for their more precise identification in this field.

A dark game design pattern is a pattern used intentionally by a game creator to cause negative experiences for players that are against their best interests and happen without their consent. (Zagal et al., 2013)
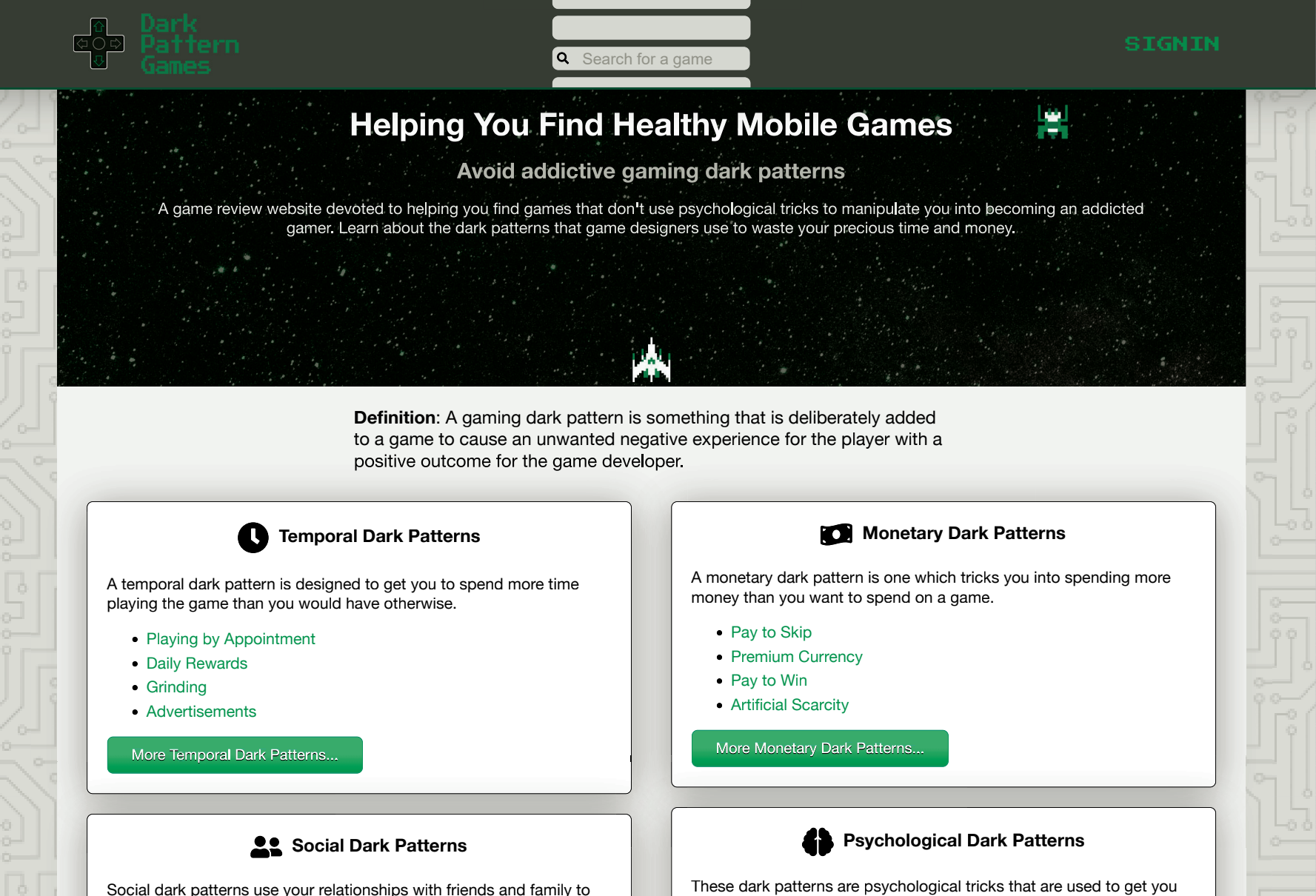
Fig. 2: screen of 'offsky' user's website, darkpattern.games

But similarly to how it happened to the researchers and practitioners in the HCI design area, even in the videogame world there's a struggle between methods and practice [..]

One notable attempt was made by Reddit user 'offsky': inspired by Brignull and Zagal they published darkpattern.games, a website that players and game developers can use to educate themselves about dark patterns. (offsky, 2018)

While the similarity with Brignull's website is very straightforward, the novelty of this project is that 'offsky', after creating their own catalogue of deceptive patterns (based in the research of other practitioners, such as Zagal) had implemented a form in which registered players can judge and vote mobile videogames, answering to questions with 'yes' or 'no', by how much certain patterns appear in them.

In this thesis, darkpattern.games' catalogue of patterns is used as a main source for deceptive patterns in videogames.

But similarly to how it happened to the researchers and practitioners in the HCI design area, even in the videogame world there's a struggle between methods and practice: for example, the work of Zagal et al. (2013), while still being recognized as one of the most-influential papers regarding deceptive

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pattern in videogames, has been criticized for the lack of a framework to define the deceptive patterns and its 'self-contradiction' for using subjectivity to define deceptive patterns as inherently negative (Against "Dark Game Design Patterns" - White Rose Research Online, n.d.).

Since the research on the matter is still ongoing, the scenario analysis proceeded to observe, through the lenses of a game creator working in a company, how they approach the implementation of a deceptive pattern in a videogame.
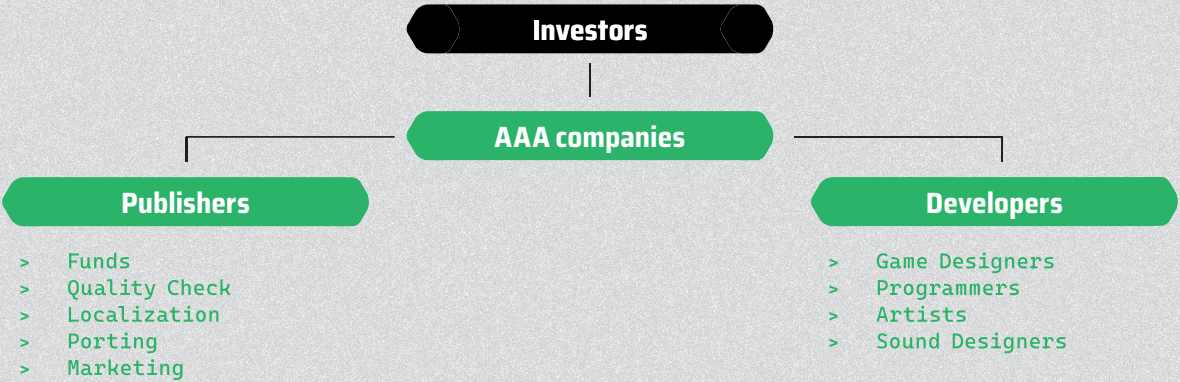
> The videogame industry

In the videogame industry, the name 'AAA' (or 'triple AAA') refers to companies with extremely high budgets: for some of their videogames scheduled to be released in 2024/2025, according to Authority (2023), they can reach 200 million dollars.

For Rowland (2023), 'AAA' companies are grouped into two main categories: game developers, who develop the game, and publishers, who finance it (even looking for financiers) and manage its production. Their collaboration is based on a contract that defines the roles of both, but this split is not always so clear: some companies, like Electronic Arts (2024), both develop and publish their games, while also being able to publish games for other companies.

Fig. 3: schematization of a potential division of labor between the publisher and developer side of an AAA company.

Investors

AAA companies

Publishers
> Funds
> Quality Check
> Localization
> Porting
> Marketing

Developers
> Game Designers
> Programmers
> Artists
> Sound Designers

In this landscape, game designers belong to the 'game developers' type of companies, where their tasks range from developing game-levels to managing the mechanics and systems of the videogames they produce.

One could therefore argue that game designers are the only figure responsible for implementing deceptive patterns in videogames, but there are statements from people who work within videogame companies suggest the opposite.

5 THINGS YOU NEED TO KNOW

1. WE HAVE **MORE ACTIVE PLAYERS** AT THIS POINT IN FIFA THAN EVER (5.3M+ FIFA DAU / 3M+ FUT DAU*).
2. THE TEAM IS SQUARELY **FOCUSED ON ENGAGING** CURRENT PLAYERS THROUGH MID SEPTEMBER.
3. PLAYERS WILL BE ACTIVELY MESSAGED + **INCENTIVIZED TO CONVERT** THROUGHOUT THE SUMMER.
4. **FUT IS THE CORNERSTONE** AND WE ARE DOING EVERYTHING WE CAN TO DRIVE PLAYERS THERE.
5. **THE RETURN OF FOOTBALL** IS ONLY GOING TO HELP US AND PLANS ARE READY TO FLEX.

TURNING UP THE HEAT

THE CATALYST - THE RETURN OF REAL WORLD FOOTBALL
Returning league play will boost our ability to tie into the real world and excite players with FUT content to reflect what's happening on the pitch.

ALL ROADS LEAD TO FUT
Content teasers + targeted Aruba messaging will drive excitement & funnel players towards FUT from other modes. [IMPROVED]

A WELCOMING EXPERIENCE
Updated FUT Welcome Pack content to kick-start experience so new players can hit the ground running. [IMPROVED]

INCREMENTAL ASSETS & PARTNER SUPPORT
Compelling campaign assets for in-game and out-of-game marketing to amplify SUMMER HEAT & expand our reach. [NEW]

COMMERCIAL & 1P SUPPORT
Exploring cross-platform deep discount aligned with SUMMER HEAT content + assets to drive consistent player journey from POS through FUT conversion. [NEW]

Fig. 4: screens of EA's infamous internal presentation for FIFA21.

According to an article of Johnson and Ivany (2021), an Electronic Arts' anonymous insider leaked an internal presentation for FIFA21, in which the company stated that they wanted to drive players to spend more money in the game, especially by 'converting them' towards one of the game's monetization tactics, FIFA Ultimate Team (FUT). While we can't say if this insider worked for the game development section or publisher section of Electronic Arts, they said that the reason for this leak was their involvement in videogames

[…] but they [editor's note: the workers] can't "really do anything about it because at the end of the day, the company is trying to make money and satisfy investors."

that include loot boxes and they're not happy about it: but they can't "really do anything about it because at the end of the day, the company is trying to make money and satisfy investors." (Johnson & Ivany, 2021)

Since the interest of funds and the contact with investors is

more a role concerning game publishers, we could say that at least the publishing section of Electronic Arts puts pressure on workers to achieve certain financial goals: having seen that one of the categories of deceptive patterns in videogames concerns some possible monetization of the gaming experience, game designers find themselves in the position of having to use them in order to reach them.

It is not just a problem for game designers: UX and product designers, too, admit to feel forced by their

companies to use deceptive patterns in their products, even when they are aware of the negative effects generated by their use. (Eskelinen, 2021)

So it can be said that game designers, even if they were aware of the negative effect of deceptive patterns, find themselves forced to use them to satisfy corporate requests: but if some of them do not agree with this practices they tend to opt for solutions such working for less money-driven companies, leaking their intention to the general population or waiting for regulation. (Liu et al., 2024)

> Regulatory approaches

The regulation of an industry that works on a global scale can be a challenge, especially since every Nation presents different laws. (Wallace, 2019)

In the meantime, the videogame industry has developed methods of self-regulation: an example of this is the PEGI (*Pan European Game Information*) system, which deals with the evaluation of videogames released in Europe to inform parents about the content that can be found in their children's videogames. (PEGI Age Ratings, n.d.)

To do this, PEGI uses two types of labels, *Age Ratings* and *Content Descriptor*s, which go hand in hand: the presence of a *Content Descriptor* influences the minimum *Age Rating*. For this

Fig. 5: schematization of how the presence of a Content Descriptor influences the Age Rating. (What Do the Labels Mean?, n.d.)

PEGI

Content Descriptor	Age Rating
> In-Game Purchases	/No age rating/
	> 3+ years old
> Violence	7+ years old
> Fear/Horror	
> Bad language	12+ years old
> Sex	
> Drugs	16+ years old
> Gambling	18+ years old
> Discrimination	
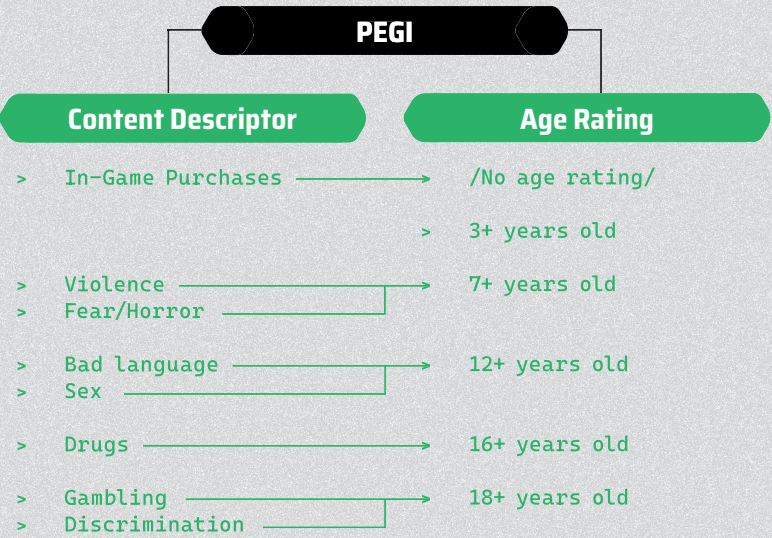
reason, the Age Rating does not concern the difficulty of the videogame, but its suitability for a certain age group.

The ratings were developed by Video Games Europe, which is composed of videogames' representatives (VIDEO GAMES EUROPE, 2023), while their control is managed by a specific non-profit organization, with a board consisting of a heterogeneous group of involved parties in the matter, including academic researchers. (The PEGI Code of Conduct, n.d.)

Europe is not the only one with an age rating system: other organizations, like ESRB (*Entertainment Software Rating Board*), has established for the age rating of videogames published in other areas, like North America. But there is not a self-regulating system for the management of deceptive patterns in videogames: this can be linked to the previously addressed difficulty in 'pinning down' their definitions.

Some Nations have shown more interest in the matter, but only towards specific patterns and in case their pre-existing laws already could 'cover' these implementations. (BBC News, 2018)

By analyzing only one deceptive pattern and the attempts made to regulate it, the following chapter aims to shed more clarity in the matter.
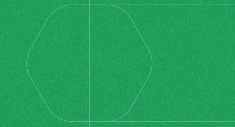
Research

> Loot box: is it gambling?

Loot boxes are digital items that provide players with the opportunity to get other in-game items based on prede-termined probabilities, which are often hidden.

The rewards obtainable from loot boxes can vary widely, ranging from easily accessible in-game materials to customi-zations, equipment, and char-acters, some of which may be time-limited. And while the loot boxes can be gifted by the videogame themselves, their possession or use is commonly locked behind the payment of real-world money.

Temporal

Monetary

> Pay to Skip
> Premium Currency
> Pay to Win
> Artificial Scarcity
> Accidental Purchases
> Recurring Fee
> Gambling / Loot Boxes
> Power Creep
> Pay Wall
> Waste Aversion
> Anchoring Tricks

Social

Psychological

Fig. 6: loot box placement within darkpattern.games cat-egorizations. (*DarkPattern.games » Gambling / Loot Boxes, n.d.*)

According to Zendle et al. (2020), in 2019 56% of most remunerative videogames between Android and iPhone had loot boxes, while Electronic Arts earned $1.49 billion US in 2020 from loot boxes in its sports-related videogames alone. (Johnson & Ivany, 2021)

And due to the fact that these prizes can be obtained only by chance, loot boxes have long been linked by the general audience, researchers, practitioners and lawmakers with gambling, if they're not directly considered the same thing: even sources like dark-pattern.games put loot boxes and gambling together.

If their similarities are such to warrant scrutiny from so many parties, how is it possible that loot boxes have not yet been subjected in all the world to the same laws of gambling activities?

The reason is that, according to Electronic Arts after the 'leak' of FIFA21's internal presentation in 2021, "regulators in multiple countries around the world have stated publicly that where there is no cashout method, loot boxes do not constitute gambling". (Arts, 2021)

> > Random Reward Mechanisms

The same argument is brought by Nielsen and Grabarczyk (2018) in their paper 'Are Loot Boxes Gambling? Random reward mechanisms in video games'. They use the term Random Reward Mechanisms (RRMs) as an umbrella term for all activities that present these three main components:

Eligibility condition > Random procedure > Reward

'Eligibility condition' is the action that must be done in order to trigger the procedure.

Fig. 7: a schematic list of how embedded or isolated resources and rewards interact. (Nielsen and Grabarczyk, 2018)

By cataloguing the eligibility condition and the reward as 'embedded' in the real world (buyable/sellable for real money) or 'isolated' (unbuyable with/unsellable for real money) the paper defines four kinds of RRMs. While all of them have gambling-like features, only one of them can be truly considered gambling: the procedure in which both the eligibility condition (resources) and the rewards are embedded in the real world [fig. 7].
Let us see how this graph can explain how a gacha game (a videogame that uses lootbox like mechanics) avoids falling into the definition of gambling.

> > > Case study: Genshin Impact

Genshin Impact is a F2P ('free-to-play') open world gacha game, published by COGNOSPHERE, in which players can explore the videogame's world.
The gacha aspect of the videogame revolves around the collection of both characters and weapons , generally available only for a limited time on 'banners', where the player can try to 'pull' to win them. The pity and artifact systems will be ignored to not overcomplicate the explanation. In a similar vein, all the other materials that can be bought with Masterless Items other than Fates are ignored.

The main currency necessary to participate in the gacha aspect are Primogems: Primogems can be acquired by playing the game (exploring, doing events...) or by 'refilling' them with another currency, Genesis Crystals, that can only be obtained by paying real money on in-game bundles.

Once enough Primogems are gained, they can be converted for Intertwined or Acquaint Fate, which are the actual resources used to 'pull' on the banners: both types of

Fig. 8: schematization of Genshin Impact's main instances of currency. The 'starting points' from which they are gained (real-life money and gameplay) are dotted.
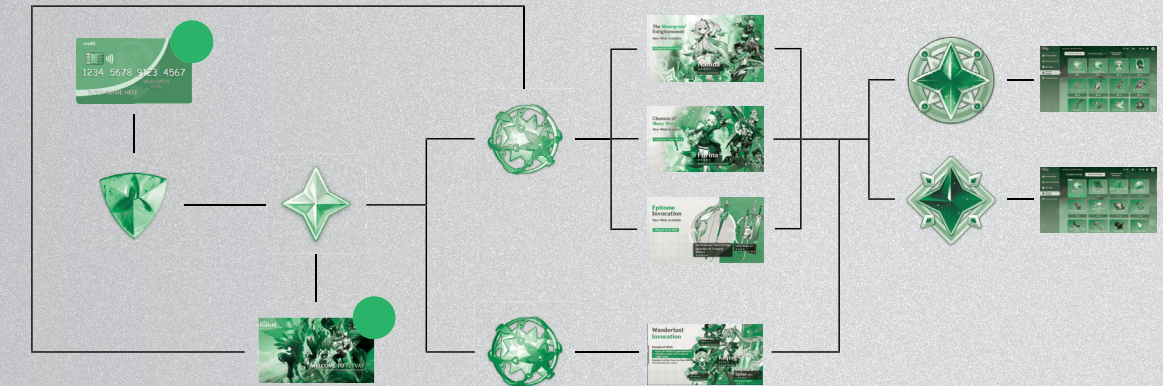
Fates can only be obtained by converting Primogems or with events/daily logins.

Once a 'pull' is done, the Fates are consumed: if the player receives a duplicate of a character/weapon they already have, the game offers them Masterless Items (Masterless Stardust for 3-star duplicates and Masterless Starglitter for 4 and 5-star duplicates). There is no other way to gain them, and their most noteworthy feature is that they can be converted into Fates (both Intertwined or Acquaint).

It should be noted that any kind of 'refill' or 'conversion' is final and all these currencies cannot be exchanged with other players.
If all these currencies are analyzed with the RRMs graph, it can bee seen that:

> Genesis Crystals use embedded resources (real money) for an isolated reward (Primogems);
> Primogems use isolated resources (Genesis Crystals and the player's activity) for isolated rewards (both kinds of Fates);
> Both Fates use isolated resources (Primogems) for isolated rewards (weapons/characters);
> Masterless Items use isolated resources (duplicates of weapons/characters) for isolated rewards (Fates).

By lacking embedded rewards, it's impossible to define this system as gambling. Despite this, some players have found a way to 'beat around the bush'.
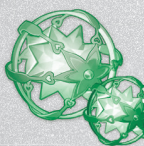
Fig. 9: the analysis of all Genshin Impact's main instances of currency with the RRM scheme. From top to bottom: Genesis Crystals, Primogems, Fates and Masterless Items.

	Isolated	Embedded
Emb. Isol.	RRMs	RRMs
	Pseudo-gambling	Gambling

	Isolated	Embedded
Emb. Isol.	RRMs	RRMs
	Pseudo-gambling	Gambling

	Isolated	Embedded
Emb. Isol.	RRMs	RRMs
	Pseudo-gambling	Gambling

	Isolated	Embedded
Emb. Isol.	RRMs	RRMs
	Pseudo-gambling	Gambling

Some players started to sell 'rerolled' accounts, which refers to an act in gacha games in where players repeatedly create and delete accounts to gain 'pulls', taking advantage of bonuses given to beginner players.

This practice embeds the rewards in the real world and could be a big problem for COGNOSPHERE, if there weren't a clause in the Terms of Service that gives the company rights to take action in such cases, including terminate an account without any refund. (Genshin Impact
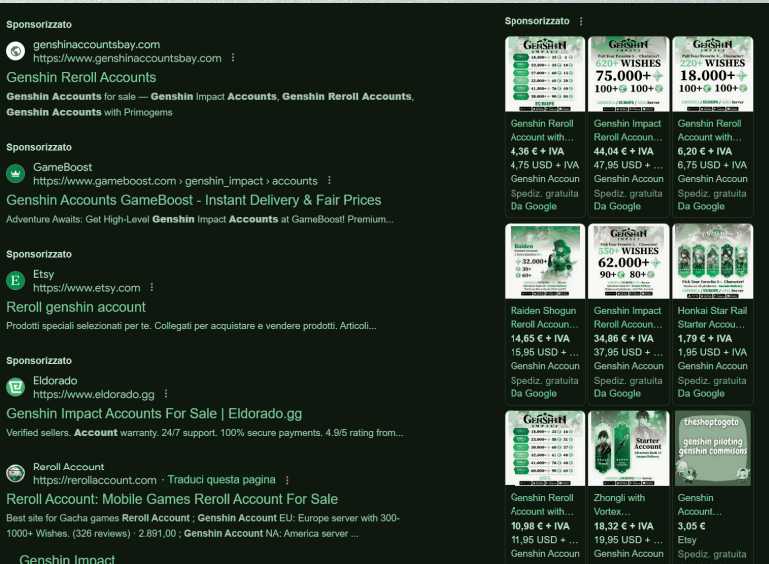

Fig. 10: screen obtained by inputting 'genshin reroll account' in the Google search bar.

– Step Into a Vast Magical World for Adventure, n.d.) In this way, COGNOSPHERE successfully avoids the laws of all Organizations who consider the 'cashout' fundamental to determine if an activity is gambling or not.

> > Other ways to regulate

If loot boxes cannot be regulated by unifying them with gambling practices, it does not mean that have not been other attempt to do so.

The paragraph will focus on three cases of loot box registration, each one different for the methods, the actors and the results that they managed to achieve.

> > > Industry self-regulation: In-Game Purchases

In 2017, when PEGI was asked if loot boxes should be considered gambling, they declared that they cannot define what constitutes gambling, since that is the responsibility of national commissions. (Palumbo & Palumbo, 2017)

But in 2020 PEGI released a new Content Label, called 'In-game Purchases', which can present an added notice if the game presents any kind of randomized rewards.

The problem is that 'In-game Purchases' is a very generic description. By using the 'Monetary' pattern group of darkpattern.games as a reference, it can be seen that there's a big range of patterns that can be covered by the content label, giving to gamers no other information about what kind of deceptive

Monetary

> Pay to Skip
> Premium Currency
> Pay to Win
> Artificial Scarcity
> Accidental Purchases
> Recurring Fee
> Gambling / Loot Boxes
> Power Creep
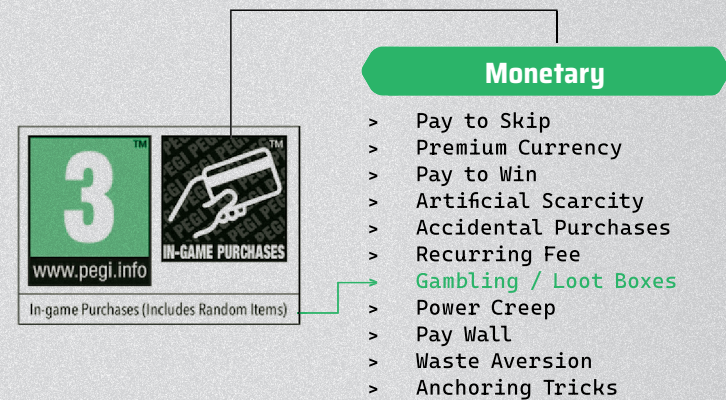> Pay Wall
> Waste Aversion
> Anchoring Tricks

Fig. 11: a representation on the 'coverage' of deceptive patterns offered by the new label and its additional notice.

patterns they can run into. While the added notice goes more into detail to show the presence of loot boxes, there is no explanation on how the players will be able to interact with them once they are playing or how it will affect their experience. (Xiao, 2023)

In addition, since PEGI has applied this new content label retroactively to all analog videogames, players would expect the same for their digital version. Instead, less than 30% of all videogames in the Google Play Store have been labeled by IARC (Xiao, 2023), the responsible self-regulation organization.

For these reasons, PEGI's mission to bring awareness is not correctly reached and this attempt to self-regulate loot boxes cannot be considered a satisfactory solution.

> > > Legislative intervention: Kompu gacha

In Japan, kompu gacha (combo gacha) refers to a specific kind of gacha system in which the players are incentivized to play to gain a specific set of cards out of all the cards available: this set is the necessary requirement to win the grand prize.

In March 2012, following some rumors about the government going to act against this kind of gacha, a group of six companies who used kompu mechanics in their products formed a council with the mission to self-regulate monetization in their
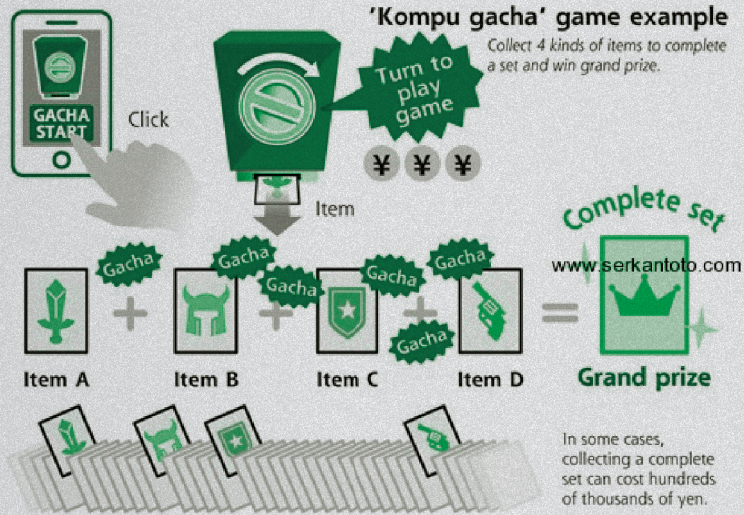

Fig. 12: representation on how kompu gacha works. (Toto, 2012a)

products, (Toto, 2012b) but without finding a solution.

In May 2012, Japan's National Consumer Affairs Agency officially declared the mechanic of kompu gacha illegal, to be removed before the 1st of July of the same year: in the next days, the six companies of the previous council (with others) announced that, in the following month, all kompu gacha systems would have been eliminated from their products, complying with the law.

The main issue with this solution is that it has been applied in only a specific kind of gacha: by the admission of dr. Serkan Koto, "it would be a total catastrophe for earnings in just about every social gaming company in Japan if regulation hit gacha, too". (Toto, 2012c)

And yet, the kompu gacha case shows us that self-regulation's main objective is not the wellbeing of the players, but to avoid regulation by other entities and protect the videogame companies's interests. Only the legislative intervention has managed to effectively change the landscape of kombu gacha, both effectively (though only for one kind of gacha) and in a short amount of time.

> > > Player activism: boycott

According to Gero Micciché, Electronic Arts' development director, practitioners that implement predatory mechanics (like loot boxes) exist, but they are punished by the players, since they are quick to catch on to such attempts. (Morelli, 2022) According to Sihui et al. it would seem the case, with their thesis showing that players with at least two years of gaming experience are "more adept at identifying manipulative patterns like 'grinding' and 'pay-to-skip'". (Liu et al., 2024)

MapleStory, a free-to-play MMORPG published by NEXON, has been the theater of one of the influential boycotts for a videogame in South Korea. In MapleStory, the weapon and equipment enhancement system (which used a gacha/loot box system with hidden probabilities) is called 'Chu-op', with the rest of the economy of the game revolving around it.

In 2021, a patch note announced that the Chu-Op probabilities were going to be changed with the intent to "fix the in-game system"

(Park et al., 2023): the idea that this was going to drastically change the economy led the players to react through acts of activism, like sending trucks in front of the company's headquarters and boycotts, called '0 KRW challenge', with the gamers who spent the most money on the game (called whales) openly admitted that they were not going to spend any more currency in the game.

The situation brought NEXON, a month later, to fully disclose the probabilities of the Chu-op system, revealing

that some of the most sought enhancement combinations were virtually impossible to gain, leading to a new wave of player's rage, now towards both the company and the entire videogame industry. In the end, the parliament had to intervene by passing a law requiring all videogames to disclose loot box probabilities before March 2024.

Seeing this boycott case, it would seem that Miccicché's words about loot boxes and deceptive patterns are correct. But actually, MapleStory's players were

The players' discontent did not stem from the mechanics themselves, but from the breach of trust caused by the sudden change and the discovery of the false information surrounding them

not quick to notice them (the game was released in 2003), despite many of them having played it since they were children (Park et al., 2023): the Chu-Op system has long been part of MapleStory and analyzed by the community, who had created various methods to calculate its probabilities which were shown to be wrong when NEXON published the actual ones. If the patch note had

not been released, the players would still be unaware of how the videogame was deceiving them. The players' discontent did not stem from the mechanics themselves, but from the breach of trust caused by the sudden change and the discovery of the false information surrounding them.

Another key factor in this case has been the presence

Fig. 13: A graph showing the difference in PC videogame's revenue and their sources. In this graph, 'Heavy Payers' refers to 'whales' (John, 2022).

PC F2P Spend Segmentation
[NA][PC][2015]
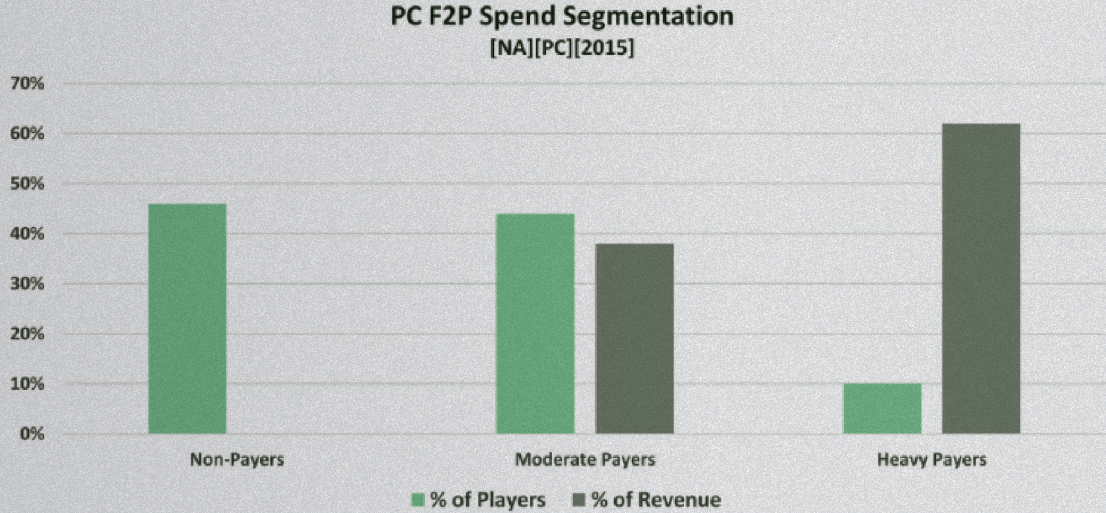
of two specific kinds of players in the protests: streamers and whales, which can overlap. Other than helping to shake game's economy as part of their protest, it could be said that the whales' role by undertaking the '0 KRW challenge' may have also

severely affected NEXON's income, and it could be the reason why the company had decided to disclose the actual Chu-Op probabilities. Only a small number of whales is necessary for a videogame to make up most of its revenue. (John, 2022)

If all non-paying and moderate players were going to try the same challenge, their impact on both the company and the game's economy would have been much less important, especially if the 'whales' continued to spend their money as usual.

Then, it can be said that MapleStory's case is an example of how player activism can lead to legislative change, it also shows that not all players have the same 'power' to punish videogames.

So 'F2P' players must change their attempts. As Reddit user 'GuyNumber5876' (2022) suggests:

'voting with your wallet' does not work. A whale can spend more than what 10 normal people would [...] Vote with your time. Vote with your attention. Ignore these games completely.

> Online stores' reviews

Another important way non-paying players can voice their opinions is through reviews: by leaving negative reviews on the videogame's page, potential players might be discouraged from downloading it. This can reduce the income from that videogame for both publishers and developers.

To follow this argument, a careful selection of reviews has been analyzed across popular online stores, such as Steam (for PC games) and Google Play Store (for Android videogames). The analysis is an attempt to observe:

> if players can effectively recognize deceptive patterns in videogames AND do punish videogames that use 'predatory' mechanics (as by admission of Gero Micciché);
> which deceptive patterns are more present in videogames.

> > Selection criteria

It was decided to carry the selection in the following way:

> Search for as many videogame genres as possible;
> Search for a certain number of videogames for each genre;
> Search for a certain number of reviews for each videogame;
> Categorize each review for the deceptive patterns described in it using darkpattern.games' list. (DarkPattern.games » Dark Gaming Patterns, n.d.).

To ensure the most neutral and broad outlook as possible that also took into account the potential economic return due to the implementation of deceptive patterns in video games. Therefore, the search for videogames was carried out favoring those with the highest revenue but belonging to the most disparate videogame genres.

While videogames were chosen with very strict criteria, reviews received a different treatment. Given the impossibility of carrying out a standardized control on their contents, once the reviews were sorted and filtered to the maximum offered by the platform, a manual step took place.

All the available reviews were read and chosen one by one: the choice was dependent on whether the review mentioned deceptive patterns or not. In the case there were not enough reviews that mentioned them, reviews that mentioned other problems within the videogame were chosen anyway. This is due to the idea that the lack of communication on the patterns present is itself communication: the reviewing player simply reveals that he has not detected any.

Therefore, the selection of the reviews was carried out in the following way:

> Search for as many videogame genres for each platform;
> Search for the 5 highest grossing videogames for each videogame genre;
> Manually search for 5 negative reviews for each videogame;
> Categorize each review

for the deceptive patterns described in it using DarkPattern. games' list of deceptive patterns. (DarkPattern. games » Dark Gaming Patterns, n.d.).

It is known that, in this sweep made with these criteria, despite the initial objective of the thesis to analyze only the situation of deceptive patterns in triple A companies, there are also video games made by smaller companies.

Fig. 14: list of the deceptive patterns available on DarkPattern.games and used to catalogue the patterns found in the reviews.

Temporal

> Playing by Appointment
> Daily Rewards
> Grinding
> Advertisements
> Infinite Treadmill
> Can't Pause or Save
> Wait To Play

Monetary

> Pay to Skip
> Premium Currency
> Pay to Win
> Artificial Scarcity
> Accidental Purchases
> Recurring Fee
> Gambling / Loot Boxes
> Power Creep
> Pay Wall
> Waste Aversion
> Anchoring Tricks

Social

> Social Pyramid Scheme
> Social Obligation / Guilds
> Friend Spam / Impersonation
> Reciprocity
> Encourages Anti-Social Behavior
> Fear of Missing Out
> Competition

Psychological

> Invested / Endowed Value
> Badges / Endowed Progress
> Complete the Collection
> Illusion of Control
> Variable Rewards
> Aesthetic Manipulations
> Optimism and Frequency Biases

> > > Macro-genres

Before beginning to research the reviews, an intermediate step had to be carried out.

Steam and Google Play Store do not use the same videogame genres: Google Play Store presents 17 genres (called 'Categories'), while Steam uses 'tags' in a way not dissimilar to the ones present on social platforms and they can both represent genres or specific elements present within the videogame itself.
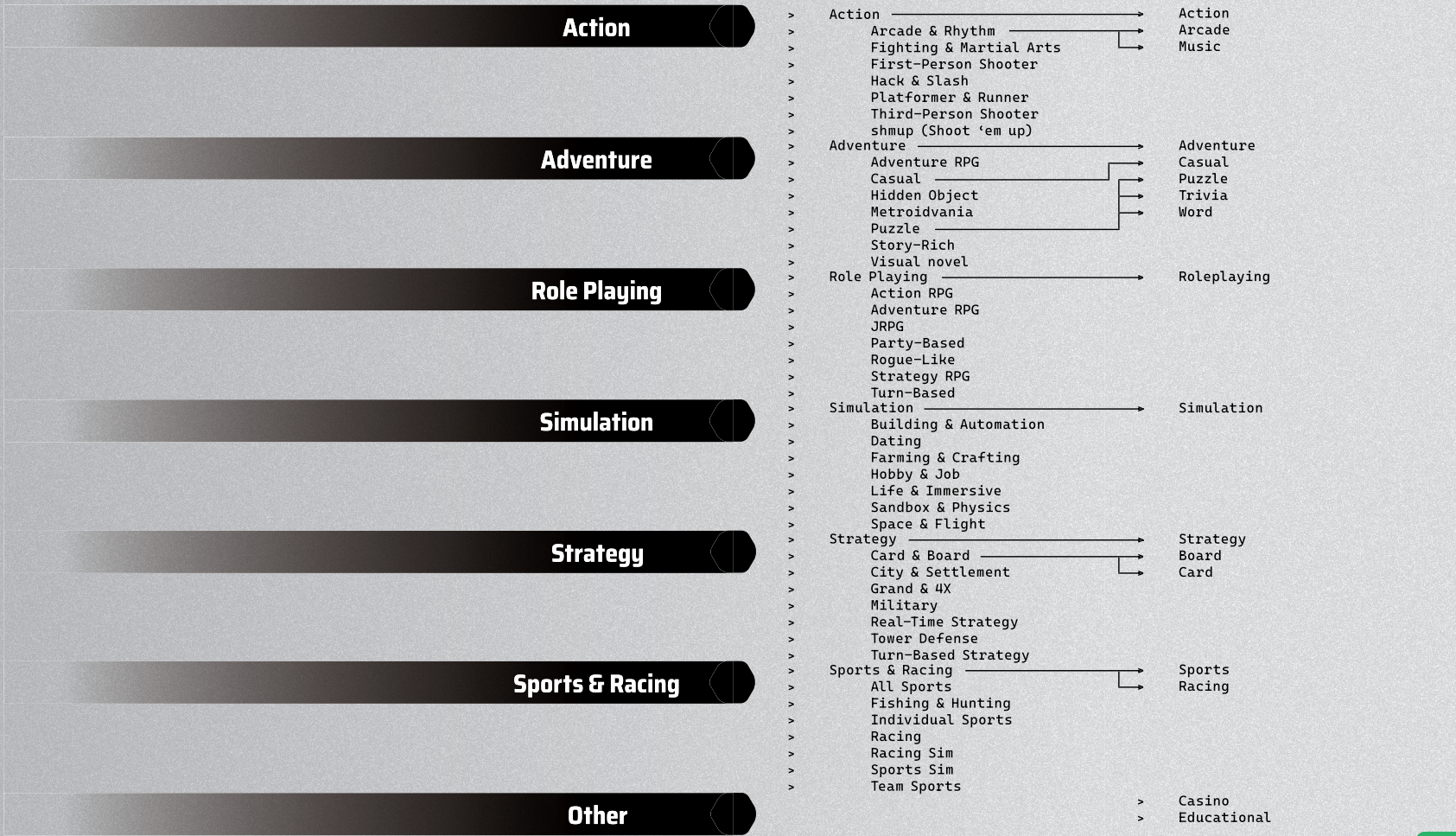
Therefore, it was necessary to carry out a 'normalization' of the videogame genres into larger groups, hereafter called macro-genres, to subsequently allow a comparative analysis between the two platforms. It is important to clarify that the macro-genres were not used to carry out the search for videogames to be analyzed, which continued to use the videogame genres used by the individual stores.

By observing the 'Categories' drop-down menu available on Steam's homepage, it can be seen that the 'Genres' area is divided into 6 different columns of 9 genres each. But these genres are not all of the same 'size': the first genre on each column is 'bigger' than the following, and those can be considered its sub-genres.

For this reason, the macro-genres of this research were based from these 6 'large' genres and, using the sub-genres as a hook, the genres of Google Play Store were grouped with them on the basis of similar names or concepts. An additional macro-genre, called 'Other', was added to categorize some Google Play Store's genres that did not have their counterparts in Steam's tags.

Fig. 15, on the right: scheme of the found macrogenres, made by combining all the genres used by Steam and Google Play Store

Steam	Google Play Store

Action
>   Action
>   Arcade & Rhythm
>   Fighting & Martial Arts
>   First-Person Shooter
>   Hack & Slash
>   Platformer & Runner
>   Third-Person Shooter
>   shmup (Shoot 'em up)

Adventure
>   Adventure
>   Adventure RPG
>   Casual
>   Hidden Object
>   Metroidvania
>   Puzzle
>   Story-Rich
>   Visual novel

Role Playing
>   Role Playing
>   Action RPG
>   Adventure RPG
>   JRPG
>   Party-Based
>   Rogue-Like
>   Strategy RPG
>   Turn-Based

Simulation
>   Simulation
>   Building & Automation
>   Dating
>   Farming & Crafting
>   Hobby & Job
>   Life & Immersive
>   Sandbox & Physics
>   Space & Flight

Strategy
>   Strategy
>   Card & Board
>   City & Settlement
>   Grand & 4X
>   Military
>   Real-Time Strategy
>   Tower Defense
>   Turn-Based Strategy

Sports & Racing
>   Sports & Racing
>   All Sports
>   Fishing & Hunting
>   Individual Sports
>   Racing
>   Racing Sim
>   Sports Sim
>   Team Sports

Google Play Store:
Action
Arcade
Music

Adventure
Casual
Puzzle
Trivia
Word

Roleplaying

Simulation

Strategy
Board
Card

Sports
Racing

>   Casino
>   Educational

> > > Google Play Store

After finding the macro-gen-res, the focus of the research shifted back to each platform's own genres.

For Google Play Store the search begun by filtering the videogames by their genres first, then by sorting them by the profit registered from the platform by selecting the option 'Top grossing'.

For each search made, the 5 top-ranking games were selected. By applying these criteria to all the categories, the videogames in the following spread were chosen:
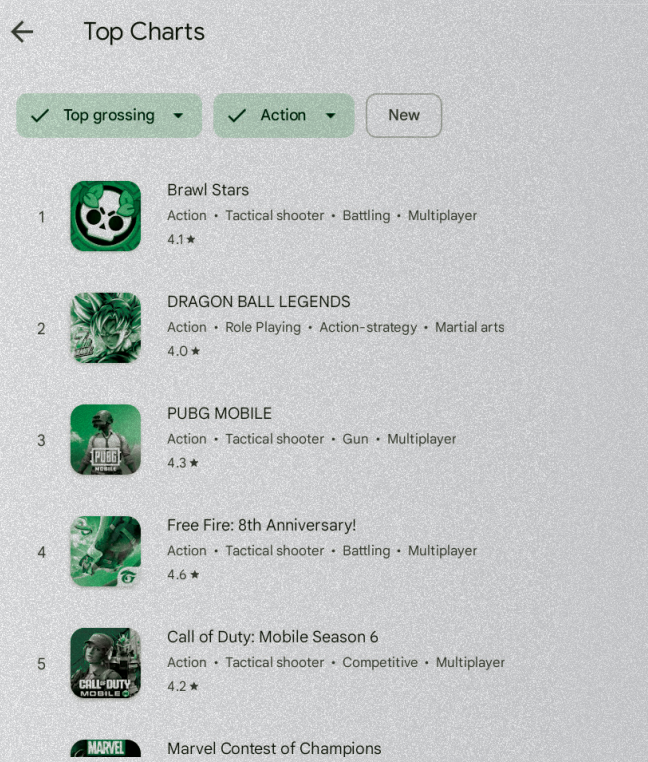

Fig. 16: Google Play Store's 'Top Charts' list, used to find its top grossing videogames.

Then, 5 negative reviews were chosen for each videogame.

Google Play Store's reviews use a star-based rating, with 1 star being the worst review and 5 stars being the best. To increase the probabilities of finding deceptive patterns, 1 star reviews were chosen: if the game didn't have enough one-star reviews, 2 stars reviews were added instead.

Additionally, Google Play Store's reviews are cat-egorized by the devices in which the videogame can be installed onto and, at least from the videogame's page, there is no way to 'mix' them. This is why, since the online store was chosen purposefully since it's commonly used by mobile devices, the focus was put on devices such as phones and tablets.
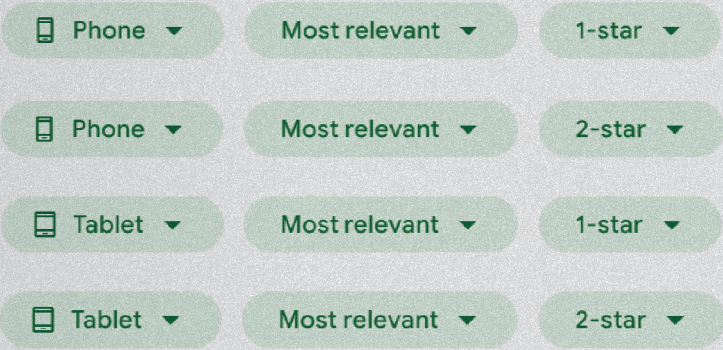
Fig. 17: combinations of star and devices to sort the reviews of Google Play Store's videogames.

Action

> Brawl Stars
> Call of Duty: Mobile Stag.9
> PUGB MOBILE
> DRAGON BALL LEGENDS
> Mobile Legends: Bang Bang

Adventure

> Roblox
> Honkai: Star Rail
> June's Journey: Hidden Objects
> Pokémon GO
> Top Heroes

Arcade

> Minecraft
> 1945 Air Force: Airplane Games
> Pocket Champs: 3D Racing Games
> Galaxy Attack: Alien Shooting
> Cooking Madness: A Chef's Game

Board

> MONOPOLY GO!
> Yalla Ludo – Ludo&Domino
> Chess – Play and Learn
> Bingo Frenzy™–Live Bingo Games
> Backgammon: Lord of the Board

Card

> Scopa – Italian Card Game
> Solitaire Grand Harvest
> Rummy – Fun & Friends
> Burraco – Online, multiplayer
> Scopa Online – Gioco di carte

Casino

> HighRoller Vegas: Casino Slots
> Slotlovin™ –Vegas Casino Slots
> Bingo City 75 – Bingo games
> Merkur24 Casino
> Bingo 90 Live – Bingo Games

Casual

> Candy Crush Saga
> Gardenscapes
> Homescapes
> Match Masters – PVP Match 3
> Township

Educational

> Toca Boca World
> Me contro Te World
> Aha World: Doll Dress-Up Game
> Bebi: Baby Games for 2-4y kids
> LEGO® DUPLO® PEPPA PIG

Music

> Beatstar – Touch Your Music
> My Singing Monsters
> HATSUNE MIKU: COLORFUL STAGE!
> SongPop Classic
> Incredibox

Puzzle

> Royal Match
> Fishdom
> Empires & Puzzles: Dragon Dawn
> Travel Town
> Toon Blast

Racing

> F1 Clash – Official 2024 Game
> Top Drives – Car Cards Racing
> CSR Racing 2
> Asphalt Legends Unite
> Drive Zone Online: Car Game

Role Playing

> Hero Wars: Alliance
> RAID: Shadow Legends
> King's Choice
> Saint Seiya: Legends of Justice
> AFK Journey

Simulation

> Fishing Clash: Sport Simulator
> Klondike Adventures: Farm Game
> Family Farm Adventure
> Love and Deepspace
> Chapters: Interactive Stories

Sports

> EA SPORTS FC™ Mobile
> Top Eleven: Be a Soccer Manager
> eFootball™
> EA SPORTS FC™ 25 Companion
> Football Rivals: Online Game

Strategy

> Last War: Survival Game
> Whiteout Survival
> Evony: The King's Return
> Total Battle: Strategy Games
> Lords Mobile: Kingdom Wars

Trivia

> GeoGuessr
> Quiz Patente Ministeriale 2024
> Everyday Puzzles: Mini Games
> Trivia Crack: Fun Quiz Games
> QuizDuello!

Word

> Zen Word® – Relax Puzzle Game
> Ruzzle
> Immortal Taoista – Idle Manga
> Words of Wonders: Crossword
> WordOn

Fig. 18, on the left: list of videogames available on Google Play Stone chosen with the described criteria.

> > > Steam

For Steam, the steps used to choose the videogames and their reviews were kept as similar as possible to the ones used for Google Play Store.

At the bottom of each genre's page, there is a database where videogames with that tag can be sorted and filtered. In this area the videogames were sorted by their 'Type', 'Videogames', to eliminate DLCs or soundtracks, and then sorted by selecting the label 'Top sellers'. But a new problem arised.

Since genres are treated as tags by Steam, it means that a videogame can have more than one genre tagged, leading to finding the same videogames in different genres.

To guarantee the presence of 5 unique titles for each genre, if a videogame had already been chosen in one of the earlier genres the next videogame in the ranking was chosen in its stead.

For each search made, the 5 top-ranking games were selected. By applying these criteria to the 17 'tags' picked, the following videogames were chosen:

Fig. 19, part 1: list of videogames available on Steam
chosen with the described criteria.

Action
> Call of Duty®: Black Ops 6
> Counter-Strike 2
> DRAGON BALL: Sparking! ZERO
> THRONE AND LIBERTY
> Red Dead Redemption

Arcade & Rhythm
> Brotato
> Mortal Kombat 1
> GUILTY GEAR -STRIVE-
> Street Fighter™ 6
> Vampire Survivors

Fighting & Martial Arts
> NARAKA: BLADEPOINT
> FINAL FANTASY XVI
> Rivals of Aether II
> Batman™: Arkham Knight
> Marvel's Spider-Man: Miles Morales

First-Person Shooter
> Grand Theft Auto V
> Garry's Mod
> Left 4 Dead 2
> Team Fortress 2
> Ready or Not

Hack & Slash
> Diablo® IV
> Windblown
> Lost Ark
> God of War Ragnarök
> Devil May Cry 5

Platformer & Runner
> It Takes Two
> Hollow Knight
> SONIC X SHADOW GENERATIONS
> Nine Sols
> Brawlhalla

Third-Person Shooter
> Red Dead Redemption 2
> The Last of Us™ Part I
> The First Descendant
> PUBG: BATTLEGROUNDS
> Dead Space

shmup (Shoot 'em up)
> Metal Slug: Awakening
> Cuphead
> The Spell Brigade
> Deep Rock Galactic: Survivor
> NIMRODS: GunCraft Survivor

Adventure
> Hogwarts Legacy
> Baldur's Gate 3
> Sons Of The Forest
> Warhammer 40,000: Space Marine 2
> Monster Hunter: World

Adventure RPG
> Black Myth: Wukong
> New World: Aeternum
> Metaphor: ReFantazio
> Dragon's Dogma 2
> The Elder Scrolls® Online

Casual
> The Sims™ 4
> Backrooms: Escape Together
> Tiny Glade
> Stardew Valley
> WEBFISHING

Hidden Object
> A Little to the Left
> Witch It
> CAPTURED
> Boxes: Lost Fragments
> The Room 4: Old Sins

Metroidvania
> Castlevania Dominus Collection
> Blasphemous 2
> STAR WARS Jedi: Fallen Order™
> Dead Cells
> ANIMAL WELL

Puzzle
> Liar's Bar
> Outer Wilds
> LOCKDOWN Protocol
> Stray
> Inscryption

Story-Rich
> Life is Strange: Double Exposure
> Resident Evil 4
> Horizon Zero Dawn™ Remastered
> Marvel's Spider-Man Remastered
> STAR WARS Jedi: Survivor™

Visual Novel
> Slay the Princess — The Prist...
> Limbus Company
> Library Of Ruina
> Ys X: Nordics
> The Walking Dead: The Telltal...

Role-Playing
> Once Human
> Destiny 2
> Warframe
> ELDEN RING
> Dragon Age™: The Veilguard

Action RPG
> Enotria: The Last Song
> Like a Dragon: Infinite Wealth
> Wayfinder
> Hades II
> Granblue Fantasy: Relink

Adventure RPG
> The Witcher 3: Wild Hunt
> DREDGE
> Black Desert
> Middle-earth™: Shadow of War™
> DAVE THE DIVER

JRPG
> Persona 4 Golden
> FINAL FANTASY VII
> FINAL FANTASY XIV Online
> FINAL FANTASY VIII
> Yakuza: Like a Dragon

Party-Based
> Romancing SaGa 2: Revenge of...
> Wartales
> OMORI
> Dale & Dawson Stationery Supplies
> Darkest Dungeon® II

Rogue-Like
> The Binding of Isaac: Rebirth
> Cult of the Lamb
> Risk of Rain 2
> Balatro
> Witchfire

Strategy RPG
> Dota 2
> Crusader Kings III
> Manor Lords
> PAYDAY 3
> Guild Wars 2

Turn-Based
> Slay the Spire
> Rogue Waters
> Yu-Gi-Oh! Duel Links
> Sword of Convallaria
> XCOM® 2

Fig. 19, part 2: list of videogames available on Steam
chosen with the described criteria.

Simulation
- EA SPORTS FC™ 25
- War Thunder
- Euro Truck Simulator 2
- TCG Card Shop Simulator
- NBA 2K25

Building & Automation
- Factorio
- Satisfactory
- ARK: Survival Ascended
- Rust
- RimWorld

Dating
- Fields of Mistria
- Palia
- My Time at Sandrock
- Sun Haven
- Five Hearts Under One Roof

Farming & Crafting
- The Forest
- Project Zomboid
- Farming Simulator 25
- Shop Titans
- Disney Dreamlight Valley

Hobby & Job
- Microsoft Flight Simulator 2024
- American Truck Simulator
- DiRT Rally 2.0
- eFootball™
- Storage Hunter Simulator

Life & Immersive
- Supermarket Simulator
- Placid Plastic Duck Simulator
- House Flipper
- PowerWash Simulator
- Car Mechanic Simulator 2021

Sandbox & Physics
- DayZ
- BeamNG.drive
- Hearts of Iron IV
- Planet Coaster 2
- DCS World Steam Edition

Space & Flight
- Transport Fever 2
- Microsoft Flight Simulator 40th...
- Elite Dangerous
- Liftoff®: FPV Drone Racing
- Distant Worlds 2

Strategy
- Total War: WARHAMMER III
- Sid Meier's Civilization® VI
- Magic: The Gathering Arena
- Age of History 3
- Diplomacy is Not an Option

Card & Board
- MARVEL SNAP
- Yu-Gi-Oh! Master Duel
- Stacklands
- Governor of Poker 3
- Magicraft

City & Settlement
- Age of Empires II: Definitive Ed...
- Frostpunk 2
- Cities: Skylines
- Anno 1800
- Jurassic World Evolution 2

Grand & 4X
- Age of Wonders 4
- Total War: WARHAMMER II
- Total War: WARHAMMER
- Europa Universalis IV
- Victoria 3

Military
- Tom Clancy's Rainbow Six® Siege
- Call to Arms – Gates of Hell: O...
- WARNO
- Company of Heroes 3
- World of Tanks Blitz

Real-Time Strategy
- Age of Mythology: Retold
- Age of Empires IV: Anniversary...
- Infection Free Zone
- March of Empires
- Total War: ROME II – Emperor...

Tower Defense
- Dungeon Tycoon Stronghold: Def...
- Kingdom Rush 5: Alliance TD
- Outpost: Infinity
- Siege
- Dome Keeper

Turn-Based Strategy
- Warhammer 40,000: Chaos Gate – D...
- Scramble: Battle of Britain
- Sid Meier's Civilization® V
- Phantom Brigade
- The Great War: Western Front™

Sports & Racing
- EA SPORTS™ WRC 24
- Football Manager 2024
- Need for Speed™ Unbound
- Assetto Corsa
- F1® Manager 2024

All Sports
- TIEBREAK: Official game of the...
- Fishing Planet
- Golf With Your Friends
- Captain Tsubasa: Rise of New...
- EA SPORTS™ PGA TOUR™

Fishing & Hunting
- Russian Fishing 4
- Call of the Wild: The Angler™
- The Fishing Club 3D: Multiplayer...
- Gym Camp Simulator

Individual Sports
- Riders Republic
- TrackDayR
- Undisputed
- Steep™
- RIDE 5

Racing
- iRacing
- SnowRunner
- Assetto Corsa Competizione
- Le Mans Ultimate
- MotoGP™24

Racing Sim
- MX Bikes
- Automobilista 2
- rFactor 2
- Forza Horizon 5
- F1® 24

Sports Sim
- theHunter: Call of the Wild™
- WWE 2K24
- The Isle
- Slackers – Carts of Glory
- TopSpin 2K25

Team Sports
- Olympic Games Tokyo 2020 – The...
- Soccer Manager 2025
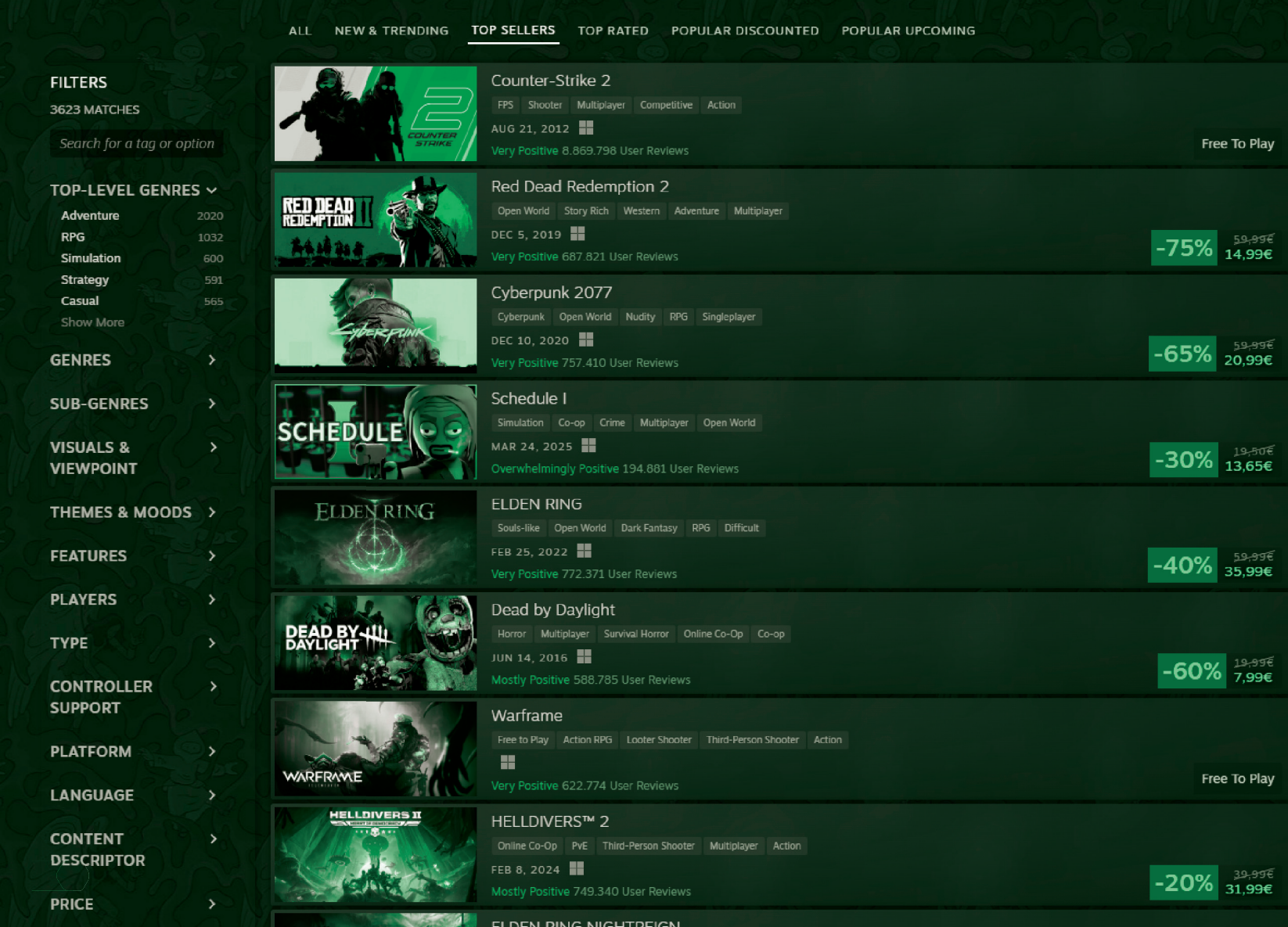- NBA 2K24
- WE ARE FOOTBALL
- Football Referee Simulator

ALL   NEW & TRENDING   TOP SELLERS   TOP RATED   POPULAR DISCOUNTED   POPULAR UPCOMING

FILTERS

3623 MATCHES

Search for a tag or option

TOP-LEVEL GENRES ⌄

Adventure   2020
RPG   1032
Simulation   600
Strategy   591
Casual   565
Show More

GENRES   >
SUB-GENRES   >
VISUALS & VIEWPOINT   >
THEMES & MOODS   >
FEATURES   >
PLAYERS   >
TYPE   >
CONTROLLER SUPPORT   >
PLATFORM   >
LANGUAGE   >
CONTENT DESCRIPTOR   >
PRICE   >

Counter-Strike 2
FPS   Shooter   Multiplayer   Competitive   Action
AUG 21, 2012
Very Positive 8.869.798 User Reviews
Free To Play

Red Dead Redemption 2
Open World   Story Rich   Western   Adventure   Multiplayer
DEC 5, 2019
Very Positive 687.821 User Reviews
-75%   59,99€   14,99€

Cyberpunk 2077
Cyberpunk   Open World   Nudity   RPG   Singleplayer
DEC 10, 2020
Very Positive 757.410 User Reviews
-65%   59,99€   20,99€

Schedule I
Simulation   Co-op   Crime   Multiplayer   Open World
MAR 24, 2025
Overwhelmingly Positive 194.881 User Reviews
-30%   19,50€   13,65€

ELDEN RING
Souls-like   Open World   Dark Fantasy   RPG   Difficult
FEB 25, 2022
Very Positive 772.371 User Reviews
-40%   59,99€   35,99€

Dead by Daylight
Horror   Multiplayer   Survival Horror   Online Co-Op   Co-op
JUN 14, 2016
Mostly Positive 588.785 User Reviews
-60%   19,99€   7,99€

Warframe
Free to Play   Action RPG   Looter Shooter   Third-Person Shooter   Action
Very Positive 622.774 User Reviews
Free To Play

HELLDIVERS™ 2
Online Co-op   PvE   Third-Person Shooter   Multiplayer   Action
FEB 8, 2024
Mostly Positive 749.340 User Reviews
-20%   39,99€   31,99€

ELDEN RING NIGHTREIGN

Fig. 20, on the left: Steam's 'Top Sellers' list available at the end of the genre's page, used to find its top grossing videogames.

Fig. 21, on the right: combinations of requirements to sort the reviews of Steam's videogames.

Then, 5 negative reviews were chosen for each videogame. Steam's reviews use a negative/positive rating, with no 'middle ground' available.
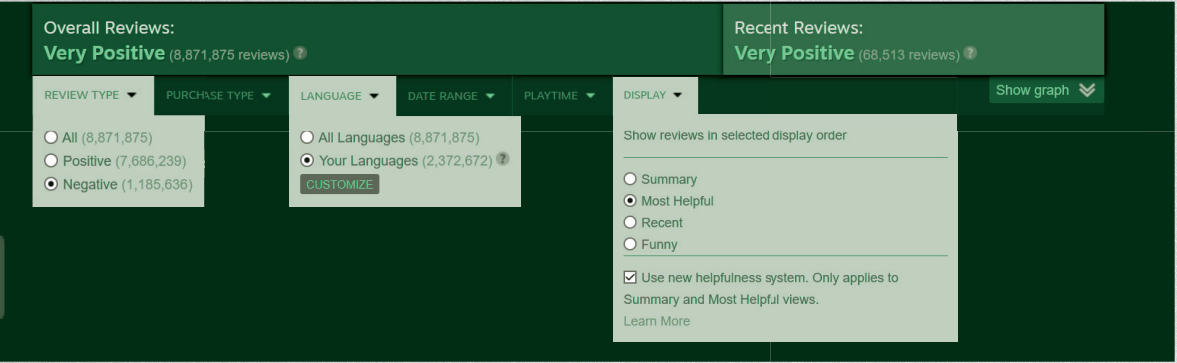
The pre-imposted review filter was modified to only display negative reviews and sort them by both the languages known by the author (English and Italian) and their helpfulness.

The latter is managed by the website itself with a system that calculates how many players 'reacted' or said that a review has been helpful for them.

If the game didn't have enough negative reviews, no other reviews were added.

Overall Reviews:
Very Positive (8,871,875 reviews) ⓘ

Recent Reviews:
Very Positive (68,513 reviews) ⓘ

Show graph ⌄

REVIEW TYPE ▾   PURCHASE TYPE ▾   LANGUAGE ▾   DATE RANGE ▾   PLAYTIME ▾   DISPLAY ▾

○ All (8,871,875)
○ Positive (7,686,239)
● Negative (1,185,636)

○ All Languages (8,871,875)
● Your Languages (2,372,672) ⓘ
CUSTOMIZE

Show reviews in selected display order
○ Summary
● Most Helpful
○ Recent
○ Funny
☑ Use new helpfulness system. Only applies to Summary and Most Helpful views.
Learn More.

> > Results

Since in the previous paragraphs, for each store's genre, 5 videogames were selected and, for each videogame, 5 reviews were selected, the expectation was to end up with 325 videogames and 1625 reviews.

Instead, only 324 videogames were selected, due to the lack of a fifth videogame in one of Steam's sub-genres (Fishing & Hunting) and only 1606 reviews were selected since, for some videogames, the amount of reviews available was less than five.

The overall loss is of 1 videogame and 19 reviews.

Of these 1606 reviews, some allowed the identification of one or more deceptive patterns, up to a maximum of 7. Others, instead, mentioned no patterns and were, therefore, categorized as 'NONE': at the end of the research, a total of 207 reviews belonged to this category.

In conclusion, the number of times a deceptive pattern was cited in a review is equal to 2486, with an average of approximately 1.7 patterns

per review. The average is the result of dividing the number of patterns detected by the number of reviews analyzed (2486/1606): the 'NONE' reviews were also calculated because the lack of mentions of patterns still communicates important information.

Fig. 22, on the right: screen of the Google Sheet file where the reviews where categorized. Accessible with the QR code at the end of the thesis.

Fig. 23: bar graph repre-
senting the 'coverage' of
each category on all the
reviews analyzed.

By dividing all the 2486 registered deceptive patterns into the 4 categories 'Temporary', 'Monetary', 'Social' and 'Psychological' of darkpattern.games, 41% of them were discovered to fall into the 'Monetary' category, linked to pushing users into making unwanted monetary expenses.

If the patterns are observed 'by themselves' (graph in the next spread), it can be seen that the most detected deceptive pattern was 'Grinding', which belongs in the 'Temporary' category.

Among the first 8 deceptive patterns, it can be noted that three of them are part of the 'Monetary' category, confirming what was previously said in the first bar graph.
There was also a large numerical gap between the amount of times the first 8 deceptive patterns were detected (ranging from 114 to 352 times) and the last 8, which were recorded less than 10 times each: some of them were even not recorded at all.

Even by observing the macro-genres, it can be noticed how the 'Monetary' category is always the one registered the most.

Fig. 24: bar graph representation of the amount of reviews where each deceptive appeared in the analysis.

Grinding: 354
Pay Wall: 330
Illusion of Control: 294
Pay to Win: 248
Competition: 214
Gambling / Loot Boxes: 169
Enc. Anti-Social Behaviour: 123
Advertisements: 114
Compl. the Collection: 102
Premium Currency: 89
Playing by Appointment: 82
Badges / End. Progress: 56
Fear of Missing Out: 55
Recurring Fee: 45
Power Creep: 43
Wait To Play: 33
Can't Pause or Save: 31

Infinite Treadmill: 17
Social Obligation / Guilds: 17
Daily Rewards: 15
Pay to Skip: 11
Anchoring Tricks: 11
Invested / Endowed Value: 8
Accidental Purchases: 7
Artificial Scarcity: 6
Waste Aversion: 6
Variable Rewards: 4
Aesthetic Manipulations: 3
Social Pyramid Scheme: 1
Friend Spam / Imperson.: 0
Reciprocity: 0
Optimism and Freq. Biases: 0

Fig. 25: bar graphs rep-
resenting the 'coverage'
of each category on each
macro-genre.

Action

100%

50%

38,0%

25,3%

21,6%

15,0%

0%

Mon.   Temp.   Psych.   Soc.

Simulation

100%

50%

39,5%

32,4%

17,3%

10,8%

0%

Mon.   Temp.   Psych.   Soc.

Strategy

100%

50%

40,0%

20,4%   19,4%   20,1%

0%

Mon.   Temp.   Psych.   Soc.

Adventure

100%

50%

31,8%

21,6%

13,5%

23,2%

0%

Mon.   Temp.   Psych.   Soc.

Role Playing

100%

50%

36,8%   36,2%

12,3%   14,8%

0%

Mon.   Temp.   Psych.   Soc.

Sport & Racing

100%

50%

42,1%

13,5%

21,3%   23,1%

0%

Mon.   Temp.   Psych.   Soc.

Other

100%

70,1%

50%

10,4%

18,2%

1,3%

0%

Mon.   Temp.   Psych.   Soc.

Google Play Store

100%

50%
45,7%

0%   23,9%
          16,6%   13,7%

Mon.   Temp.   Psych.   Soc.

Top 3 Google Play Store

> **158**   *Pay to Win*

> **131**   *Illusion of Control*

> **106**   *Advertisements*

Steam

100%

50%
35,3%   26,9%

0%   19,9%   17,9%

Mon.   Temp.   Psych.   Soc.
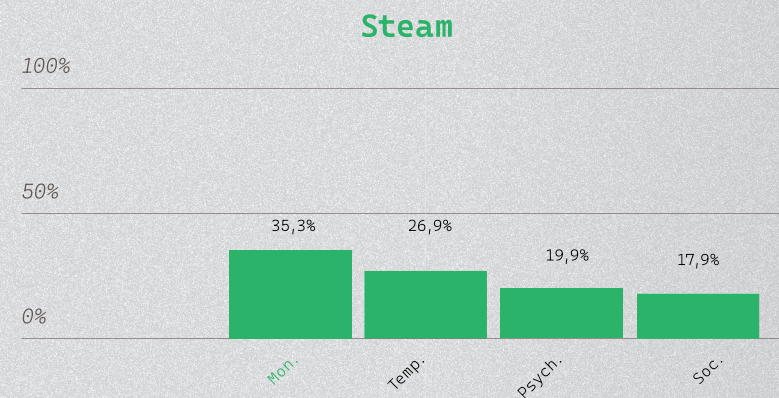
Top 3 Steam

> **328**   *Grinding*

> **288**   *Pay Wall*

> **163**   *Illusion of Control*

Fig. 26, on the left: bar graph representing the 'coverage' of each category on each online store. Near each store is the list of its Top 3 registered deceptive patterns.

As for the two stores, the results reflect the supremacy of the 'Monetary' pattern category on both stores, although the specific top-ranked patterns are different from each other.

For Google Play Store, the most registered patterns are:

> Pay to win;
> Illusion of control, that hides info to convince you are better or worse than reality;
> Advertisements.

For Steam, the most registered patterns are:

> Grinding;
> Pay wall, that forces you to pay money in order to be able to proceed playing the game;
> Illusion of control.

> > > Disclaimers and observations

During the research phase, some choices had to be made following the appearance of some issues.

First of all, it must be highlighted how some definitions given by darkpattern.games were not 'satisfactory' to describe the patterns that the players were facing in the reviews.

For example, darkpattern. games does not consider 'Paywalls' deceptive if a user is made aware in advance of their presence:

With a DLC, you purchase additional content that extends the standard game that you already have. If the DLCs are known ahead of time, this is a clean practice. (DarkPattern. games » Pay Wall, n.d.)

But, during the research, some reviews showed that this definition was not always a realistic image of player expectations.

The Sims 4 is a simulation videogame that has a clearly accessible and extensive list of DLCs: by July 2024 there were 87 DLCs available and their total amounted to €1,194.23.

Since the videogame was released in 2014, assuming that a player has owned it since launch (thus almost 12 years), the amount of money spent to buy all the DLCs, divided by the months since its release, would be about 10 euros per month which, compared with other microtransaction in other genres of videogames, like battle passes, would seem an affordable price. (Ashcroft, 2024)

The mere presence of DLCs made the non-paying players feel 'deprived' of an experience. This damaged their gaming experience and created frustration, one of the fundamental feelings necessary to identify deceptive patterns

And yet, some players' reviews have shown frustration anyway on their implementation.

The previous calculation was based on the assumption that a player had bought the Sims 4 at launch: instead, if the player started playing in July 2024, they would be greeted with a huge. This fact, added to what the players themself describes as a 'sampler cheese' effect created ingame, made players describe The Sims 4 as a showcase for DLCs and not an actual videogame, which makes them feel they're almost forced to pay to get those contents.

The mere presence of DLCs made the non-paying players feel 'deprived' of an experience. This damaged their gaming experience and created frustration, one of the fundamental feelings necessary to identify deceptive patterns, not only for the impossibility of possessing specific items or playing specific mechanics without paying, but also for the price at which they are sold. Furthermore, even though the base game has been free for a few years, the limited content and possibilities offered to non-paying players are negligible compared to

Graggle Gaming
653 products in account
72 reviews

👎 **Not Recommended**
7.5 hrs on record (4.7 hrs at review time)   ★

POSTED: 7 NOVEMBER

This game is stupidly expensive.
"But isn't the game free?"
Yeah it's free in the same way that samplers of cheese at Sams are free. It's just enough to whet your appetite and get you primed and ready to buy whatever they're trying to sell you. Only instead of getting a full pack of the sampler cheese they're trying to sell you sampler size bits of the cheese at full cheese pack sizes. Sane people don't buy into this ♥♥♥ because who willingly pays money for samplers?
The same thing goes for this game.

The game is free but it isn't a game, not really. It's a peek through a window into a shopping center. It's perfect looking pintrest photos of things you want but can't afford. Then when you get whatever you're pining for you realize you've been had. In any other game you could've gotten just as much content for 1/7th the price. The problem is that there aren't many other games like this. It's not ridiculous to say that The Sims series has a monopoly on sandbox life sims, and that's why they get away with selling you bite sized DLC packs or flavor packs for the same price as feature length games sometimes! Besides the ethical problems this game is littered with bugs and weird menu problems. I've had my entire created household be deleted twice in a row for no reason other than I got booted back to the menu for some update. Why can't I save character's? Why does it have to be the whole household? Why can't I save a household until I buy land? Why does the save household feature just not work at all sometimes?

Don't get me wrong though this game is fun, really. It's just that getting to where you can have the maximum enjoyment you can out of it requires you to pour an obscene amount of money into EAs guts. If you really want to play it I'd recommend putting on your peg leg and eyepatch.

Was this review helpful?

👍 Yes   👎 No   😄 Funny   🏆 Award

Fig. 27: one of the reviews chosen for The Sims 4 that mentions frustration for the presence of DLCs.

the content accessible with the DLCs.

In light of these findings (and also based on other reviews in other videogames) it has been decided to record the 'Pay wall' pattern in every review in which players mention their presence, whether the DLCs were declared by the videogame itself before purchase or not.

Despite this, even with a deceptive pattern list that has shown some discrepancy between the patterns' definitions and the players' feelings,

almost 2500 deceptive patterns were identified. This can be a sign that, if the aim is to obtain an overall view on the matter, the use of 'imperfect' definitions does not represent an obstacle.

Second of all, the fact that, in 1606 reviews, some deceptive patterns were never detected raises some questions.

Since the list of deceptive patterns used for this analysis dates back to 2019, (DarkPattern.games » Dark Gaming Patterns, n.d.) is it possible that some deceptive

patterns have been abandoned by the videogame industry itself (and therefore had a much lower chance to appear in this scan, conducted in November 2024), or are players simply unaware of these deceptive patterns?

Also, by analyzing the most registered deceptive patterns in the research, it can be noticed that the first two patterns, 'Grinding' and 'Pay Wall', are terms that, in recent years, have been widely used and spread in the news regarding videogames.

Fig. 28: a graphical rep-
resentation of the dispar-
ity in between the top 3
patterns and the bottom 3
patterns.

Fig. 29: screen of a research on Google with the keyword
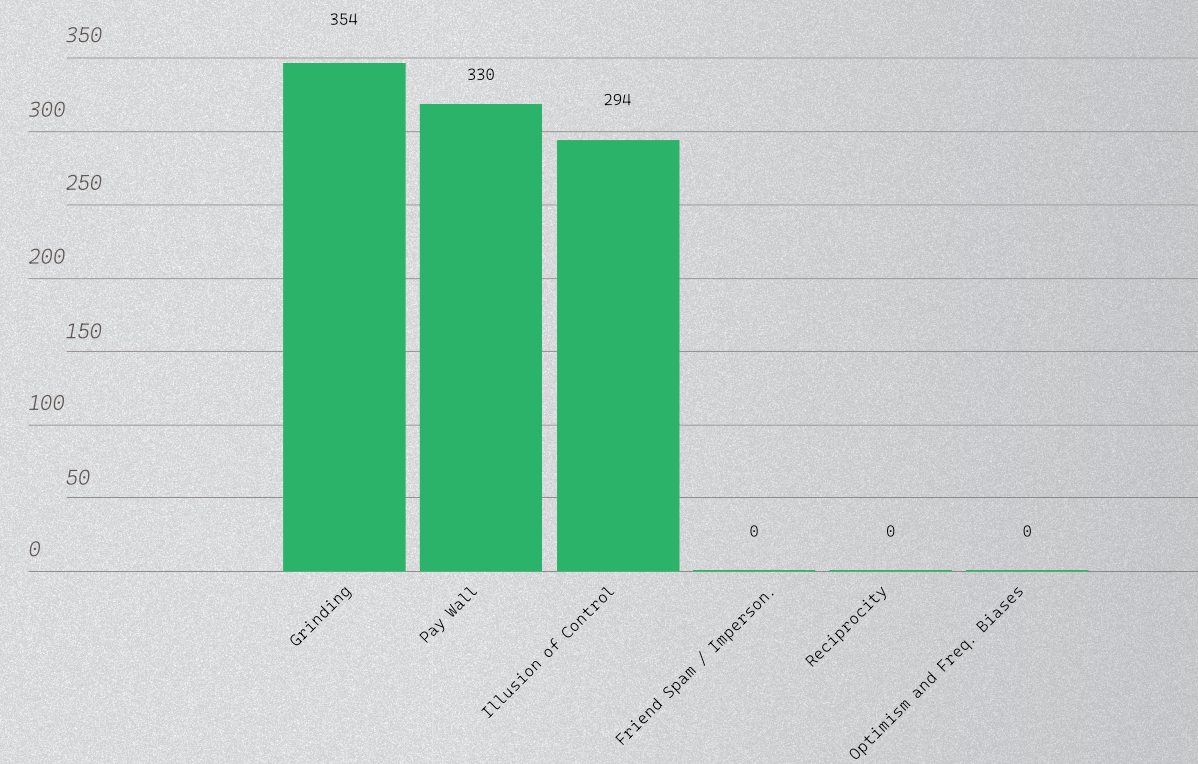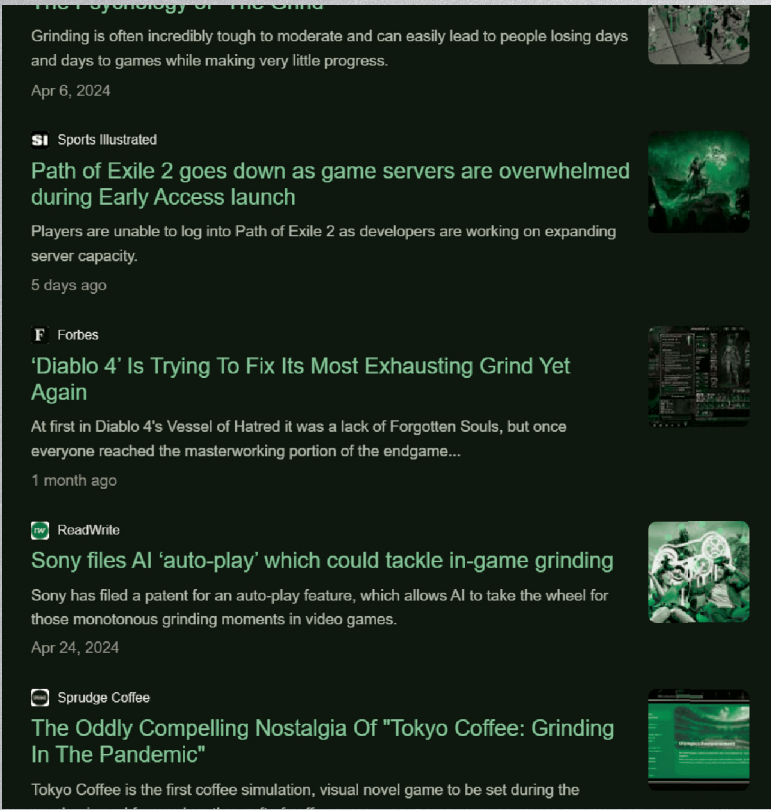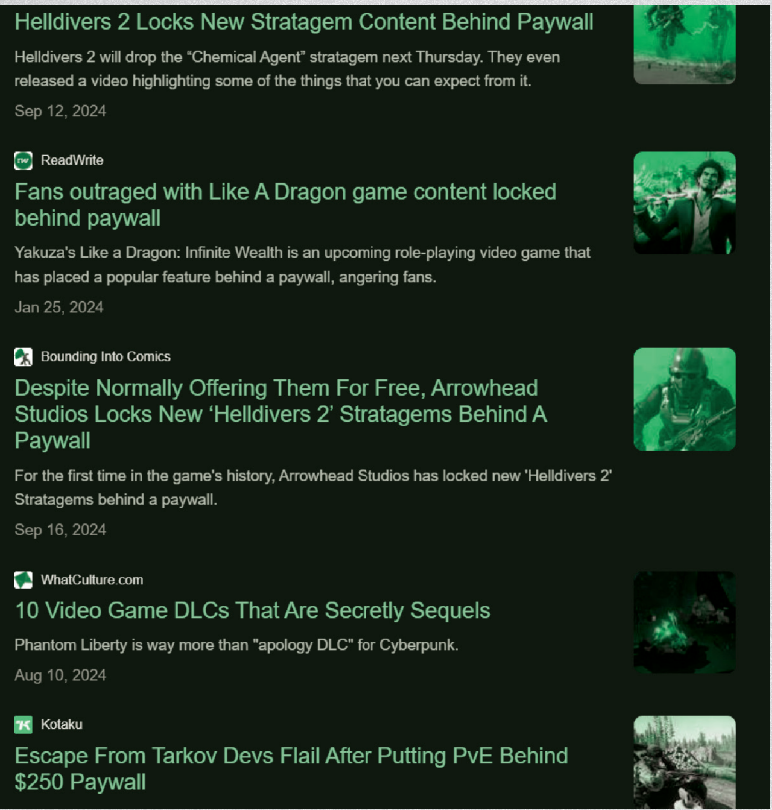'grinding'.

Fig. 30: screen of a research on Google with the keyword
'paywall'.

> Considerations

By taking in consideration how:

> the current research on deceptive patterns, in both the HCI design and the videogame's sector, is still ongoing and presents internal rifts that make it difficult to have a clear image on the issue;
> the videogame industry is currently composed by videogame publishing companies that 'press' on the developing companies to keep up with investors' expectations;
> it has been demonstrated

that, even with the use of non-ideal definitions of deceptive patterns and by analyzing only one of the different 'shapes' that player's voices can take (reviews), it is possible to have an overall vision about their presence in videogames;

it can said that the current responsibility for the implementation of deceptive patterns in videogames lies mostly within the videogame publishers: they are in an advantageous position, where they can both enforce

their implementation and access a much more bigger database on not only the player's feelings, but also on their in-game reactions towards them.

Another actor that has been found responsible, on the legal side, is composed by the government bodies. While they have been good examples of industry self-regulation, like PEGI's age rating systems, their In-Game Purchases descriptor and the failed meeting between the 6 companies in the 'kombu gacha' case showed that the

Could it be, then, that their high positions on this graph are also a result of the media's influences on the players? If these influences had not existed, would they still be at the top? Or, if the lowest-positioned deceptive patterns had received the same attention and treatment by the media, would they have ranked higher?
With this comparison it can be said that, while players have

successfully demonstrated that they can recognize deceptive patterns (although they don't refer to them with this name, or even the name of the specific pattern they are complaining about), there could be a not adequate level of information to make players recognize certain ones.

Since both responsible actors' sources of information have been found to take into the players' experience, the latter's participation in recognizing and finding solutions towards deceptive patterns can be a crucial element.

industry is acting on its own interest foremost and that its self-regulation is an attempt to avoid excessive scrutiny from other factors deemed 'external', such as government bodies. This makes those attempts dependent on their involvement, which can take form by listening to players, issuing laws and ensuring their correct application and interpretation.

Since both responsible actors' sources of information have been found to take into the players' experience, the latter's participation in recognizing and finding solutions towards deceptive patterns can be a crucial element.

Although their knowledge is still potentially lacking or influenced by the media, at the moment it is already a good starting point that can be used to identify deceptive patterns: but it is necessary to make sure that the players have all the necessary information on the topic.
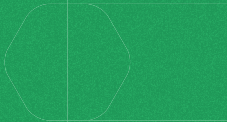
Project

> Development
> UX/UI
> Brandbook
> Website

> Development

> > Interviews

To begin the design phase, it was necessary to conduct interviews with people from the groups of people identified so far as 'actors' to gain a better view of the potential areas of interest for the project.

An attempt was made to interview as many 'actor' groups as possible but, despite this, only two of them were interviewed: players and game designers.

The division of the people interviewed was the following:

> 1 game designer;
> 2 players;
> 2 players with experience in game design.

The experience of the two players in game design is due to their participation in themed courses held by the Politecnico di Torino, the fact that they participate in the student organization Level Up Lab (which deals with video game development) in the same university and are researching or have obtained internships in video game companies.

The questions asked to the game designer were:

> How did you become a game designer?
> Do you know what dark patterns are? How did you get to know them?
> Have you ever had the opportunity to use them/ see them used in projects you were working on and how?
> What is your opinion on their use?
> In your opinion, what is the main problem in this topic?

The questions asked to the players (even those with experience in the world of video games) were:

> Have you ever played videogames? Which ones?
> Are there some things you don't like in video games? Which ones?
> Have you ever felt like the game was trying to force you to do certain things? If so, why?
> Are you familiar with dark patterns?
> What measures would you like to see to prevent them?

The previous questions refer to deceptive patterns as 'dark patterns' to find out if the people interviewed knew them by their most commonly used name.

> > > Game Designer, 30 years old

The game designer is a 30-year-old man who has now worked in videogames on multiple consoles, but he began his work experience on mobile video games:

[...] in mobile, let's say, it's a custom and habit... very common.

And this is what the interview focused on, with the designer describing the use of deceptive patterns as a 'standard'.

He admitted to have used them during this experience, but described the reason as 'laziness', despite having recognized by himself that the short development times were not enough to be able to properly think of alternatives:

[...] things have to be done within a certain time and usually for mobile they are very short times, right? [...] 4/6 months. Eh, the idea... you really don't have time to create new things, so you reuse what is there.

When asked what could solve this problem, he cited the intervention of government structures:

[...] that a government regulates these things, as is happening now in Europe, for example, this already puts a hard stop because unfortunately it is like trying to stop the porn industry. I mean, you can't stop it, right? But you can regulate it. [...] certainly a government structure that protects you from these things.

> > > Player/Artist, 25 years old

Then a 25-year-old male player/artist who had taken Game Design courses at the Polytechnic University of Turin and participated in the student organization Level Up Lab was interviewed.
Even though he has this portfolio, he didn't know the term 'dark pattern', and it was necessary to give him the definition of the term to allow him to understand the theme:

[…] I know the meaning of the term, but the term itself, yes, was not familiar to me.

Once the interviewee received the term's description, he was able to relate it to some of his experiences regarding player retention:

[…] for example, Stardew Valley does not sell DLCs, it does not sell game content, it does not sell anything else, so it does not do it from a point of view… remunerative on me as a player, but more on the… good word and the good reputation that the game can make. Genshin Impact does it because it is a… a free

to play game, basically, so it needs players to invest in the game, to… to stay alive basically; so, there's this initial love bombing and then it actually pushes you to… either stay there for hours or spend money.

Regarding what interventions could, in his opinion, solve this problem, he also mentioned the government intervention and showed that he is informed about the latest news on the topic:

[…] for example, measures that the European Union is trying out, I am in favor of, for example for League of Legends, however… all games, I gave the example of this one because I know it, but for all games in which there are microtransactions with in-game currency, the European Union is forcing you to enter the specific amount, this is because, for example… it very often happens that… to buy an in-game product you need the 110 classic gems, but the bundle with

which they sell these gems goes by 100 at a time so you are forced to buy double so… this type of measures that profit from people […]

When asked if he would like to know more about deceptive patterns, he replied no, but only if the patterns do not turn out to be harmful on a monetary level:

Purely as a user… maybe I wouldn't like it. I mean, if it's about mechanics, let's call them sneaky, like those of gacha, in

any case something that pushes me to spend money, I would obviously like to know, more than anything else to… not waste time with that game essentially. If instead they are mechanics insists on what is the gameplay loop of the game, that could somehow ruin the magic of maybe a good game that does it in a sneaky, effective way, but that simply brings me… uh… enjoy that game, no, I wouldn't want to know.

> > > Player/Game Designer, 25 years old

Subsequently, a 25-year-old female player/artist was interviewed who also took Game Design-themed courses at the Politecnico di Torino and participated in its student organization Level Up Lab.

Although she didn't immediately recognize the term either, she managed to trace it back to a course she took during her university career:

Yes, I had sort of studied it in... I think Digital Strategy [editor's note: course at the Politecnico di Torino] it was a com-munication thing though, applied, let's say, in general to advertising, to companies and social media, so I had actually never thought about it from the point of view of... players, that is, a bit from the point of view of games.

Although the term 'dark pattern' and its definition have been clarified, the interviewee reflected on her confusion regarding why they are used and their effectiveness (or not), with an argument not too dissimilar to that of Gero Micciché's (previously mentioned in 'Player activism: Boycott'):

[...] it must be motivated, otherwise it is simply not an intelligent choice. Because if you create, how to say, a lot of frustration within the gamer, simply the first thing that comes to mind is «I don't know, this game is shit, I'll leave it» you understand? No... even like in terms of economic return, if we are talking about industry, if you don't have a good player in such a way as to always keep him hooked on the game anyway, the platform on which he is playing, doesn't even make you make sales at a certain point [...]

This theme also connected with the interviewee's view on human relationships ending up on a more cynical view than that of the previous interviewees, especially regarding to actions that can be done against the implementation of deceptive patterns:

[...] I have always had the impression that if a person can take advantage of another person without too many consequences, then they do it. It's a bit of the whole discussion that then set up, in my opinion, the entire gam-bling and entertainment industry, in the sense that... unfortunately, we don't live in a world that is all... roses and flowers, in the sense that if these things exist they were born for certain reasons. Some can be economic, some can be psychological [...] you can also try to control them from the point of view of, I don't know, the State, as much as you want but... there will always be people who, in some way or another, take advantage of, they will take advantage of others. It's not something that in my opinion you can always control because, y'know... human beings suck. This is my thesis.

> > > Player, 26 years old

Next, a 26-year-old player with a very extensive gaming background, but who was unfamiliar with deceptive patterns, was interviewed:

Have I heard it before? Yes, I think I've heard it before, but I can't explain what it is.

Once described, he was able to connect them to his experience in a previous job, showing that he knows that it is possible to exploit psychological techniques to stimulate specific actions in people:

[...] these mechanisms that have to attract you/except in deception always interest me, for example... having worked in large-scale distribution, at [name of company for large-scale distribution], as you know... there, I already knew some of them but I also realized by hearing them talk, explaining the bosses, the various mechanisms, there are... things... so subtle that one would never think that they are designed to make you buy that specific product [...]

When asked to imagine how, in his opinion, one could intervene against deceptive patterns, he also mentioned government intervention:

In fact, I think that a bit of limitation, not necessarily elimination, because I don't think that's right, because just as I can make a betting slip or play 10 euros on the slots, I can also do it in the games, so total limitation, no, but maybe some... precaution, limitation, which can obviously be done only

by government agencies, because if it is the ONLUS non-profit organization, ed.] that tells you that it is harmful, it is useless, because nobody would give a damn.

However, he is skeptical of the potential effectiveness of this proposal. He too makes a marked distinction between deceptive patterns of a monetary type and not:

[...] now you can't do anything, because you would only limit an industry, you would limit a hobby, something, so some... maybe information campaign, rather than government limitation right now on these aspects. If they concern, obviously, money traps, then yes, as was the case for... the gambling on FIFA.

> > > Player, 45 years old

Finally, a 45-year-old player was interviewed, who mainly plays mobile games.

During the interview, she repeatedly mentioned potentially sensitive topics in her family. For this reason, at the end of the interview, she was asked if it was possible to keep them for analysis: out of 3 topics, the interviewee agreed to disclose only 1.

The interviewee demonstrated that she was not aware of deceptive patterns, but that she knew of the existence of techniques that can manipulate people, even if with different 'tools':

What is 'Dark', 'darkness'? 'Pattern', what is it? [...] I know that behind every action we do sometimes… it can be induced, right? There are images and the human brain can be… manipulated, right?

Despite this, she managed to find some examples, despite her limited experience as a player:

They… they want to force you to give the IBAN there or payments, by force—that by force, not by force, I always play 'basic'. But there are some levels where maybe they ask you to pay or to do for no? To move forward… I stop. [...] It has to earn money. I'm sorry, but… pay it, no. Those who have a lot of money can do it. I play 'basic' and wait until the energy fills up again.

The only disclosed topic among the sensitive ones was the case of a hikikomori person in the interviewee's family. Because of this experience, she compared deceptive patterns to drugs and sees the people who fall victim to them as 'fragile':

But excuse me, but since when is a machine, video game, whatever you want, news, whatever... that 'drives' us? [...] The same in drug dealing, everyone says «ah yes, the dealer, the dealer» but I also blame the consumer: but if there were no consumer, MANY of those consumers, the dealer would die of hunger. It's... half/half the fault.

Although the interviewee recognizes that the players have a huge responsibility in avoiding being deceived, when asked what measures would be more congenial to her, she also mentioned interventions external to the players themselves. But, unlike the other interviewees, instead of governments, she referred to the videogame platforms:

I don't know how this system works, that... how it's put into circulation like on, Google Play, Google Store, like, how to say—Play Store. Eh, or on Apple that uses another... something else on, eh.. of, I don't know, of... try to limit them, in the sense when these games are introduced, if we know well this pattern, how it works, of trying to limit it, of, of creating less dependency.

> > > Analysis

In short, it emerged that the knowledge of deceptive patterns is limited: among all the interviewees, only the Game Designer already knew of their existence.

The players with more experience in the world of videogame development were able to recognize them from the description (but the name alone was not enough), while for the other players it was necessary to fill them in with examples, even taken from their daily experiences not relevant to the world of videogames.

It is interesting that all the interviewees, when the topic of the questions turned towards deceptive patterns, spontaneously spoke of gambling.

It is also interesting because, in the paragraph 'Online Stores' Reviews', the pattern 'Gambling / Loot boxes' is only in the sixth position. While the most detected patterns were mentioned by the interviewees, they weren't as keen to talk about them compared to the gambling pattern.

Among the solutions proposed, the most common answer was government intervention (3 people out of 5) or by the online platforms: but everyone had doubts about their actual effectiveness in eradicating the problem.

Furthermore, 2 of the interviewees specified that they view monetary deceptive patterns in a much more critical light than deceptive patterns of different categories.

Another recurring theme in the interviews was educating people about deceptive patterns, especially among those interviewed who were more skeptical about government (or platform) intervention and more inclined to hold players accountable as well.

This education does not take the form of simply 'teaching' certain information, but rather as a means of protecting oneself from future deception.

> > Concept

By analysing the interviewed people's needs, the project's concept was formulated as it follows:

> The project's final objective is to inform every target analyzed so far (companies, governments and players) about where the responsibilities for the implementation of deceptive patterns lie:
> since it has been said in the 'Considerations' paragraph that the players' opinions and knowledge on the matter are a necessary element to start actions against deceptive patterns, the project will take them as its primary target;
> The project must inform about deceptive patterns and offer the data necessary for the government bodies to act against their implementation;
> The project must update over time and be flexible to changes such as the publication of new literature, the enactment of new laws, media influences and the opinions of players.

Afterwards, the five fundamental guidelines have been identified in order to develop a project that is:

> informative, about the presence of deceptive patterns in videogames;
> clear, using words that are easy to understand;
> updated and flexible to changes;
> accessible to all the actors, with touchpoints at key points of importance;
> user generated and able to accommodate the opinions of players.

> > User journeys

For each of the people interviewed, the thesis proceeded with the creation of user journeys to map where, in the interviewees' daily experience towards deceptive patterns, which was the most appropriate 'point' when the project could help them.

The game designer kept its name; the players who have experience in the videogame industry are grouped together and called 'Players/developers': the player with an extensive repertoire of videogames playes is called 'Expert player' and the player which plays the most on mobile is called 'Mobile player'.

This point was identified, for all the actors, at the 'Service' phase, posing the project as a potential hub for the consultation of different kinds of information on the topic.

Game designer	Awareness	Consideration	Decision	Service	Conclusion
Action	Company requires the development of a video game with high revenues in a short time	Due to the timing they finds themselves considering the use of deceptive patterns	Search for patterns and more ethical and 'low effort' solutions	Use of the project to find the patterns it has used and the laws regarding them	Implementation of patterns in the video game
Context & Touchpoints	Developer company	Developer company	Web By word of mouth	Project	Developer company
Gains				Recognizing which patterns are more common and annoying for players	Being able to develop less deceptive videogames
Pains	Stress Little personal satisfaction	Need to reach imposed milestones	Potential precious time wasted		Fear that the implemented patterns will be proved to be deceptive in the future
Emotion					

Players/ developers	Awareness	Consideration	Decision	Service	Conclusion
Action	Discovering a deceptive pattern (without knowing its name)	Curiosity about why certain mechanisms are used, even if they are annoying	Researching the phenomenon	Using the project to discover patterns and why they are implemented	Participating in user-generated activities
Context & Touchpoints	Online store News	News	Web	Project	By word of mouth Project
Gains		Curiosity	Searching for a community that is interested	Ease of finding information	Answers to doubts Sense of participation
Pains	Frustration		Difficulty in finding information		Data security
Emotion					

Expert player	Awareness	Consideration	Decision	Service	Conclusion
Action	Discovery of a deceptive pattern (without knowing its name)	Curiosity if there are legislative actions against this pattern	Online research on laws in their area	Using the project to find news on the topic	Better understanding of the topic
Context & Touchpoints	Online store Web	News By word of mouth	News Web	Project	By word of mouth
Gains				Ease of finding information	Answers to doubts
Pains	Frustration		Difficulty in finding information		Doubts about the veracity of the news
Emotion					

Mobile player	Awareness	Consideration	Decision	Service	Conclusion
Action	Searching for a mobile videogame	Fear that the videogame chosen is yet another one that forces them to pay or play every day	More careful reading of the videogame in the Store	Use of the project to see if the videogame uses such things	Downloading (or not) the videogame or look for another one more suitable for them
Context & Touchpoints	Online store	Online store	Online store Reviews	Project	Online store
Gains	New entertainment			More clarity on what to expect	(if they download the videogame) New videogame more suited to their needs
Pains		Fear of being 'sucked' into a videogame	Little information	Doubts about the veracity of user-generated data	(if she searches for another videogame) Need to start over
Emotion					

> > Discover, Define, Develop

Thanks to the analysis and research phases on the customer journeys made on the interviewees, the collection of their needs and problems was organized into three macro-areas, identifying the needs of the project's overall target.

Based on the identified needs, by using the 'How might we...' framework, design questions were formulated to help identify the path to take to be able to find concrete solutions.

How might we...

> ... let players find out a videogame's deceptive patterns before downloading it?
> ... create a database for all the current and upcoming laws?
> ... unite all players' voices in one easily findable area?

Awareness

> Need to reach imposed milestones
> Being able to develop less deceptive videogames
> Finding a community that cares

Information

> Greater clarity on what to expect from a videogame
> Ease of finding information
> Recognizing which patterns are most common and annoying

Worries

> Doubts about the veracity of user-generated data
> Doubts about the veracity of news
> Data security
> Potential wasted precious time
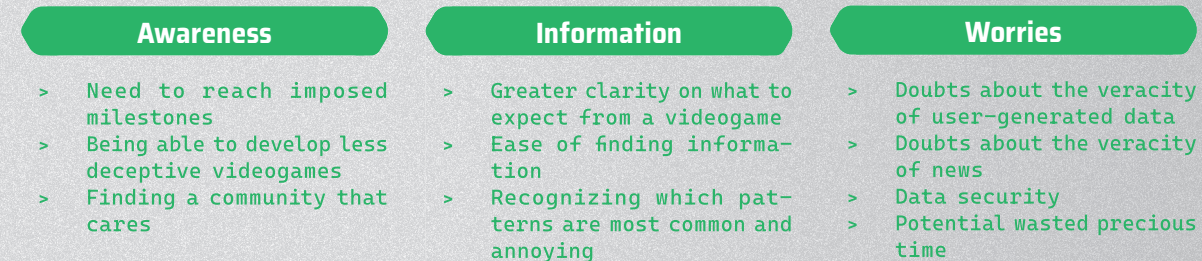
Fig. 31: the pains and gains of all the interviewees, grouped in themes.

Fig. 32: the passagge from the definition of the 'How Might We' question to the answers.

How Might We...

... let players find out a videogame's deceptive patterns before downloading it?

... create a database for all the current and upcoming laws?

... unite all players' voices in one easily findable area?

Create a list of the patterns available in the game, easily accessible by the online store as a pop-up

Have a news section based on official info by various government bodies in the world

Have the players insert their opinions through forms

In this way the foundations for the definition of the actual project proposal were laid.

It was considered essential to group the deceptive patterns in a single place that was easily accessible to all, that

could be updated with the latest news on the topic and with a guarantee for users to interact with them.

> > Value proposition

At this step, it was possible to define what was the 'heart' of the project, the key objective that pushed it towards its final output:

For all the chosen targets there is a need for clarity of deceptive patterns and the current situation: the project will focus on the design of a dedicated website that will guarantee accessibility of the requested information. The aim of this project is to create an information hub that does replace the already existing ones, but aims to be a starting point to understand the environment of deceptive patterns and obtain data about it, to stimulate both knowledge and actions against these practices.

> > Requirements

After having identified a web platform as the final service, it was necessary to define all the requirements needed for its use and development. For this purpose the MoSCoW method was used to separate them into 4 categories.

Fig. 33: the list of requirement for the website grouped with the MoSCoW method.

Must

> It must be responsive
> It must load quickly
> It must have a smooth scrolling
> It must be compatible with all major browsers
> It must be easily maintainable
> It must protect user data according to current regulations
> It must be free of deceptive patterns in the UX and UI
> It must provide a method for users to input deceptive patterns they find in video games
> It must have an area where you can read the lists of the most common deceptive patterns and their descriptions.
> It must present a page that, with non-deceptive graphs, makes it clear the number of video games analyzed and patterns detected
> It must be updated based on internal and external databases of information

Should

> It should feature an About page, where the project's goal is explained
> It should use only one form type for all the pattern lists present and not force the user to choose one
> It should catalog deceptive patterns to allow users to find them more easily
> It should present the data entered for each individual videogame analyzed
> It should provide a method to ensure that users cannot fill out multiple forms for the same video game
> It should have touchpoints in online stores, where you can see the patterns present in the video games and report back to the site

Could

> It could feature a private area where you can see your contributions
> It could allow users to change their form responses in the future
> It could present the various news and papers divided by nations/organizations
> It could feature a timeline explaining how the topic of deceptive patterns has developed over time

Won't

> It can optionally have, in the users section, elements that make the account more personal
> It could optionally have, on the pages of each video game, an indication of which platform it is available on (console, mobile, etc.)
> It could can optionally present videogames according to the platform they belong to (console, mobile, etc.)

16personalities.com

Description	a website that provides a free personality test based on the Myers-Briggs Type Indicator (MBTI). The test categorizes people into one of the 16 personality types available.	Target	> Users curious about what MBTI represents them > General population
Sections	> Home > Personality test > Personality types > Premium Suite > Teams and Practitioners > Resources		
Best practice	> The User Interface is well designed and makes the website easy to navigate		
Worst practice	> It doesn't offer any possibility for user generated content		

> > Case studies

Three case studies were analysed to understand their best and worst practices.

All the case studies are websites that offer information about very specific themes: two of them deal with deceptive patterns, with one of them that focuses on videogames.

darkpattern.games

Description	A videogame review website devoted to helping users find games that don't use psychological tricks to manipulate them into being 'sucked in' the videogame. It also teaches about the deceptive patterns that game designers use.	Target	> Casual gamers > Game developers
Sections	> Home > Sign in > Dark gaming patterns > Temporal Dark Patterns > Monetary Dark Patterns > Social Dark Patterns > Psychological Dark Patterns > Game Listings > Search > FAQ > Terms of Use > Privacy Policy > Contact Us		
Best practice	> Users can review the videogames > Comments on each deceptive pattern's page help with the comprehension of the patterns		
Worst practice	> The website is difficult to navigate > The videogames available to be reviewed can be added only by the website's owner		

deceptive.design

Description	The first website dedicated against deceptive patterns, whose mission is to offer knowledge to both the general population and practitioners.	Target	> General population > Researchers > Practitioners
Sections	> Types > Laws > Cases > Hall of shame > Reading list > Submit > About		
Best practice	> Different sections provide different informations for each target		
Worst practice	> It may be difficult to understand for those who are not familiar with technical and/or legal jargon		

> > > Positioning matrix
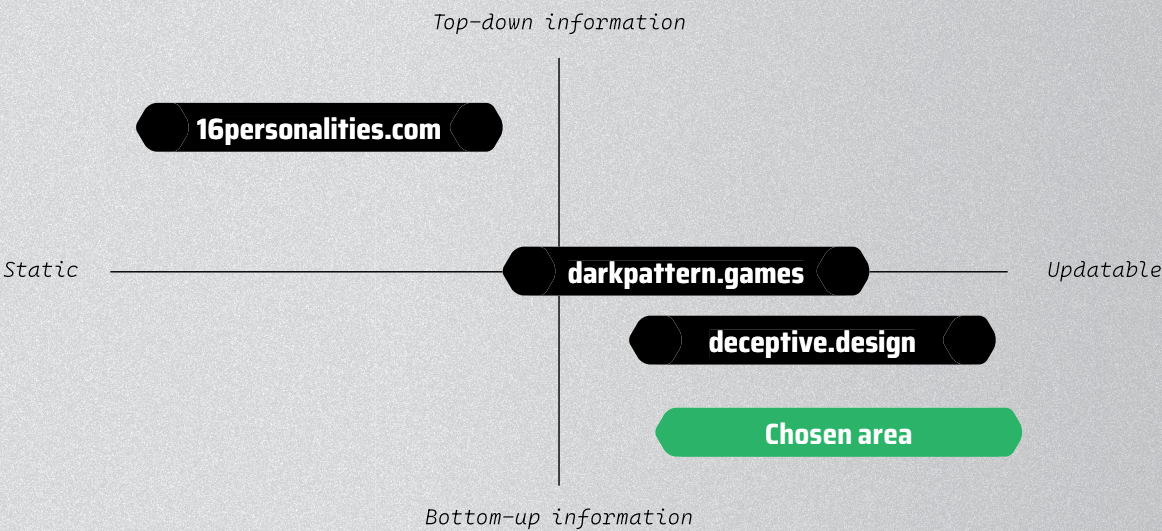
Fig. 34: positioning matrix with the case study websites analyzed and the website developed in this thesis.

After the analysis of the case studies's best and worst practices, the development of the website shifted to identifying the positioning area, within a two by two matrix, of the thesis' project to make sure to choose a combination that can add value in the current landscape regarding deceptive patterns in videogames.

For the vertical axis, the chosen parameters are:

> Top-down information, which is based on information coming from institutions or company directors to users;
> Bottom-up information, characterized by information that travels from users to institutions or higher-ranking people within a company.

The case studies are positioned on this vertical parameters as it follows:

> 16personalities.com is close to the top-down approach, as the information on the website is the result of studies by specialists and it does not depend on users;
> darkpattern.games is positioned in the middle between the two extremes, as it does use and report information provided by experts, but it is managed by an individual user;

> deceptive.design is positioned closest to the bottom-up method, because it was created through the collection of news and information that, combined, have given shape to what the website offers today;

The project's is positioned as close as possible to the bottom-up method, since it aims to collect the user's opinions through both form compilation and news, just like the *deceptive.design* website.

For the horizontal axis, the parameters chosen are:

> Static, where the information is defined and unchangeable. Updates are not to be expected;
> Updatable, where information that can change over time according to needs and new studies on the topic.

The case studies are positioned on this horizontal parameters as it follows:

> 16personalities.com is positioned close to the static extreme, as it presents well-defined data that is used to define the different personalities and it is therefore important that they remain unchanged. .
> darkpattern.games is positioned closer to updatable, since users can fill out forms, but it presents a well-defined list of games and

deceptive patterns;
> deceptive.design is the closest to updatable, as it allows the addition of news and new information to the website, but even in this case the list of patterns is well defined and not editable.

The project is positioned at the extreme updatable of the matrix, because it aims to become a collection hub that is constantly up-to-date. The project is thus able to add value with its unique combination of bottom-up information and its updatability.

> UX/UI

> > Flowchart

With the use of a brainstorming process, a draft flowchart for the project website emerged and was refined through subsequent iterations.

The user has at least two touchpoints from which they can get in touch with the project: the first is the website itself, which can be found through a simple online search; the second

is found through the videogame page's online store, where a new feature will be implemented to specify the patterns present and redirect users to the website.

The first page the users will access is the landing page (or 'home'), where users will be able to see the header, which contains:

> Logo, redirecting the users on the homepage;
> About, where the user can learn about the specifics, objectives and vision of the project;
> Deceptive patterns, where the users read about deceptive patterns' descriptions;
> Videogames, where the users can see an overview of the current data regarding all
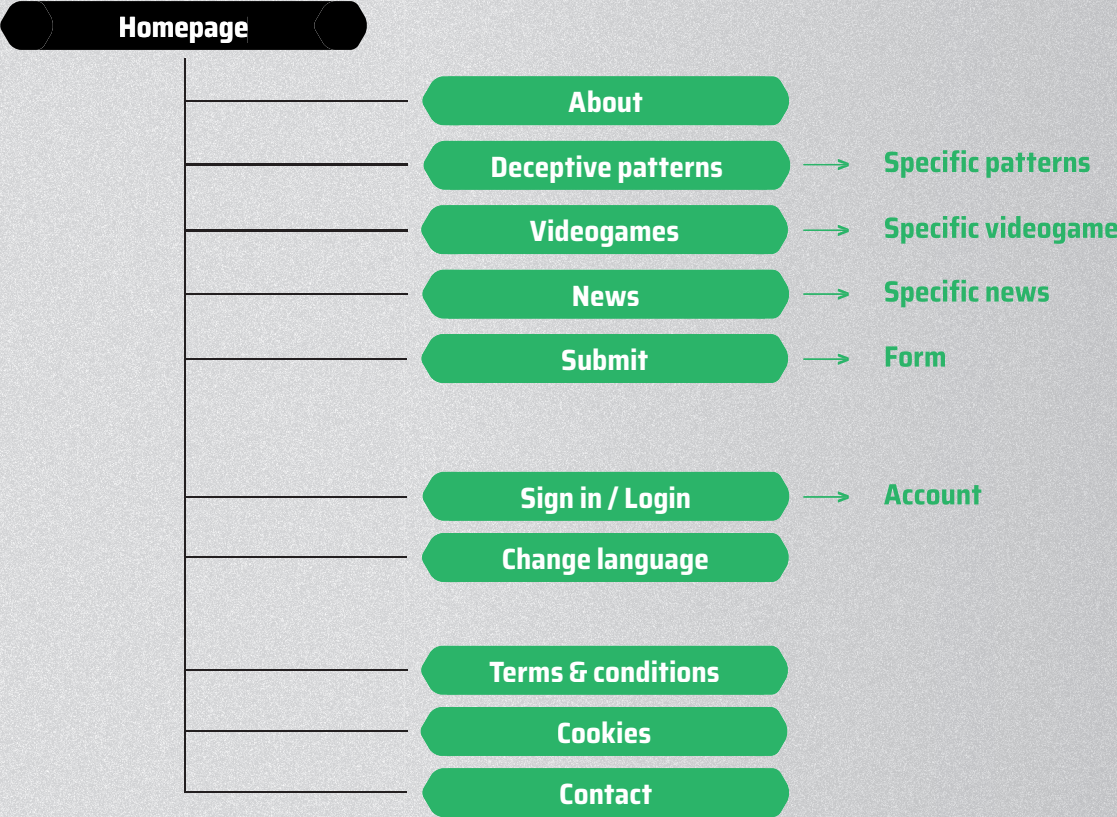
Fig. 35: schematic represen-
tation of the flow developed
for the project.

Homepage

About

Deceptive patterns → **Specific patterns**

Videogames → **Specific videogame**

News → **Specific news**

Submit → **Form**

Sign in / Login → **Account**

Change language

Terms & conditions

Cookies

Contact

the deceptive patterns mapped by users in all videogames. A nested page inside of it holds a database of all the reviewed videogames, and in each of them users can see the amount and kind of deceptive patterns related to that specific videogame;

> News/laws, where users can read news from the industry, regulations and scientific papers all concerning deceptive patterns in videogames and other related content;

> Submit, which holds the shortcuts to all the new content the users can add (deceptive patterns, videogame reports, news or laws).

The user can see all the contents freely: however, in order to use the Submit page, it is necessary to register or login. By doing so, the following new sections are available to the users:

> Account, a page in which a signed-in user can see their activity on the website and change reviews for all videogames precedently reviewed;

> Add patterns, a page nested inside the Submit page in which signed-in users can add a new deceptive pattern;

> Add news/law, a page nested inside the Submit page in which signed-in users can add news, articles and laws;

> Add videogames, a page nested inside the Submit page in which signed-in users can review videogames and check all the deceptive patterns they encountered while playing.

> > Prototype

The project continued with the development of the website's prototype, in order to identify which elements were needed in each page and the hierarchy needed for a good and comfortable user interaction.
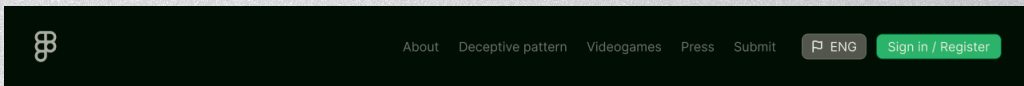
Fig. 36, the prototype's header and footer.

Fig. 37, screen of the prototype's home.

CLAIM

> > > Home

The 'hero' of the page is a looping gif, depicting deceptive patterns in videogames, with the project's claim over it.

To make the website more accessible to people with epilepsy, the gif is 'stopped' until the cursor hovers on it, at which point it gif starts moving (until the cursor goes away).

Downwards, three areas showcase the three main sections of the website (with their headers redirecting the users to their relevant pages):

> 'What are they?' is the shortened version of 'About';

> 'Press', a table with 3 horizontal cards, shows only the last 3 entries of its homonymous page. Clicking one of them redirects to the entry's page;

> 'Videogame', a table with 6 cards arranged in rows of 2 and files of 3, shows the most reviewed videogames in the website. Clicking one of them redirects to the videogame's page.

> > > Sign in / Login

As a safety measure towards potential abuse of the project's bottom-up system, users have to register first in order to add their news, laws, deceptive patterns and reviews.

The 'registration' page uses a form and, to proceed to the next one, an e-mail, user-name and password are nec-essary. Once the registration/login is completed the user is brought to a new page, in which a user card makes it clear to the user that this is the user's personal area.

On the left, a menu made of accordion items gives the user a compact division of all activities available on this page, yet clear and not overwhelming.

On the right, a bar graph shows how much the user has contributed to the 4 different informational areas (vide-ogames, reviews, deceptive patterns, and press) of the website, change them or their username/password and link the account to other account, mostly related to social or online stores.

Just downwards, the user has a shortcut to their more recent activities that acts both as a 'history' area and the section where players can modify information they have added on the website.
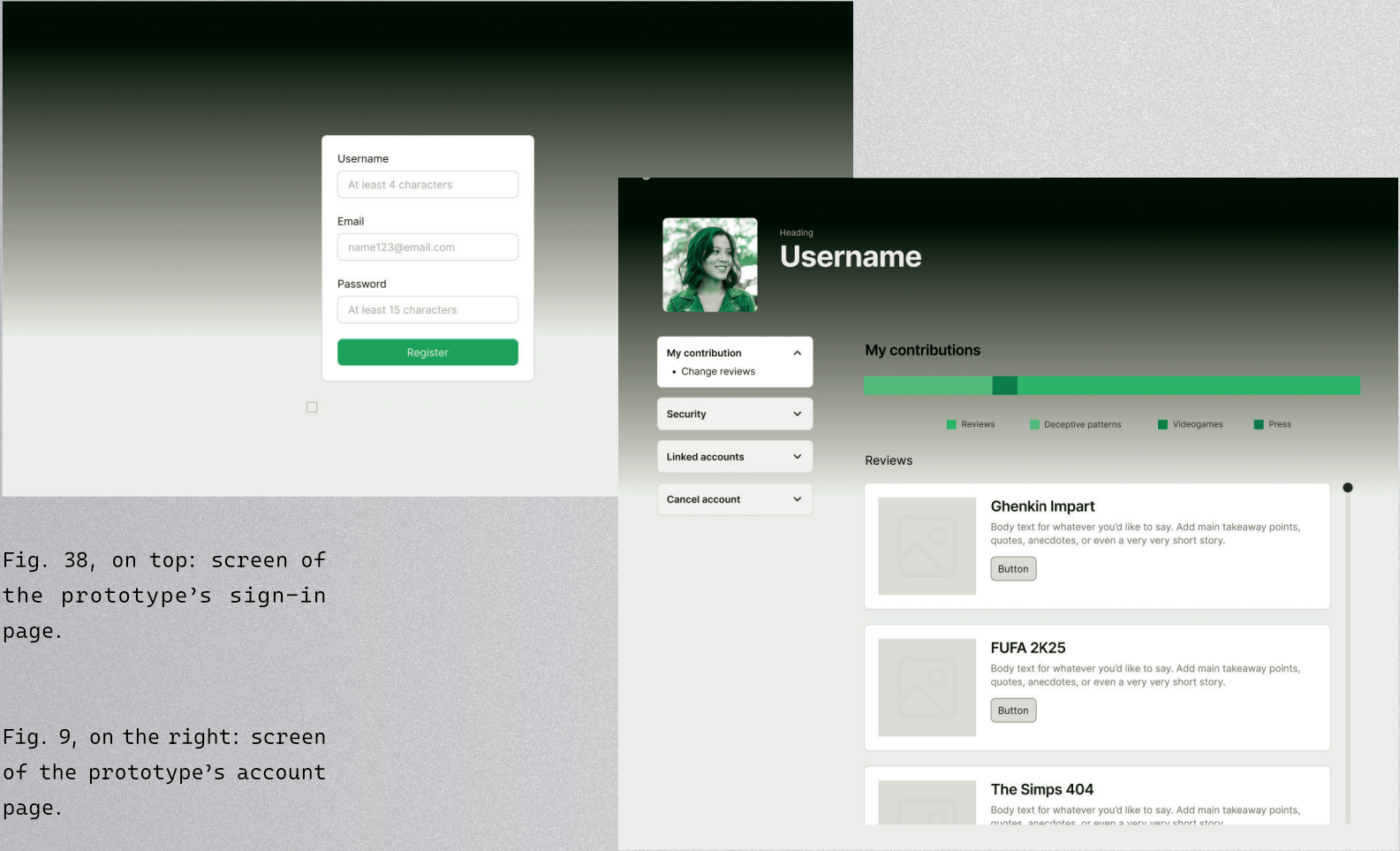
Fig. 38, on top: screen of the prototype's sign-in page.

Fig. 9, on the right: screen of the prototype's account page.

> > > About

The 'About' page is the first one of the header in order to attract the attention of all users not familiar with deceptive patterns.

The page is divided vertically in two:

> on the left, a textbox describes how deceptive patterns and its previous term, dark patterns, came to be and how they reached videogames;
> on the right, an image of a deceptive pattern in a videogame acts as an example for the text on the left.
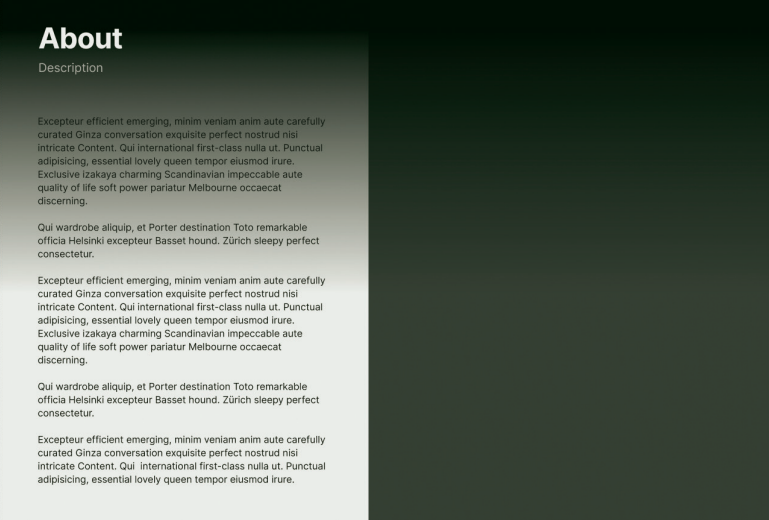
Fig. 40: screen of the prototype's about page.

> > > Deceptive patterns

The 'Deceptive pattern' page presents all the deceptive patterns submitted by the users in the website.

The patterns are grouped by keywords, but they can also be searched with a search bar and be sorted by alphabetical order or by how many times they have been registered by the users in videogames (in descending order).

When one of the cards is clicked, the user is redirected to that deceptive pattern's page, in which they can find a 'hero' that acts as gallery of examples for that specific pattern.

At the bottom of the page, a textbox gives the pattern's definition and, at its left, a card with a bar chart graph shows the 5 genres in which the deceptive pattern has

been registered the most.

A button on the top-right of the card leads the user directly to the 'Videogame' page, in order to see the graphs made by the data of all the reviews collected.
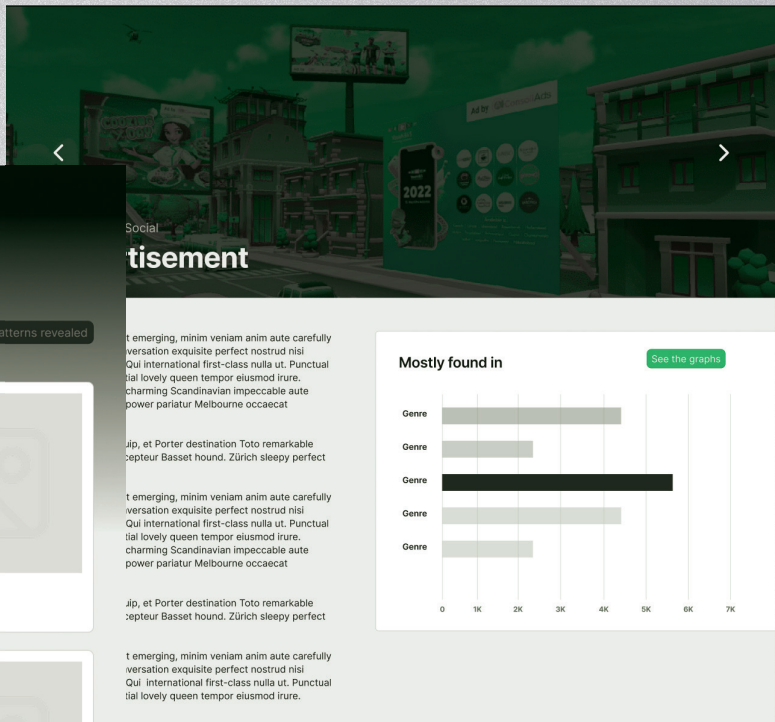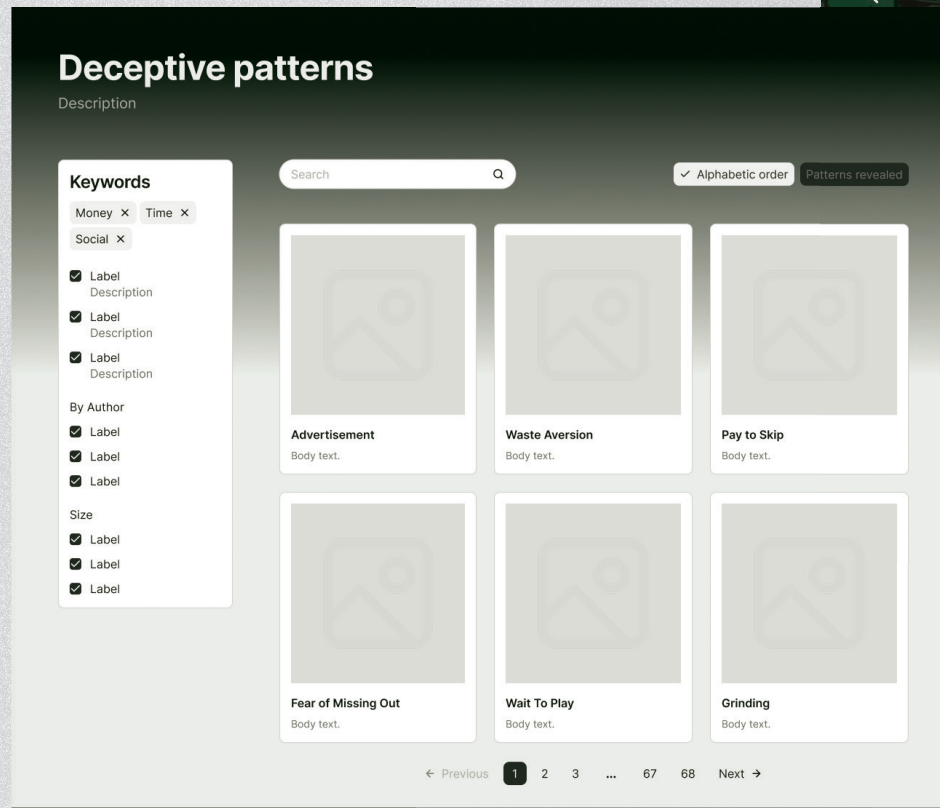
Fig. 41, on the left: screen of the prototype's deceptive patterns page.

Fig. 42, on top: screen of the prototype's specific deceptive pattern's page.

> > > Videogames

The 'Videogame' page is the main page for checking how many deceptive patterns have been registered.

The user can immediately see a bar chart, not unlike the one available on a deceptive pattern's page, that shows in descending order which patterns have been recorded the most. By clicking on a pattern's name, the user is redirected to its relevant page.

A textbox, at the same height as the page's header, calls out to the user if they want to search for a specific videogame: if the nearby button is clicked the user is redirected to a new page, in which a search bar and a table of horizontal cards (that be sorted by alphabetical order or by how many times they have been registered by the users) hosts videogames.

When one of the cards is clicked, the user is redirected to that videogame's page. It is very similar to the deceptive patterns' page, with a 'hero' gallery of images, a textbox with the videogame's definition and a card with a bar chart graph. The latter shows the 5 most registered patterns for that videogame and a button redirects the user to add one themselves.
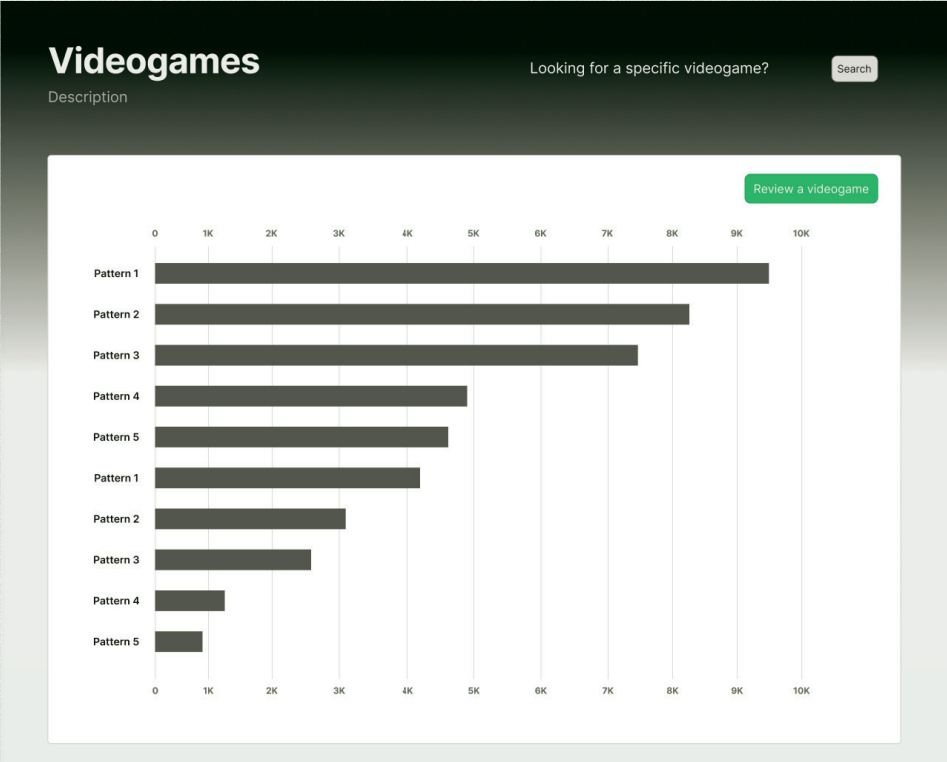
Fig. 43: screen of the prototype's videogame page.

Fig. 44: screen of the prototype's 'search a videogame' page.
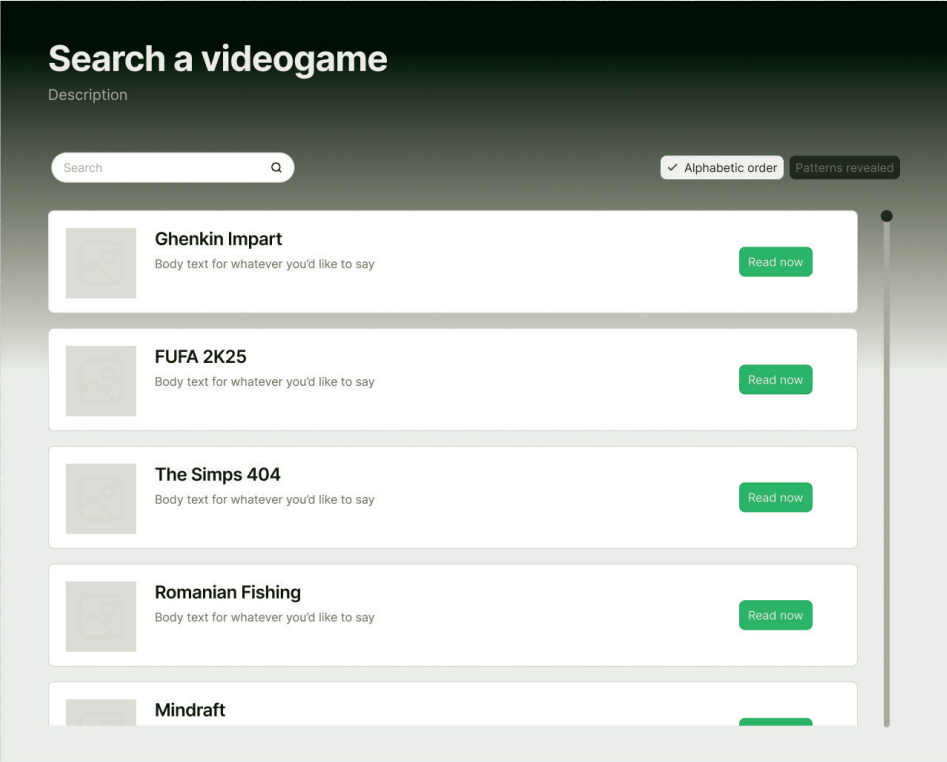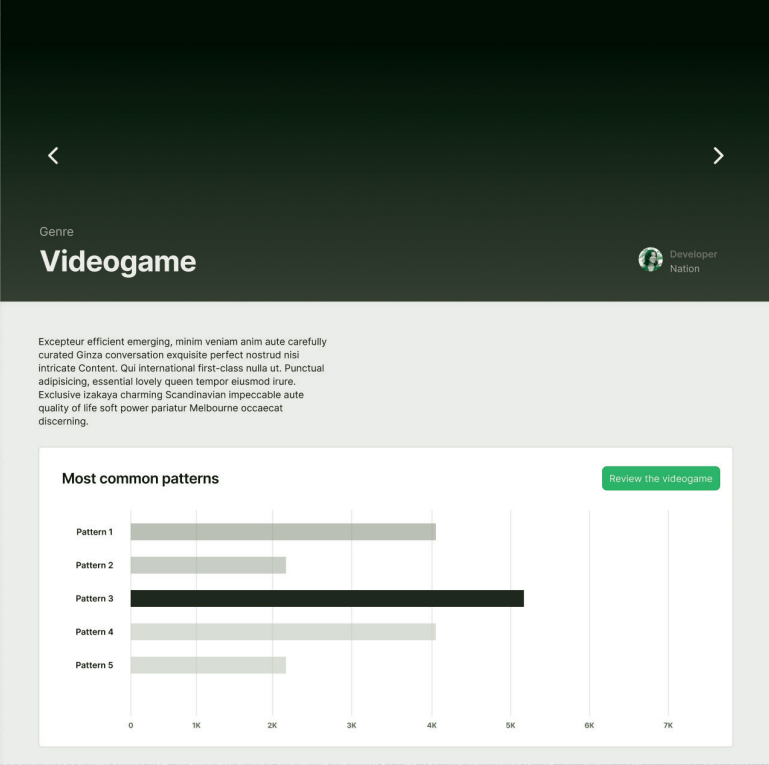
Fig. 45: screen of the prototype's specific videogame's page.

> > > Press

Fig. 46: screen of the prototype's press page.
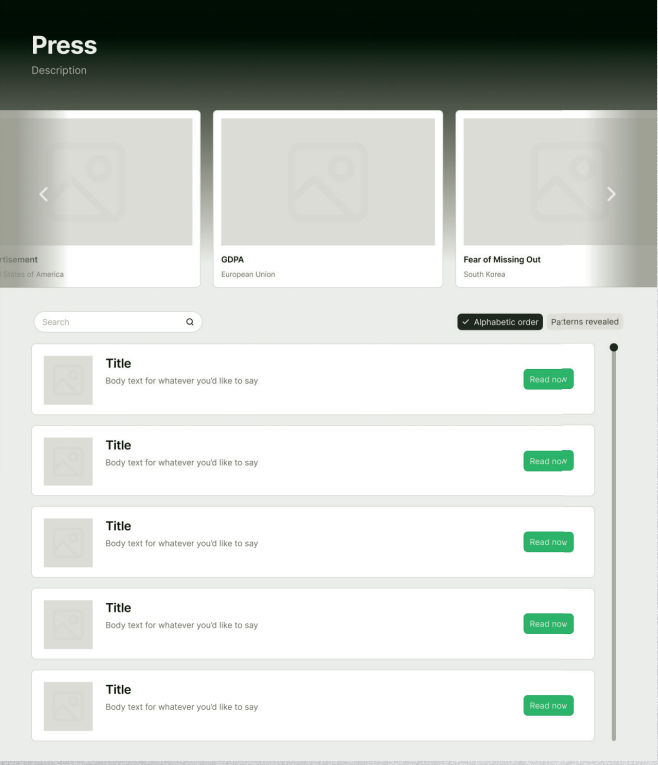
The 'Press' page hosts all the news, laws and cases against deceptive patterns.

A carousel showcases the most important laws for each government body for this theme (or, in their absence, laws that deal with customer, data or privacy protection).

Downwards, a search bar and a table of horizontal cards hold all the page's entries, which are automatically sorted from newest to oldest but can be sorted by how many times they have been viewed.

> > > Submit

The 'Submit' page is the area where users can ad 'bottom-up' information in the website.

The page is divided in 3 columns, each for to a different type of information: deceptive patterns, videogames' reviews and entries for the 'Press' page. Under each column a button redirect the user to the related page form.

This page is open to all users, registered or not: if the user is not registered, the buttons under each option directly redirect to the 'Registration' page instead.
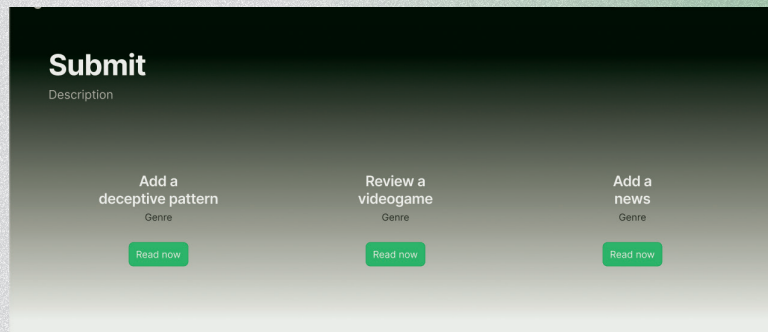
Fig. 47: screen of the prototype's submit page.

> Brandbook

> > Moodboard

The development of the website's UI started with the definition of its brandbook.

The moodboard of the project takes inspiration from CRT monitors.
As a symbol of surveillance, its use can make the users feel like they are 'on the other side', as if they were observing the deceptive patterns from a point of view previously inaccessible to them.
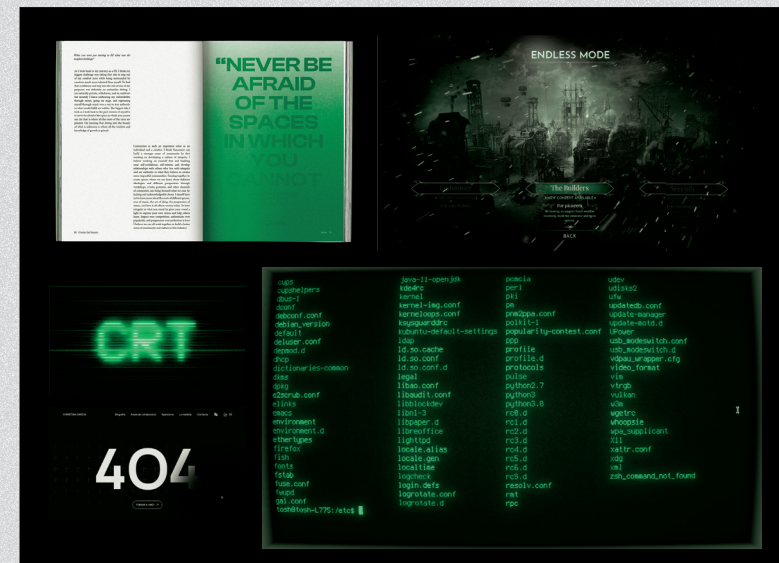
> > Logotype

PatternScanner

Fig. 48: the website's logo-type.

The website's name is Pattern Scanner, purposefully straightforward to make it easier for anybody who is not familiar with deceptive patterns to link it with the project once they learn about it.

The logo is composed of 4 L-shaped elements that form the symbol of a squared scanner, modified to gain a slightly rounder shape that mimics the curved screen of a CRT monitor.

Inside of the squared scanner symbol there are 4 geometric shapes positioned in a cross to recall the buttons of a videogame controller.

> > Call to action

Discover and Reveal.

The website's call to action is formed by two verbs, each one highlighting one of the website's main functions developed in the 'Discover, Define, Develop' paragraph:

> Discover, by learning about deceptive patterns;
> Reveal, by submitting new reviews, deceptive patterns or news.

> > Typefaces

The typefaces used are:

> Saira Semicondensed for titles and headers;
> Cascadia Code for subtitles;
> Noto Sans for the body.

The quick brown fox jumps over the lazy dog.

The quick brown fox jumps over the lazy dog.

The quick brown fox jumps over the lazy dog.

Fig. 49: the website's typefaces in their Regular style. From top to bottom: Saira Semicondensed, Cascadia Code and Noto Sans.

> > Palette

The palette uses mostly black, gray and a highly saturated green.

Since the target's age can vary drastically, a higher contrast between backgrounds and texts can help the readability for all users.
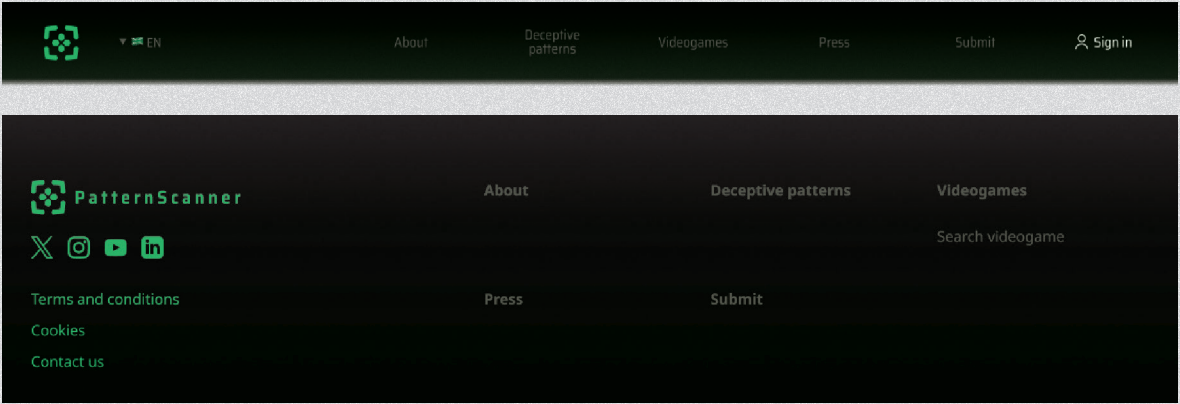
#000700

#14AE5C

#202620

#E8F1F2

#363E37

Fig. 50: the website's palette.

Fig. 51: the website's header and footer.

> Website

Each page has a CRT effect overlay with horizontal lines and a noise effect. Since it imposes some degree of eye strain) and make the website's content accessible, the following choices were made:

> all images, headers and backgrounds are behind the overlay. Additionally, all images have an overlay that can range from a low-opacity green to one that mimics the brightness of a CRT monitor;

> all elements that need to be read clearly are put over the CRT overlay. This includes cards, textboxes and buttons.

Fig. 52, on the left: the
website's home.

> > Home

The gif in the 'hero' section
is darkened with a brand-
coherent gradient overlay
that mimics the brightness
of a CRT monitor.

The 'What are they?' textbox is
backed with a light gray back-
ground element that mimics

the bleed of a high-contrast
white text on a black back-
ground, but has also the func-
tion to highlight it and reduce
the reading strain caused by
the effect's lines.

The 'Press' shows, with its first
card, the effect created when

the cursor hovers over all the
card element in the website.

The 'Videogame' became a
carousel of 6 cards, each one
with the most reviewed vide-
ogames in the website.

Fig. 53, on the right: the
continuation of the web-
site's home.
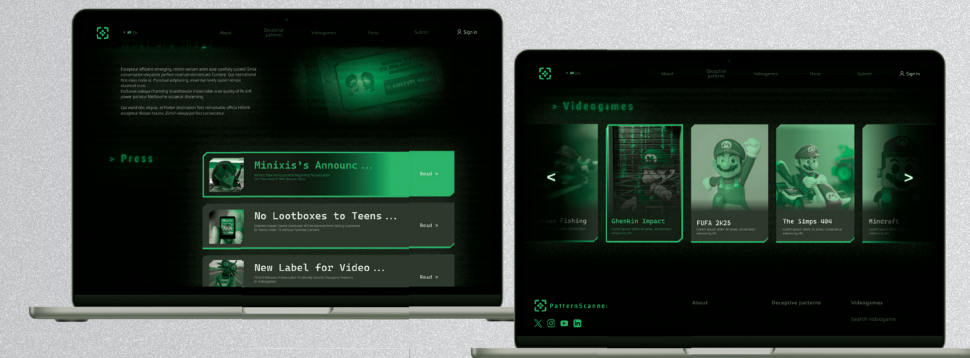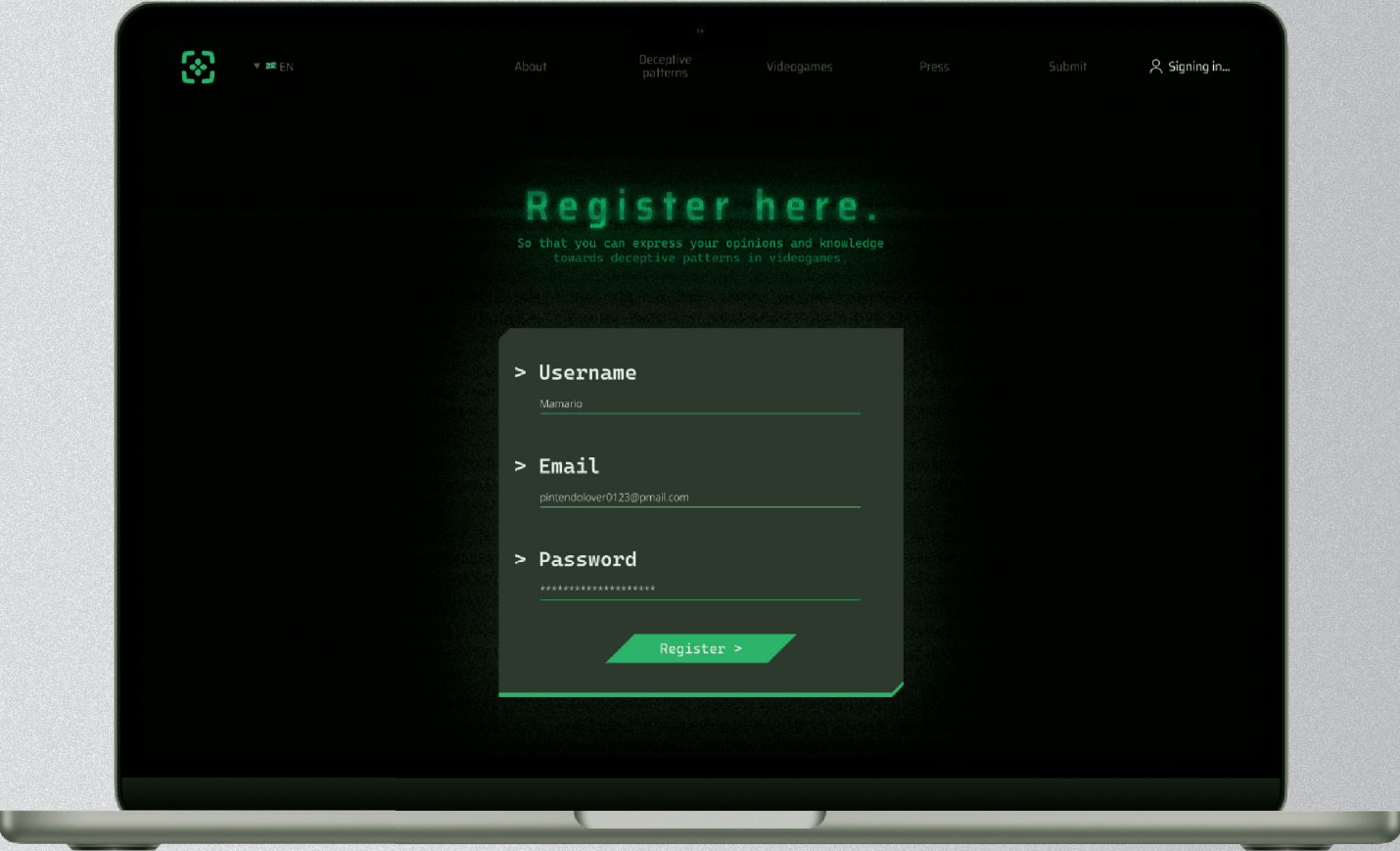
Fig. 54, on the left: the website's sign-in page.

> > Sign in / Login

The 'registration' has a new textbox that explains why the user should register on the website.

On the left, the accordion menu became a simple one that has the current active page highlighted with an horizontal green background with 'hexagon inspired' edges.

On the right, a bar graph utilizes highly saturated out-of-palette colors (which can be seen better by scanning the QR code at the end of the thesis) to better define the different 'areas' and, downwards, the recent activities area has a slider to not overwhelm the user with an excessively long list.

Fig. 55, on the right: the website's account page.
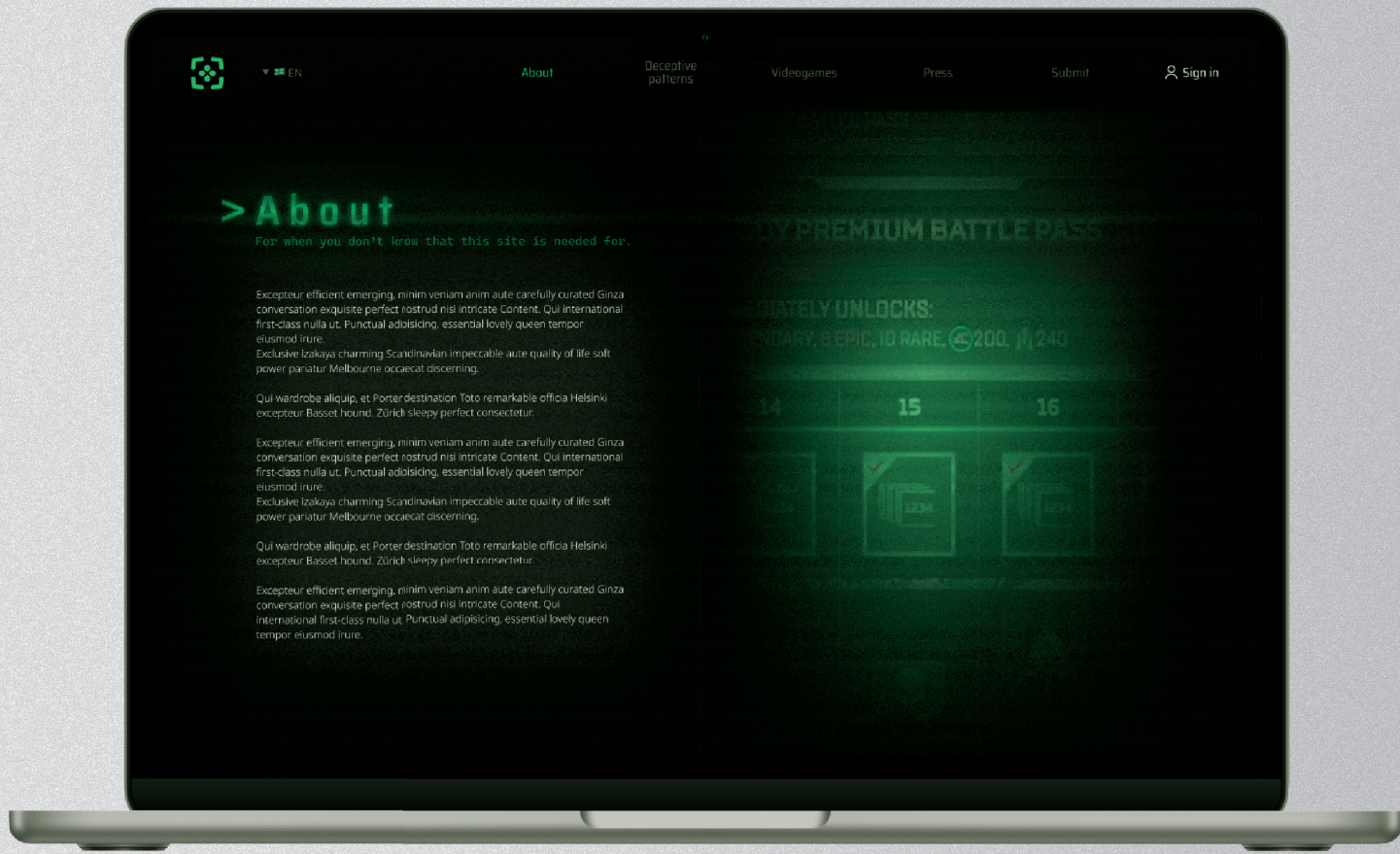
Fig. 56, on the left: the
website's about page.

> > About

The 'About' page keeps its division in two columns as its prototype version.

On the left, a light gray background backs the textbox, mimicking the bleed of a white text on a black background.

On the right, the image of a deceptive pattern with an overlay mimics the brightness of a CRT monitor.
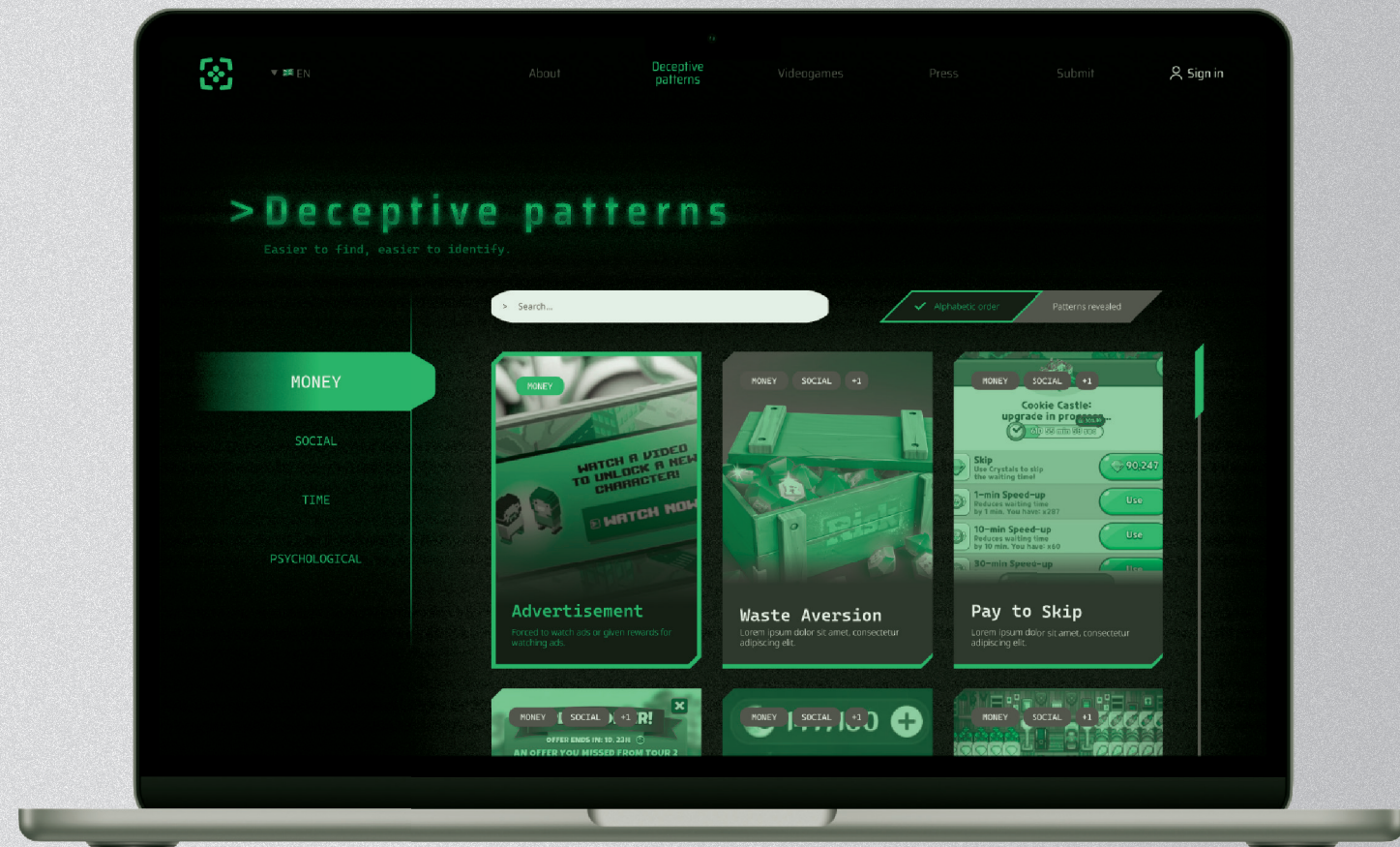
Fig. 57, on the left: the
website's deceptive pattern
page.

> > Deceptive pattern

The 'Deceptive pattern' page
presents all the patterns avail-
able in the site.

The keyword selection area
uses the same menu available
in the 'Personal area', with the
currently chosen keyword
highlighted with an horizontal

green background with 'hex-
agon inspired' edges. The
search bar has similar edges,
while the alphabetical/regis-
tration order buttons use
slanted parallelograms.

The 'hero' gallery of examples
in a deceptive pattern's page

shares the same overlay as
the 'hero' in the homepage,
the textbox's is shared with
the one in the 'About' page
and the bar graph is posi-
tioned on a brand-coherent
card.

Fig. 58, on the right: the
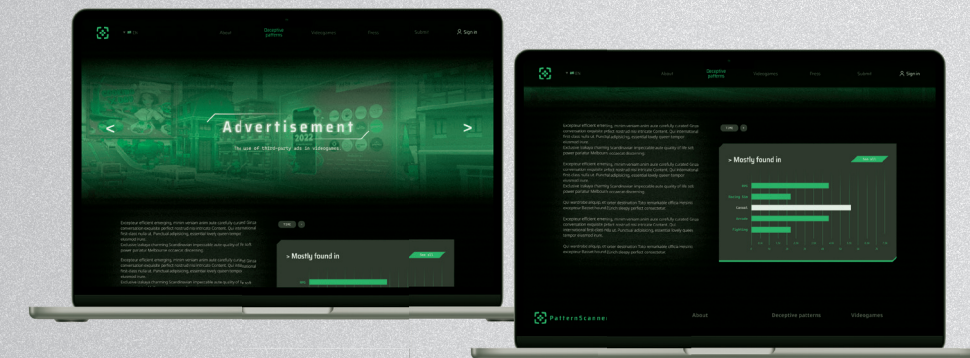website's specific deceptive
pattern's page.

Fig. 59, on the left: the website's videogames page.

> > Videogames

The 'Videogame' page, despite using a bar graph like the 'Deceptive pattern' page, does not use the same style.

The background is the same one used for textboxes and the bars use the same color as the card's background, with how many times has that pattern been registered at the far right of each bar.

The button that redirects to the list of registered videogames is lowered with the page header's subtitles and said page uses the same search elements as the 'Deceptive Patterns' page.

The videogame page is, with exception of the information available in the bottom-right card, otherwise identical to the pages for deceptive patterns.

Fig. 60, on the right: the website's 'search video-game' and the specific vide-ogame's page.
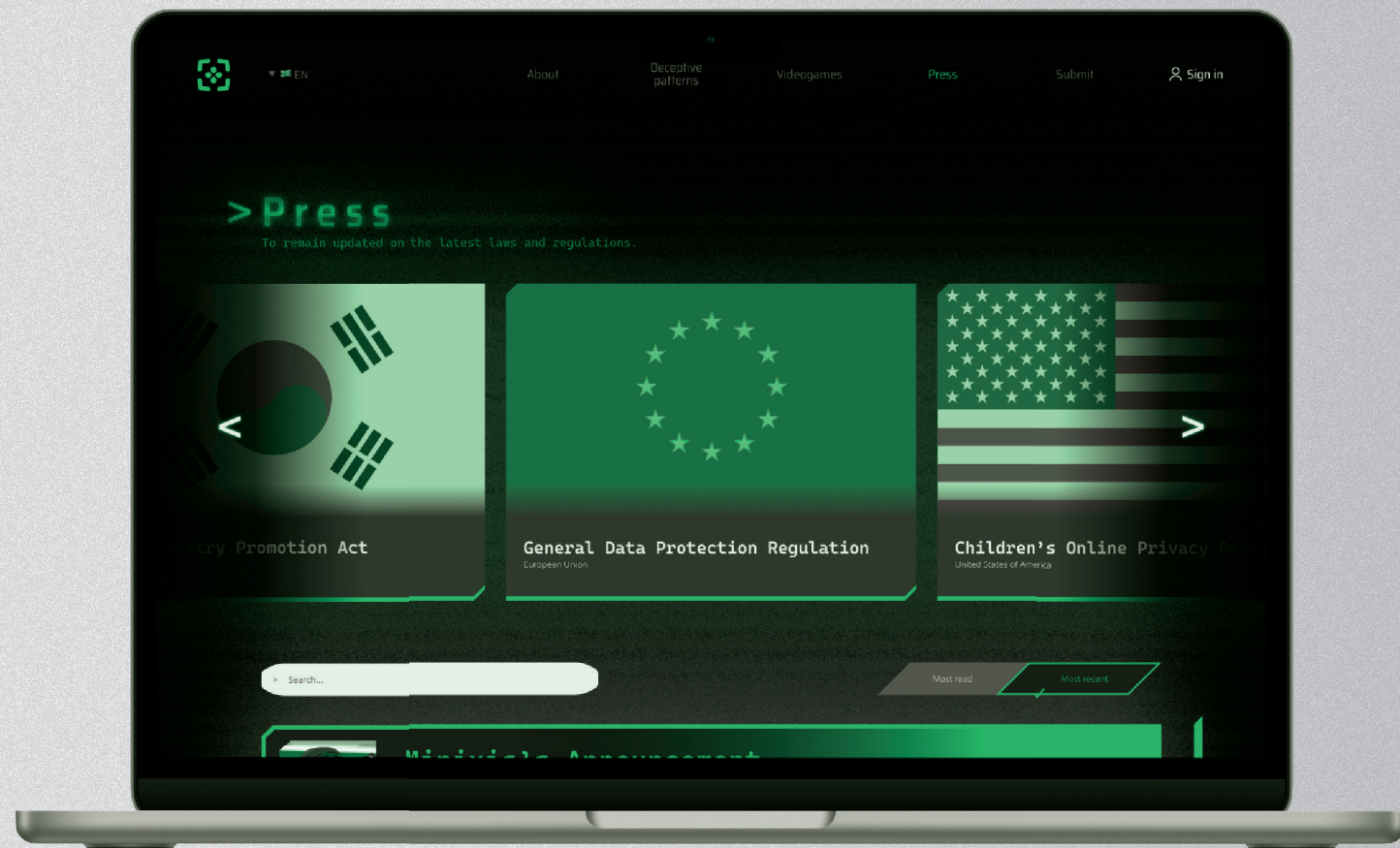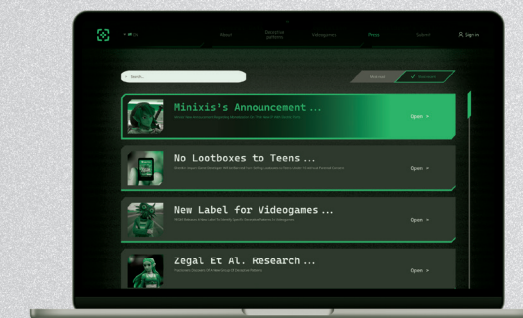
Fig. 61, on the left: the
website's press page.

> > Press

The 'Press' page starts with the carousel, where each card's image is the flag of the government body involved.

The search area downwards is identical to the page that hosts all the registered videogames.

Fig. 62, on the right: the
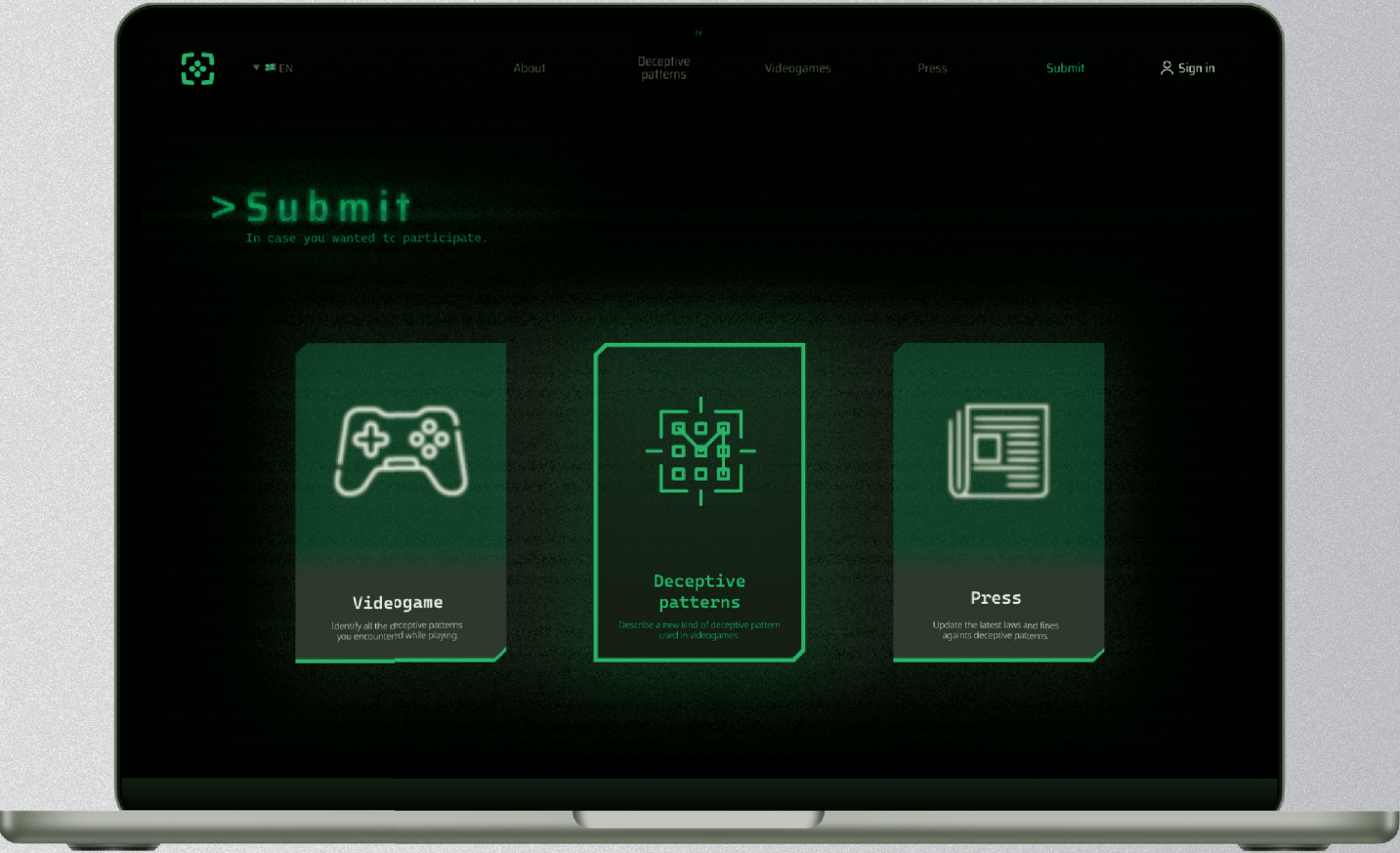continuation of the web-
site's press page.

Fig. 63, on the left: the
website's submit page.

> > Submit

The 'Submit' page is still   icons related to the form they
divided in 3 columns.   redirect to.
Each one with a card that,
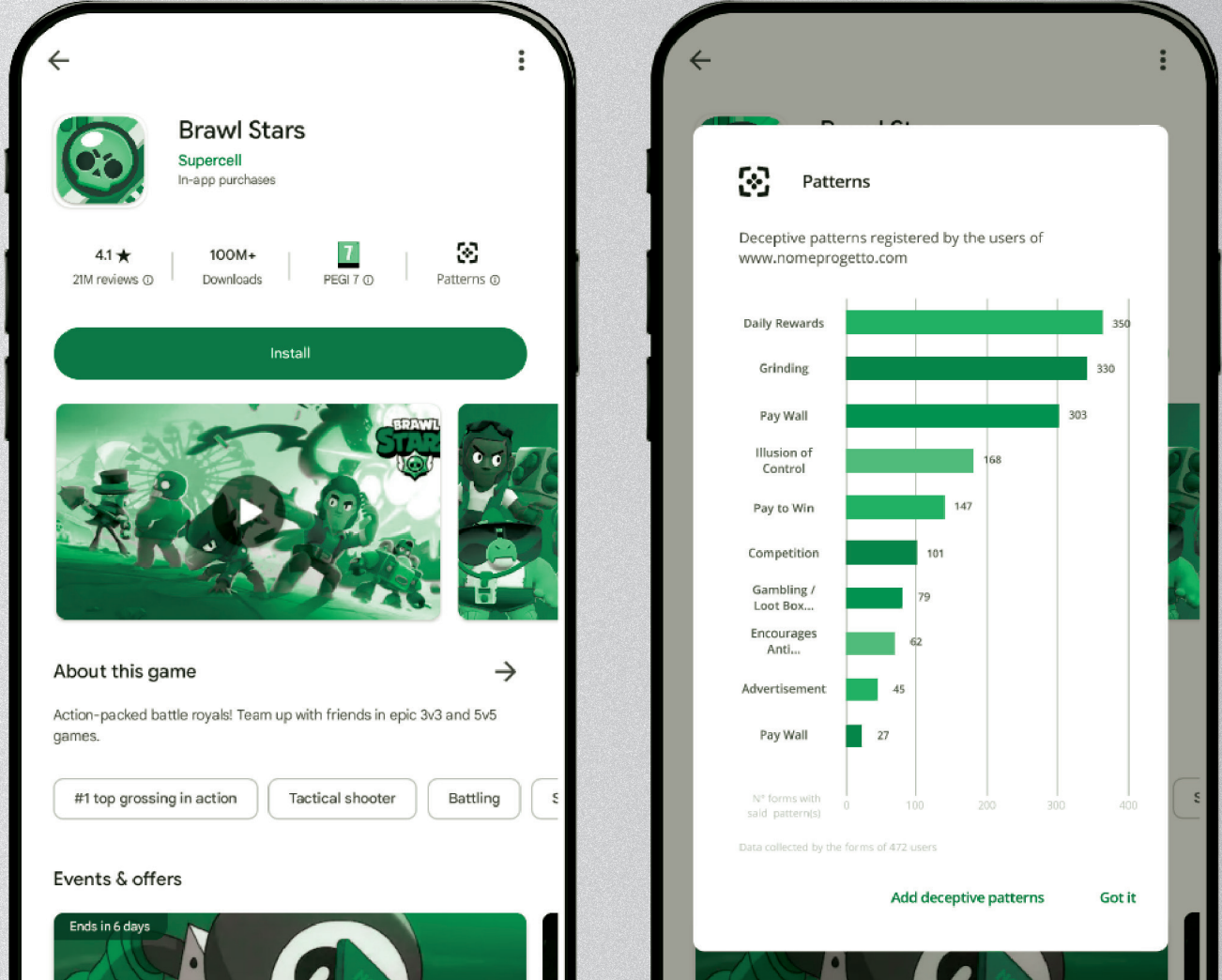instead of an image, have

Fig. 64, on the left: the website's touchpoint on one of Google Play Store's video-ogames.

> > Other touchpoints

Two touchpoints have been developed to show how users can interact with the project outside its main website: one for Google Play Store and one for Steam.

Both touchpoints do not follow PatternScanner's

branded look, but the one developed for the platform they are implemented into.

This is done to not make the graphs look like an 'hindrance' to the players: players could refuse to use them, interfering with the project's mission.

By implementing them in an non-intrusive way, players can gradually learn to accept them as tools that they can freely use without any pressure.

> > > Google Play Store

On a videogame's page, a new button called 'Patterns' with PatterScanner's logo can be found near its age rating:

by clicking on it, the users can see a list of the most registered deceptive patterns for that videogame.

Two buttons can be found at the bottom, with one that leads to the form for said videogame.
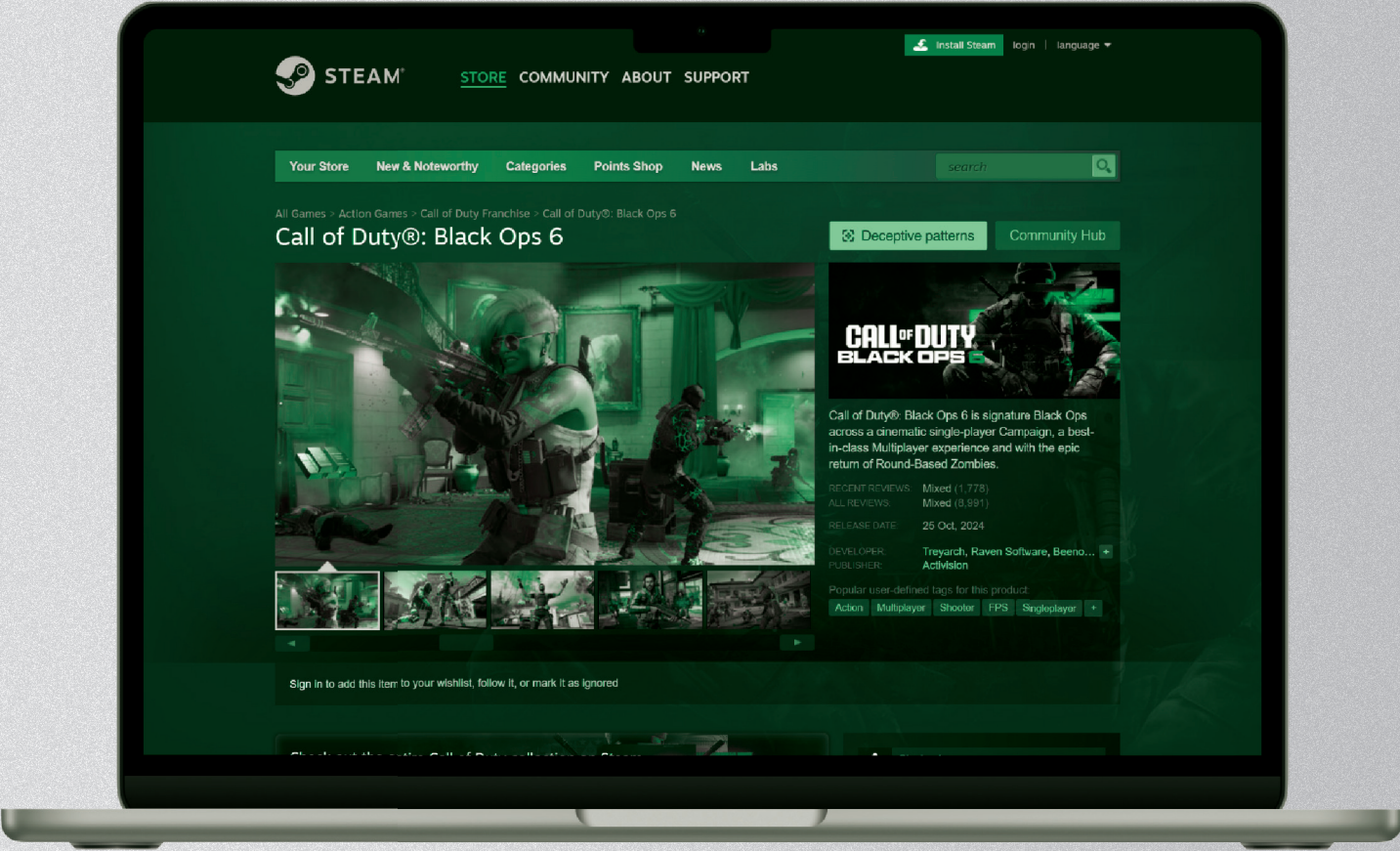
Fig. 65, on the left: the
website's touchpoint on one
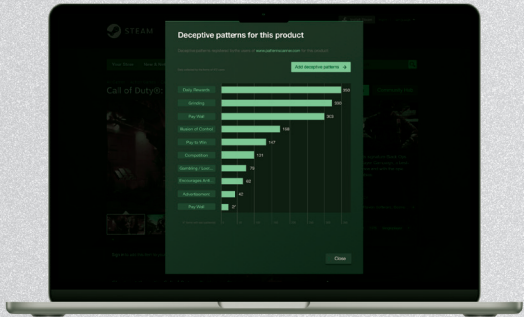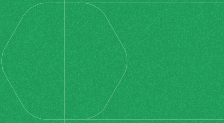of Steam's videogames.

> > > Steam

Similarly on Steam, when a user will visit a videogame's page, a new button called 'Deceptive Patterns' with PatterScanner's logo will be found nearby the already existing 'Community Hub' button: by clicking on it, the users will see an overlay with a list of the most registered deceptive patterns for that videogame.

An highlighted button will call the users into filling a form for said videogame themselves, while a link in the description makes the source of this data (the PatternScanner website) clear to every user who is still not aware of the project.

Fig. 66, on the right: the
continuation of the web-
site's touchpoint on one of
Steam's videogames.

Conclusion

> Conclusions

The study addressed the need of fighting implementation of deceptive patterns in videogames with the proposal of a website specifically designed around the needs of all most influential parties in the matter: game publishers and government bodies, with the addition of players.

Also, the results and considerations that have led to the identification of these parties could help every person interested in deceptive patterns, by giving them a clearer view in this enmeshed landscape.

This thesis, with the use of 'videogame industry' has always only addressed AAA videogame companies (exception being made in the review research, were videogames developed from other types of companies were also evaluated): a research on AA and indie companies and how they implement deceptive patterns could lead to interesting comparisons to gain a more nuanced view on how much power do the game developing and publishing hold in the matter.

Similarly to the actions that led researchers to reprimand practitioners, this thesis made a more intensive use of practice and subjectivity rather than theory, to the point of re-adapting some definitions of deceptive patterns based on the declarations obtained in user reviews: it is not the intention of this thesis to belittle the work that researchers have done on the subject, since it is thanks to them that today we can possess both terms and tools to address this issue.

Regarding user reviews, it can be recognized that the sample of selected reviews may be considered small to try to define the opinion of a group of people as large and heterogeneous as videogamers: further research, done with a bigger sample of reviews and a more 'stringent' application of the definitions given by the theory (or maybe even by using two or more lists of deceptive patterns and compare them) could lead to a better overall vision on player's opinions.

Such research would also show whether the website, since it would also be able to collect large data and carry out these comparisons, would actually be effective in achieving the expected objectives or whether it is necessary to move towards other directions.

> Webography

Against "Dark Game Design Patterns" - White Rose Research online. (n.d.). https://eprints.whiterose.ac.uk/156460/

Arts, E. (2024, November 5). *About EA - Electronic Arts.* Electronic Arts Inc. https://www.ea.com/about

Arts, E. (2021, April 26). *Comments on recent FIFA Ultimate team media reporting.* Electronic Arts Inc. https://www.ea.com/news/comments-on-recent-fifa-ultimate-team-media-reporting?setLocale=en-us

Ashcroft, H. (2024, July 9). *How much does it cost for all the Sims 4 DLC?* TheGamer. https://www.thegamer.com/the-sims-4-base-game-all-dlc-cost/

Authority, C. a. M. (2023, October 13). *Microsoft / Activision Blizzard merger inquiry.* GOV.UK. https://www.gov.uk/cma-cases/microsoft-slash-activision-blizzard-merger-inquiry#final-report

BBC News. (2018, April 26). *Video game loot boxes declared illegal under Belgium gambling laws.* https://www.bbc.com/news/technology-43906306

Bongard-Blanchy, K., Rossi, A., Rivas, S., Doublet, S., Koenig, V., & Lenzini, G. (2021). "I am Definitely Manipulated, Even When I am Aware of it. It's Ridiculous!" - Dark Patterns from the End-User Perspective. *Designing Interactive Systems Conference, 763–776.* https://doi.org/10.1145/3461778.3462086

Brignull, H., Leiser, M., Santos, C., & Doshi, K. (2023, April 25). *Deceptive patterns – user interfaces designed to trick you.* deceptive.design. Retrieved April 25, 2023, from https://www.deceptive.design/

Contributors to Wikimedia projects. (2024, November 6). *Design*

pattern. Wikipedia. https://wikipedia.org/wiki/Design_pattern

Deceptive Patterns - about us. (n.d.). Deceptive Patterns. https://www.deceptive.design/about-us

DarkPattern.games » Dark gaming patterns. (n.d.-b). DarkPattern.games. https://www.darkpattern.games/patterns.php

DarkPattern.games » Gambling / Loot boxes. (n.d.). DarkPattern.games. https://www.darkpattern.games/pattern/38/gambling-loot-boxes.html

DarkPattern.games » Monetary dark patterns. (n.d.). DarkPattern.games. https://www.darkpattern.games/pattern/2/monetary-dark-patterns.html

DarkPattern.games » Pay Wall. (n.d.). DarkPattern.games. https://www.darkpattern.games/pattern/47/pay-wall.html

Eskelinen, E. (2021). *Dark design patterns : what are the next steps towards more ethically designed digital products and services?* Theseus. https://www.theseus.fi/handle/10024/476195

Genshin Impact – Step into a Vast Magical World for Adventure. (n.d.). https://genshin.hoyoverse.com/en/company/terms

Gray, C. M., Chen, J., Chivukula, S. S., & Qu, L. (2021). End user accounts of dark patterns as felt manipulation. *Proceedings of the ACM on Human-Computer Interaction, 5(CSCW2), 6.* https://doi.org/10.1145/3479516

Gray, C. M., Kou, Y., Battles, B., Hoggatt, J., & Toombs, A. L. (2018). The Dark (Patterns) Side of UX Design. *CHI '18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (pp. 1–14).* https://doi.org/10.1145/3173574.3174108

GuyNumber5876. (2022, July 21). *About microtransactions and whales* [Online forum post]. Reddit. https://www.reddit.com/r/pcgaming/comments/wcxc10/about_microtransactions_and_whales/

John. (2022, October 25). *EEDAR Zatkin_ Geoffrey_Awesome.pd*[[Slide show]. SlideShare. https://www.slideshare.net/slideshow/eedar-zatkingeoffreyawesome-pdf/253791542#48

Johnson, E., & Ivany, K. (2021, April 26). *Video game giant EA steering players into loot-box option in popular soccer game, insider says.* CBC. https://www.cbc.ca/news/gopublic/fifa21-loot-boxes-electronic-arts-1.5996912

Liu, S., Liu, C., Gong, X., & Feng, H. (2024). *Game Practice about Dark Patterns - Evoking Conversations on Dark Patterns in the Form of Game Design.* DIVA. https://uu.diva-portal.org/smash/record.jsf?pid=diva2%3A1870315&dswid=675

Morelli, C. (2022, July 8). *Videogiochi, le loot box nel mirino delle autorità [Videogames, loot boxes in the view of the authorities].* Wired Italia. https://www.wired.it/article/videogiochi-loot-box-regole-consumatori/

Nielsen, R. K. L., & Grabarczyk, P. (2018). Are Loot Boxes Gambling? Random reward mechanisms in video games. 2018: *Proceedings of DiGRA 2018 Conference: The Game Is the Message.* https://doi.org/10.26503/dl.v2018i1.970

offsky. (2019, August 26). *Dark Patterns in Gaming* [Online forum post]. Reddit. https://www.reddit.com/r/gamedesign/comments/cvqyw7/dark_patterns_in_gaming/

Palumbo, A., & Palumbo, A. (2017, October 12). *PEGI on Loot Boxes: We Can't Define What's Gambling, Only A Gambling Commission Can.* Wccftech. https://wccftech.com/pegi-loot-boxes-cant-define-gambling/

Park, S., Denoo, M., Grosemans, E., Petrovskaya, E., Jin, Y., & Xiao, L. Y. (2023). Learnings From The Case of Maple Refugees: A Story of Loot Boxes, Probability Disclosures, and Gamer Consumer Activism. *Mindtrek '23: Proceedings of the 26th International Academic Mindtrek Conference,* 267–278. https://doi.org/10.1145/3616961.3616963

PEGI age ratings. (n.d.). Pegi Public Site. https://pegi.info/page/pegi-age-ratings

Rowland, O. (2023, June 21). *Video game designer: job description.* Targetjobs. https://targetjobs.co.uk/careers-advice/job-descriptions/video-game-designer-job-description

The PEGI Code of Conduct. (n.d.). Pegi Public Site. https://pegi.info/pegi-code-of-conduct

Toto, S. (2012a, March 24). *Six Japanese*

social gaming companies form Council to Self-Regulate Monetization [Social Games] – Kantan Games Inc. CEO Blog – from Tokyo, Japan. https://www.serkantoto.com/2012/03/24/japan-social-game-makers-self-regulation-council/

Toto, S. (2012b, May 9). *"Kompu Gacha" social game mechanic is history, Here's how it all went down [Social Games] – Kantan Games Inc. CEO Blog – From Tokyo, Japan.* https://www.serkantoto.com/2012/05/09/kompu-gacha-dena-gree-history/

Toto, S. (2012c, May 18). *It's official:*

Government regulates Japan's social gaming industry over Kompu Gacha [Social Games] – Kantan Games Inc. CEO Blog – from Tokyo, Japan. https://www.serkantoto.com/2012/05/18/gacha-regulation-official/

VIDEO GAMES EUROPE. (2023, December 21). *Our board - VIDEOGAMES EUROPE.* VIDEOGAMES EUROPE. https://www.videogameseurope.eu/about/our-board/

Wallace, F. (2019, March 8). *Globalization and the gaming industry.* HeadStuff. https://headstuff.org/entertainment/gaming/

globalization-gaming-industry/

What do the labels mean? (n.d.-b). Pegi Public Site. https://pegi.info/what-do-the-labels-mean

Xiao, L. Y. (2023). Beneath the label: unsatisfactory compliance with ESRB, PEGI and IARC industry self-regulation requiring loot box presence warning labels by video game companies. *Royal Society Open Science, 10(3).* https://doi.org/10.1098/rsos.230270

Zagal, J. P., Björk, S., & Lewis, C. (2013). Dark Patterns in the Design of Games. *Presented at the*

Foundations of Digital Games 2013. Retrieved from https://urn.kb.se/resolve?urn=urn:nbn:se:ri:diva-24252

Zendle, D., Meyer, R., Cairns, P., Waters, S., & Ballou, N. (2020). The prevalence of loot boxes in mobile and desktop games. *Addiction, 115(9), 1768–1772.* https://doi.org/10.1111/add.14973

ziptofaf. (2023, January 3). *Publishers may provide far more than a marketing agency. Including but not limited to (but what exactly will* [Comment on the online forum post Game Publishers VS Marketing Agency]. Reddit.

https://www.reddit.com/r/
gamedev/comments/101rc2d/
game_publishers_vs_market-
ing_agency/

QR code leading to the data-
base of reviews chosen from
the online stores.

QR code leading to the Figma
'prototype' file with the
interactive website.