It all starts with a name: Mapping the terms used by researchers to describe gambling-like elements in video games

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Abstract: As the demarcating lines between video gaming and gambling are increasingly blurred due to the embedding of so called "gambling-like" elements as loot boxes and prize wheels in video games, scholarly attention for this phenomenon is on the rise. Yet this strong attention comes with a downside: terminological dispersion. Indeed, the number of terms used to describe the emerging video game features that resemble gambling rapidly grows, and frameworks for naming diversify. This hinders a clear conceptualisation and solid scientific research findings, hampering the drafting of societally relevant recommendations for self-regulation of the industry and policy-making. Our study therefore maps the terminology used by experts from different disciplines studying the convergence between video gaming and gambling in the videogame ecology. It does so through a) an in-depth literature review searching for labels and b) a survey conducted among researchers to gauge for their used and preferred terms to describe the phenomena under study. Our findings point towards an effective circulation of the terms among academic experts, but without inter-expert consensus on their use, nor intra-expert terminological consistency. Some trends are identifiable: the use of terms placing phenomena on a continuum between

gaming and gambling; the salient use of the term *loot box*, albeit not in a catch-all sense, and the attention for the presence of real money transactions. The terminological choices of experts seem to be oriented by distinguishable features: the visual outlook of the games, visual and textual references to gambling, the presence of opaque reward containers, and the visibility of in-game currencies and marketplaces. Finally, we sketch some recommendations for a terminology suited to interdisciplinary research and communication with non-academic stakeholders: treating the concept of *simulation* with caution, using *loot box* in its restrictive sense, being aware of the false feeling of understanding related to the gaming-gambling continuum, recurring to paraphrases to discuss the involvement of real-world currencies, and favouring explicitness.

Keywords: Terminology, Interdisciplinarity, Gambling, Gaming, Convergence.

Introduction

Terminology used in gaming-gambling studies

The blurring lines between video gaming and gambling

Video gaming and gambling are increasingly intertwined, a situation that raises concerns and has received much scholarly attention (De Cock et al., 2018; Drummond & Sauer, 2018; Zendle et al., 2019). Indeed, there is a growing number of easily accessible online video games containing "gambling-like"' elements (Denoo et al., 2023; King at el., 2010). These elements can visually refer to real-world gambling, as do for example simulated slot machines. They can also implement mechanics from gambling, such as in-games 'prizes' offered via randomized reward mechanisms, which help progressing in video games.

A wide range of disciplines, including media and game studies, psychology, prevention studies, and legal research, have begun studying such hybrid products and practices between videogaming and gambling. In addition to this disciplinary diversity, researchers' orientations vary on a spectrum ranging from a focus on (especially young) consumers' protection against potentially harmful content and gambling-related harms (Drummond & Sauer, 2018), to a rather descriptive approach seeing "gamblification" (Brock & Johnson, 2021), or "gamble-play" as a shift within videogame culture (Albarran-Torres, 2018).

The trouble with names

This conceptual broadness testifies to the numerous cultural, economic, and behavioural implications of gambling-like design in video games. Nevertheless, the diversity of perspectives and discourses makes the field of research difficult to grasp. In the first place, it yields uncertainties about which phenomena must be considered and which ones excluded when discussing products situated at the crossroads between video gaming and gambling (Brock & Johnson, 2021). Following Gainsbury et al., we agree

that "one of the current limitations in the field is a lack of consistent terminology used by researchers, policymakers and regulators, the gambling and gaming industries, treatment providers and consumers" (2014: 198, our emphasis). The current study therefore aims at analysing in detail which terminology is used by scholarly experts, for which phenomena, and for what purposes. To this end, we rely on a survey among the scholarly community studying video gaming and gambling convergence.

The issue of naming and defining "gambling-like" elements is crucial. Indeed, coining a name or definition (or selecting the most appropriate among already existing ones) often implies taking an explicit or implicit stance about whether such gambling-like design is societally acceptable, and which socio-political treatment it deserves (see Albarran-Torres, 2018, p. 41) (Note 1). As distinguishing between video gaming and gambling may lead to the application of radically different regulatory frameworks (Declerck & Feci, 2022; Xiao, 2022), legal studies especially have been discussing the sensitivity of such implications. However, the importance and difficulty of establishing an agreement on terminology is a common feature of interdisciplinary research (Leigh & Brown, 2021). What makes the issue even more difficult to untangle in the present case, is the fact that the study of video games (Note 2) has emerged from different disciplinary traditions; respectively humanities and social sciences, and psychology and health sciences (Brock & Johnson 2021).

Moreover, terminology (Note 3) can take on a different function depending on the discipline at stake (Ridge, 1965). For scholars from humanities and social sciences, the purpose of defining gaming-gambling hybrids is mainly to describe new media forms and compare them with already defined ones. Within this framework, media are often described as mental constructs, and the borders between them as shifting, fuzzy and discourse-based (Rajewsky, 2010). Psychology, media psychology and prevention studies, in contrast, need more clear-cut lists of features when it comes to assessing problem behaviour, developing prevention actions, and measuring their effects. As gambling-like elements are at the crossroads of many disciplines, the terminology used to describe them must not only be adequate for discussions within one discipline, but even more so also facilitate clear communication throughout the whole academic community. Besides, given the societal relevance of the matter, such a terminology must also correspond to the discourses of non-academic stakeholders.

Boundary objects and the strive for interdisciplinarity

As a response to this challenge, this study aims to contribute to a gradual strive for interdisciplinarity, along the lines identified by Deterding (2017) in the field of video game studies. Departing from specific views from researchers (intradisciplinarity), then juxtaposing them to discuss their similarities and differences as well as their contribution to the understanding of the issue (multidisciplinarity), and lastly, drafting conclusions for

approaching the topic beyond the disciplinary borders (interdisciplinarity) to even beyond academia (transdisciplinarity).

Following Deterding et al. (2020), we thus consider gambling-like elements in video games (Note 4) as "boundary objects" (Leigh Star, 2010, p. 602). These are concepts flexible enough to be discussed in interdisciplinary groups, but also defined enough to fit specific intradisciplinary purposes of definitions. For this reason, we are particularly interested in how scholars from various disciplines *reflect* on their own choices when naming these elements, and how they negotiate this act of naming as a "strategy" (Bricker, 2014, p. 637). Such a strategy includes positioning themselves and others in regard to scholarly issues (Lttr 13, 2013). Through surveying how scholars name gambling-like elements, what implicit and explicit reasons they have for doing so, and which definitions these terms cover for them, we, firstly, want to provide an overview of these positions and a terminology mapping. Based on this mapping, in addition, we want to highlight paths for more interdisciplinary comprehension in research on gambling-like elements in video games.

Literature review

To explore the diversity of terms used in the field, as well as scholars' opinions about this diversity and orientation strategies, we relied on a literature review and an expert survey among scholars publishing on video gaming and gambling convergence. Our methodology was structured in four phases: 1) a review of the literature to make up an extensive list of terms in use, 2) the collection of a list of experts on gaming-gambling convergence to be surveyed, 3) the preparation and testing of the survey, and 4) the administration of the survey. In the latter, we asked experts about their own terminological choices, their reactions on a terminology list derived from the literature review, and their general positioning towards gambling-like elements.

In the first phase, we identified the terms used for describing the blurring lines between video gaming and gambling through a screening of the relevant literature. Research on the convergence between video gaming and gambling has led to a growing body of literature (Macey et al., 2020). In order to collect relevant and recent articles on the video gaming and gambling convergence, we included 48 articles stemming from psychology and health sciences, media and video games studies and legal research, published between 2010 and 2021. These articles were selected based on prior knowledge and ad hoc database browsing by several co-authors coming from diverse disciplines: game studies, psychology, legal research, and prevention studies (Note 5).

Our general findings from the literature review reveal that, first, the term *loot box* currently attracts much research interest, although within the field of psychology and health sciences the overall term *simulated gambling* dominates. Second, the media and video game studies field oscillate between a generalizing trend, using broad and descriptive terms, and three

particularizing paths. The latter focus respectively on (1) *loot boxes* (using either the term itself or trying to broaden it to cover other kinds of randomized rewards); (2) the proximity of these video games to *gambling* (using compounds containing gambling), heavily relying on the term *simulated gambling*; or (3) the general convergence between video gaming and gambling, expressed in terms as *gamble-play* or *gamblification*. Last, legal research tends to use descriptive terms, such as *gambling-like*. They underline the resemblance to gambling, while paying attention not to fully equate video gaming with gambling, nor to exclude the potentiality of such an equalization between both realms. Therefore, the term *simulated gambling*, which seems to be a candidate for multidisciplinary discussion based on the review of media studies and psychology/health sciences, is currently inadvisable from a legal perspective.

Favouring a name above others means participating in the process of cementing disciplinary vocabularies, and positioning oneself within disciplinary and interdisciplinary discussions. However, this positioning and participation are not always explicitly reflected by the authors. This does not mean that researchers do not reflect *at all* about how to name gambling-like elements, but rather that their reflection expresses itself otherwise. When explicit comments are made, they are often described in a depersonalized way: scholars deplore the "lack of consistent terminology" (Gainsbury et al. 2014, p. 198) or at least "limitations of terminology" (King et al. 2015, p. 216), but without involving themselves in the pursuit of more adequate terms. Reflexivity, we argue, is not absent but rather implicit: an informed decision process is shaped from the review of relevant literature until the act of choosing or coining a name for the discussed phenomena. This is especially true when typologies of gambling-like elements are established (as in Nielsen & Grabarczyk, 2019). Because we think that accessing implicit thought-processes can help to establish a terminology that is shared beyond disciplines, our study will try to visualize these processes.

Method

Identifying terms: systematic screening

After the literature review, the second step of our study consisted in scanning articles for terms pertaining to products and practices from the gaming-gambling convergence. Articles published between 2010 and 2021 and containing both the words "gaming" and "gambling", as well as "video" or "digital" (to avoid papers related to other types of games, such as tabletop games) were included to be scanned. Out of the 30 initially selected publications (full list available on OSF), 20 articles were effectively reviewed, until a saturation point was reached, with no new expressions emerging, except slight variations of already registered terms. In a document shared within the research team, we listed each term referring to products or practices falling into this category. Thereby, we excluded (part

of) titles of individual video games or apps, as well as terms mentioned by authors only to recuse them – as we wanted to explore which terms are effectively used by scholars.

This search resulted in a list of 349 words or word groups, that were then reduced to 37 terms to be used in the naming task via the following steps: suppression of duplicates and merging of highly similar terms (such as 'gambling-like' and 'similarities to gambling'; full list before suppression available on OSF); categorization of the terms based on the type of features they refer to (see Table 1); and selection of representative terms in those categories. This categorization task has been conducted collectively (Note 6) to guarantee coherence and intersubjectivity.

Table 1: Terms used for the naming task

Category	Terms
Gift box with random content	Loot boxes; Random virtual reward containers
Randomness; chance; lottery	Gacha; Purchasable randomised rewards; Random in-game rewards; Random reward mechanisms; Activities with chance elements
Simulation of gambling; structural resemblance to gambling; gambling without real money but valuable rewards	Simulated gambling; The gaming-gambling intersection; Gambling references; Gaming-gambling crossover; Gaming-gambling hybrids; Gambling-like (activities); the blurring of gambling and video games; Gaming-gambling phenomena; Quasi-gambling; Pseudo-gambling; Non-monetary forms of gambling
Gambling; Monetization	Social gambling; Gambling game; Gambling mechanics; Gambling-play; Gamble-play; Gamblified digital gameplay; Video game versions of gambling games; Predatory monetization; Gamblification; In-game gambling
Virtual goods	Skin(s) betting
Gambling-themed gaming	Gambling-themed games; Social casino gaming; In-game slot machine; Free-to-play gambling games; Gambling related content/gambling content
Other	Demo, practice, or free play mode of online casinos; In-game wagering

Selection and contacting of experts

After the screening of a multidisciplinary literature review on gambling-like elements, we proceeded to the selection of the experts whom we wanted to survey about their naming and defining preferences, as well as about their familiarity with terms from the literature, and their attitude towards gambling-like elements in video games. We considered individuals having published (as sole authors or within an author collective) at least one

peer-reviewed scientific paper or academic monography on the video gaming-gambling convergence. We chose Google Scholar as a database to search for scientific papers, given its overall high corpus of scientific references and the fact that it also covers most of the references present in other prominent databases (Martín-Martín et al., 2021). To identify articles on either *video gaming* or *digital gaming* (both terms being frequently used as synonyms) while also dealing with *gambling*, we used the Boolean input "gaming gambling video OR digital". Notably, Google Scholar implicitly considers typographic space marks as an *AND* sign. The precision *digital* or *video* served to exclude articles on other types of gaming, for example tabletop games, and to filter out texts using "gaming" only as a synonym for "gambling".

As the search algorithm of Google Scholar is kept secret, and as query search does not always lead to exactly the expected results (Martín-Martín et al., 2021), we performed a check of the retrieved documents: when the title of the document was deemed suspect (for example when it referred only to one of both practices), we relied on its abstract to decide whether to maintain or exclude it from our sample. Ten papers were excluded this way. In addition, two texts (one editor statement and one book review) were excluded for not being peer-reviewed, nor intended at being peer-reviewed in the near future.

The questionnaire was sent by e-mail between January 2022 and April 2022, together with an information sheet about the study. Unfortunately, numerous e-mail addresses mentioned on scientific papers or on contact pages of researchers were incorrect or inactive. In those cases, we used other means of contacting the researchers (LinkedIn, Twitter, or contact forms on personal or institutional websites) and asked them for an alternative e-mail address.

In a first step, only first authors were taken into account, resulting in a list of 112 potential respondents, of which 10 could not be contacted due to missing contact data, and 1 was excluded because they were part of our own research team. This step resulted in 14 answers. The low response rate (13.86%) of the first round of contacting led us to perform a second search, in which we also included co-authors, resulting in a list of 91 extra scholars to be surveyed, of which nine could not be contacted (Note 7). In both rounds, two reminders were used. As soon as we began receiving answers to our survey, we also used snowball sampling, asking our respondents if they could provide us with names of other scholars working in the field of video gaming and gambling. This way, 19 more scholars were contacted, resulting in a total of 202 contacted individuals. Among this total, 46 started the survey, and 29 of these 46 completed it. As we only considered complete questionnaires for analysis, we thus had a response rate of 14.35%.

Sample description

Our sample appears fairly balanced in terms of self-reported gender, researcher seniority and country of origin. Of the 29 experts who completed

the survey, 16 identified themselves as male and 12 as female. Ten participants indicated to originate from non-Anglosphere countries, although only one participant also published in a language other than English. Participants self-identified as leading researchers (n=8), established researchers (i.e. researchers who have developed a level of independence; n=10), recognized researchers (i.e., PhD holders or equivalent who are not yet fully independent; n=3) and first-time researchers (n=7). The majority of these researchers were dependent on either personal or public funding (n=21), a minority on a mix of both public and private funding (n=6), and one on private funding only (n=1). Two participants indicated to have been working in the video gaming industry, while two other participants stated that they still do.

In terms of disciplines, the vast majority of participants (n=18) situated themselves within the field of psychology and health sciences, as opposed to media and video game studies (n=3), law, business and management studies (n=3), gambling studies (n=2), and sociology and social work (n=1) (Note 8).

Measurement instrument

After agreeing to an informed consent and filling out questions about their socio-professional profile (identified gender, seniority level, research field), respondents filled out the English language questionnaire, consisting of six parts that were presented in the following order:

(1) a naming task presenting participants with screenshots of phenomena mixing video gaming and gambling, asking them how they would name what they saw;

(2) open questions inviting our respondents to add names and words that they link with phenomena at the intersection of video gaming and gambling;

(3) a familiarity task presenting a list of expressions from our literature review and asking respondents to what extent they are familiar with each term, on a seven-item Likert-scale (ranging from 1 = "very unfamiliar" to 7 = "very familiar");

(4) a definition task asking participants to define concepts retrieved from the literature review;

(5) an open question asking if participants thought of other terms related to video gaming and gambling while filling out the survey, especially in languages other than English;

(6) a question relating to the experts' attitude towards the phenomena described in the survey, ranging from 'very negative' to 'very positive', followed by an open question about why they held this attitude;

Of all the tasks in the survey, the naming task necessitated the use of prompt materials. Although in an ideal world, we would provide the participants with the video games and apps themselves, this was not practically possible within the framework of an online survey. Therefore,

we decided to use screenshots as the prompt material, which, we acknowledge, is a reduction in semiotic complexity. However, even on a still screenshot, several interactive elements can be detected because of the visual affordances that they contain. Buttons, hyperlinks, or visual elements typically associated with the same in-game action are recognized by (most of the) players and associated with the corresponding actions. For a comparable approach to using screenshots as a way of understanding game design, see Jørgensen (2012). In that sense, static pictures from interactive media can be decomposed in visual, textual, and interactive elements. On the micro-level, screenshots thus consist of the multimodal addition of multiple minimal elements belonging, each of one bearing its own communicational value.
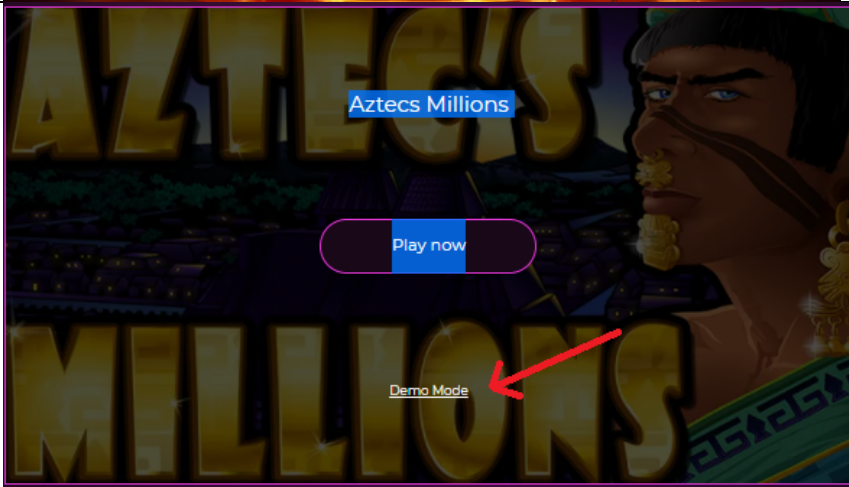
Participants were successively presented screenshots from six video games, apps and websites containing elements that are or can be considered to be gambling-like, chosen based on prior work by the research team (see Denoo et al., 2023; Denoo et al. 2024; Grosemans et al., 2024) and on the literature review. The screenshots were accompanied by the titles of the video games (see Table 4). To display some variety in terms of platform, type of device, and gambling-like elements, we opted for the PlayStation version of FIFA 21 (a football game with the option of buying player card "packs"), the computer version of ROBLOX (a construction game featuring "eggs" with random content), the iOS version of SLOTOMANIA (a slots game), CSGO EMPIRE (a third-party website allowing for betting with items from COUNTER STRIKE: GLOBAL OFFENSIVE), the iOS version of HUUUGE CASINO SLOTS (a collection of casino games set in a virtual casino), and the demo version of the real-money casino game AZTEC'S MILLION SLOTS (part of VegasSlotsOnline.com).

Related to each screenshot, we asked participants the following series of questions: First, "Which word or expression would you use to name it?"; second, "Do you use alternative names for it? If so, please mention it.", with the "it" being introduced as "a situation or a product displaying characteristics of both gaming and gambling activities"; third, "Are you aware of words or expressions which other researchers use to name it? If so, please mention them."
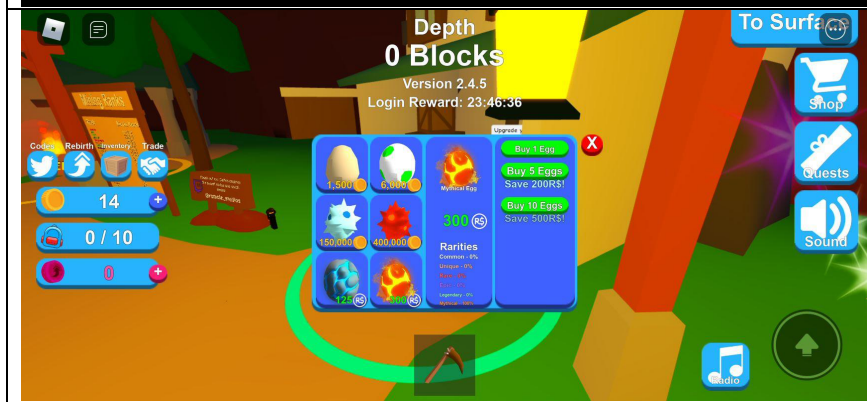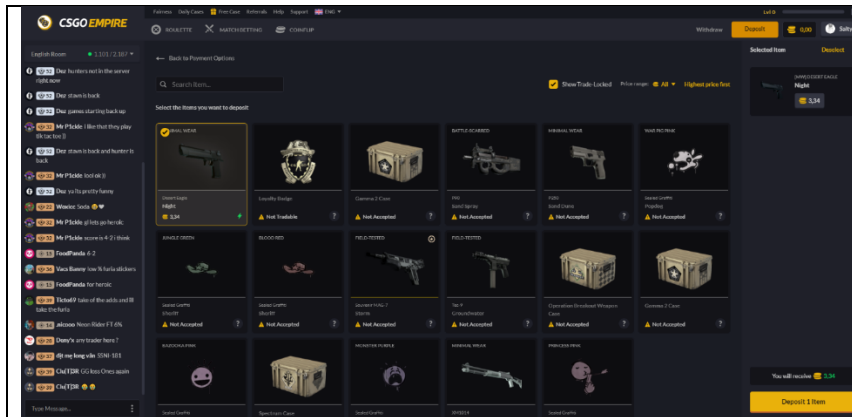
Table 4: Screenshots used for the naming task

	HUUUGE CASINO SLOTS (Huuuge Games / Play Together, since 2015)
	Demo mode of AZTEC'S MILLIONS SLOTS, a slot app on VegasSlotsOnline.com
	ROBLOX (Roblox Corporation, since 2006)

	CGSO EMPIRE, a third-party platform for skin-gambling of items from *Counter-Strike: Global Offensive* (Moonrail Ltd., since 2016)
	FIFA 21 (Electronic Arts, 2020)
	SLOTOMANIA (Playtika, since 2011)
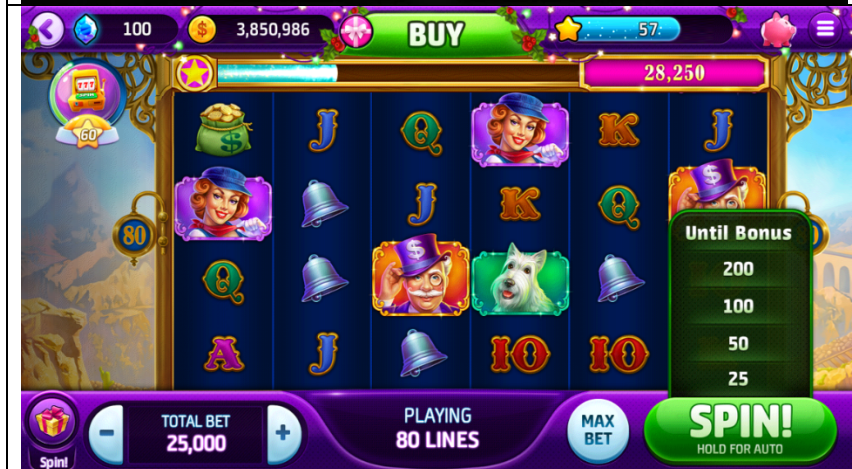
Analysis

Most of the data gathered within our survey was qualitative. However, two tasks, namely the familiarity task and the attitude evaluation task, were quantitatively assessed to obtain descriptions of possible tendencies of the attitude towards gambling and the familiarity with particular terms identified in the literature.

As for the qualitative data analysis, we paid attention to trace back reflection in our experts' thinking and discourse. We did so by screening

their open answers for verbal traces of reflexivity following the approach by Gibson et al. (2023), who propose a theoretical framework to categorize typical markers of reflexivity in English language, understood as "*interactions* between the author and their experiences" (p. 354, italics in the original) in the form of a "'bending back' of thought, feeling and experience" and "an ongoing evaluation about what is best, now and in the future discerned from the many role options in social contexts" (p. 355).

Ethics

Prior to the launch of the survey on 25 October 2021, we obtained ethical approval (G-2021-3439-R2(AMD) by the Social and Societal Ethics Committee at KU Leuven. This approval is in accordance with ethical guidelines detailed in the 1964 Helsinki Declaration or any of its succeeding amendments. Together with the link to the survey, contacted experts were provided with an information sheet about the survey, and an informed consent document. When clicking on the link to the questionnaire, respondents were provided once again with a short version of the information sheet, together with links to the informed consent document and to an explanation about data processing. Before answering the questionnaire, each respondent must acknowledge that they agreed with these conditions.

Results

Reflecting about gambling-like elements

Concerning traces of reflection in our experts' comments considered as a whole, it appears that they navigate between two levels of argumentation: the (inter)personal and the collective. When they argue with respect to the (inter)personal, they concentrate on their own intellectual positioning among their peers. One frequent way of doing so is through using summarizing comments that refer to previous attempts at a definition and categorization of relevant terms by peers. Sometimes, respondents do so to express their knowledge of terms used by peers, as illustrated by the following excerpt from our survey data: "In previous years, it may have been described as "simulated gambling"". Such *summarizing* sentences underline the knowledge that the expert has of the past developments and the current state of their field.

Yet in most cases, comments are of *criticizing* nature: experts often judge that the terms presented are not anymore in adequation to the current state of the relationship between video gaming and gambling. In that respect, a respondent thinks that esports gambling is "a problematic term, as it suggest[s] that gambling [i]s related specifically to the context of esports, rather than video games in general". Sometimes, experts doubt the very conceptual validity of a term; one respondent even judges the term *video game versions of gambling games* 'non-sensical'.

As a reaction to the terms they dismiss, respondents signalize how they name specific gaming-gambling features themselves and argue about why their own terminology is more adequate. Some argue on the level of the extension of terms, deeming their own use of terms to be more precise or, on the contrary, all-encompassing. Others argue on the level of actuality, considering for example that the term *loot box* is currently more appropriate than *simulated gambling*. Much as the summarizing sentences, such pieces of criticism serve the expert's stabilization on the interpersonal level. They establish the utility of the expert's work (as there is something to improve in the field) and the primacy of their output (as their own terms are believed to have more to offer than previous or concurrent attempts).

Our questionnaire did not ask respondents explicitly to underpin their decisions or remarks based on research. Therefore, it is not surprising that most of them do not develop their theoretical reasoning beyond the approval or dismissal of their peers' terms. Quite remarkably, the great majority of those who explain their vision of video gaming and gambling resort to the consideration-stake-reward triad, i.e. the conceptualization of gambling as the wagering of something of value with the possibility of winning a prize (Declerck & Feci, 2022). Although our experts thus base their reflection on common ground, they use these commons to defend different names and definitions – and, which is ironic, to criticize colleagues departing from the same premises.

Nevertheless, experts do not present themselves as omniscient or infallible: there is an abundance of wordings expressing the struggle in finding an appropriate name for a screenshot, or to define a term issued from academic publications. In some cases, experts simply admit their ignorance ("I don't know"), thus *giving up* for this part of the terminological reflection. Next to this, respondents frequently make use of educated guesses when they are not certain (e.g. "I am unsure about this term. I would assume through the word "gamblified" that it refers to video games that are increasingly including randomized reward"). A special form of this *guessing* strategy is when respondents indicate that they will then recur to general concepts such as "gaming", "gambling", or "loot box".

Not all experts search for reasons for their hesitations. Yet when they do, respondents refer in some cases to purely material, instrumental causes, such as the lack of context or precision of the pictures displayed. More interestingly, they can also fall back on the strategy of *criticizing*, deploring the lack of coherence of the terms that they are asked to define, which is another way of pointing at shortcomings in their peers' work.

Experts can also shift from the interpersonal to the collective level to justify their own lack of competence or familiarity with the phenomena presented. Several experts explain that they are "not familiar with this particular game", emphasizing that the terms are outside of their area of specialization. When doing so, they fragment the larger ensemble of gambling-like features into smaller entities, thus *specializing* gaming-gambling research into specific (one could say: niche) subinterests. This

attitude has a corollary in the complaints about the lack of "consideration for the subtleties of the practices themselves" and the call for more nuanced approaches, against a "black and white" vision. Reminding that "there are differences in legal definitions of gambling/gaming in different countries" is a variant of the *specializing* argument.

On the collective level again, experts can focus on the ever-evolving character of their field to explain the(ir) difficulty of naming, thereby *temporalizing* terms and definitions. The surveyed scholars do not judge this character the same way. While some merely state that the terms they have proposed (though well-constructed and -suited, as discussed before) "have not caught on in popular usage", others see it as the teething problem of a young discipline. Regarding the role of research in answering this issue, some believe that it should strive to "a better established standard of the terms that are used", while another group pleas for a constant updating of the terms to keep up with the pace of evolution of products. Generally speaking, however, our findings clearly show that experts believe that more in-depth academic research is needed on the intersection of video gaming and gambling. This again can be read as a wish to consolidate both the personal work of scholars, and their collective disciplinary existence.

This call for more research resonates with the trends highlighted in the answers related to the experts' attitude towards the convergence between video gaming and gambling. Participants from all disciplines seemed overwhelmingly negative (68.97%); the most salient perceived issues being the vulnerability of children and adolescents, the normalization of engaging in risky behaviour, and the lack of regulation that allows unethical and exploitative video games to exist in the first place. These social and health issues are the main reason put forward by the surveyed scholars to intensify research in the gaming-gambling field.

However, one in five participants (20.69%), especially first-stage researchers, chose to withhold their judgment because they wanted to remain unbiased or scientifically neutral, because they wanted to leave ample space for counterarguments, or because they did not feel knowledgeable enough to formulate an opinion on the matter. Remarkably, only one respondent deemed the convergence of video games and gambling an entirely positive development, stating that chance is and has always been inherent to both media (Note 9).

Familiarity and naming tasks

The findings from the **familiarity task**, for which participants rated selected terms from the literature review on a scale from "very unfamiliar" (1) to "very familiar" (7), indicated some trends.

Seven out of 37 terms are close to the "very familiar" pole, with a mean score higher than or equal to 6: *gambling game* (M = 6.69); *loot boxes* (M = 6.40); *gambling-like (activities)* (M = 6.21); *the blurring of gambling and video games* (M = 6.07); *random in-game rewards* (mean = 6.00), *skin(s) betting* (M = 6.00), *free-to-play gambling* (M = 6.00).

Also still popular, are the 21 terms that got a mean familiarity score higher than or equal to 5. Some examples from this category are *gambling related content* (M = 5.85); *gambling mechanics* (M = 5.62); *in-game slot machine* (M = 5.50)*; predatory monetization* (M = 5.43); *demo, practice, free play mode of online casinos* (M = 5.00).

Seven terms were assessed as slightly above the neutral point in terms of perceived familiarity, with a mean score above 4 and below 5: ; *gaming-gambling phenomena* (M = 4.87); *gaming-gambling crossover* (M = 4.79); *gambling-play* (M = 4.77); *gaming-gambling hybrids* (M = 4.50); *gamble-play* (M = 4.27); *gamblified digital gameplay* (M = 4.38); *pseudo-gambling* (M = 4.07).

Two terms turned out to be slightly unfamiliar to our respondents, with a mean score between 3 and 4, namely *quasi-gambling* (mean = 3.71) and *in-game wagering* (mean = 3.83). Table 2 lists the results of the familiarity task.

Table 2: Familiarity scores for each term

Term	Mean	SD
Gambling game	6.69	0.630
Loot boxes	6.40	1.056
Gambling-like (activities)	6.21	1.122
The blurring of gambling and video games	6.08	0.954
Random in-game rewards	6.00	0.953
Skin(s) betting	6.00	1.758
Free-to-play gambling games	6.00	1.683
Randomized virtual items	5.92	1.188
The gaming-gambling intersection	5.87	1.125
Gambling related content	5.85	1.573
In-game gambling	5.83	1.749
Social casino gaming	5.75	1.712
Activities with chance elements	5.71	1.383
Gamblification	5.67	1.723
Random reward mechanisms	5.64	1.151
Gambling mechanics	5.62	1.710
Gambling-themed games	5.62	1.557
Purchasable randomised rewards	5.57	1.505
In-game slot machine	5.50	1.698
Predatory monetization	5.43	1.950
Social gambling	5.33	1.877

Random virtual reward containers	5.29	1.978
Simulated gambling	5.29	2.054
Video game versions of gambling games	5.23	1.689
Non-monetary forms of gambling	5.15	1.994
Gacha	5.07	2.282
Gambling references	5.00	1.881
Demo, practice, free play mode of online casinos	5.00	2.219
Gaming-gambling phenomena	4.87	2.416
Gaming-gambling crossover	4.79	2.326
Gambling-play	4.77	2.386
Gaming-gambling hybrids	4.50	2.504
Gamblified digital gameplay	4.38	2.187
Gamble-play	4.27	2.463
Pseudo-gambling	4.07	2.556
In-game wagering	3.83	2.517
Quasi-gambling	3.71	2.054

Results from the familiarity task thus leave the impression that a large group of terms are very to fairly familiar to most scholars, and that a much smaller group of terms are imperfectly or poorly understood. Looking at the naming task allows for nuancing and problematizing this first impression.

In the following, the terms actually used by our respondents are put between single quotation marks (to differentiate them from citations from literature, for which we used double quotation marks), whereas our own generalizations of these terms are in italics. The results from the naming task show that a few terms are used by participants to name only one of the screenshots: *skin(s) betting* is only and massively used for the platform CSGO EMPIRE, compounds of the word *pack* (such as *FIFA pack* or *preview pack*) only for FIFA 21, and *demo mode* only for AZTEC'S MILLION. Interestingly, *gamblification* is used only once – in "'gamblification system', referring to CSGO EMPIRE – in the naming task, despite its prominence in scholarly literature. As the familiarity task shows that many experts are familiar with the term 'gamblification', this singularity is perhaps related to the experts' very understanding of the purpose of a naming task. Indeed, they could want to avoid very general terms related to an overall process in the evolution of video games, and to favour terms that they feel are more specific to individual instances of such a process.

Besides those rare cases, numerous expressions are used to describe several screenshots. This suggests that the terms are (partially) equivocal and that their distinctive character is not subject to consensus among experts. Most commonly used are *loot box* for 5 out of 6 screenshots (or even 6, as one participant characterizes SLOTOMANIA as 'maybe a lootbox'); *gaming* or *game* (in some cases preceded by *digital* or *video*) for all prompts; and *gambling*-compounds for 5 out of 6 (with also only one

participant referring to ROBLOX through 'unsure, but it looks like gambling').

While the familiarity task suggested a fluid circulation of terms, it appears that this does not translate into an effectivity of terminology. Nonetheless, terms do not seem to be totally interchangeable. Some inter-expert trends can still be observed, in the sense that some of the used screenshots are more often labelled via the same strategy:

-   FIFA 21 and ROBLOX are more frequently associated with expressions close to the *gaming* pole (and only rarely with expressions assessing a proximity to *gambling*), and with expressions from the *loot box* category;
-   HUUUGE CASINO SLOTS is often considered a *game*, but with modifiers underlining that it also contains *gambling-like* features (with also a minority of assessments as being *gambling*); *loot box* is also mentioned, but less often than for FIFA 21;
-   SLOTOMANIA occupies a middle position, being classified by some experts as (close to) *gaming*, by others as (close to) *gambling*, with only one (or two, as one expert is unsure) mention of *loot box*;
-   the demo mode of AZTEC'S MILLIONS SLOTS is mostly considered close to *gambling* (and rarely to *gaming*), also with only one mention of *loot box*;
-   the platform CSGO EMPIRE is also mostly considered *gambling*, but very often more precisely *skin gambling* (or *skin betting*), and often named in relation to its economic features. As for its classification within the *loot box* category, CSGO EMPIRE can be compared with FIFA 21 and ROBLOX.

From the above, it seems that the question of the distinction between video gaming and gambling is at stake in numerous answers. Besides the compounds of *game* and *gambling* themselves, other terms refer quite unequivocally to gambling activities: 'BET', 'lottery', 'slots', 'slot machine'.

Next to these straightforward classifications, many terms evoke the hybridity of products. They do so by either modifying *game* to acknowledge proximity to gambling, e.g. in 'social casino gaming', 'casino slot game', 'gamblified game', 'online slots gaming', or 'gambling-themed game'. Conversely, *gambling* can be modified to account for proximity to gaming, e.g. in 'skin gambling', 'skin betting', or 'simulated gambling'. Nevertheless, some participants leave the choice open ('gaming or gambling spend') or propose alternative terms opposite to their first choice (an expert uses both 'simulated gambling' vs. 'demo game'; another writes 'online gambling' vs. 'online slot game'). The fact that these references to hybridity are massively used to refer to all screenshots show that distinguishing between video gaming and gambling is difficult, if not often

impossible. Consequently, experts then situate the products in question in an in-between.

Though prominent, the proximity to *gaming* or *gambling* is not the only interest of the surveyed scholars. They also often refer to economic models or features underlying the displayed screenshots: *microtransaction* is used alone or in compounds for 5 out of 6 prompts (only not for AZTEC'S MILLIONS). References to negative marketing strategies ('deceptive marketing', 'bait and switch', 'marketing's trap') are also employed, though in lower numbers. Remarkably, such strategies are not held against CSGO EMPIRE, perhaps for its commercial purpose is so explicit that there is no room for deception.

Among the terms in use, *loot box* is a case on its own. It is massively present, mostly as such, but sometimes also in compounds ('loot box bundle'), as general term subject to precision ('Loot box, specifically "Third-party user generated content loot box"') or as modifier to another term ('video gaming with loot boxes'). Other compounds containing *loot* are also mentioned ('loot crate', 'loot egg', or even 'egg' alone), and used as context-specific synonyms of *loot box* (often to answer the question "Do you use alternative names for it?").

Lastly, this clear-cut report should not obfuscate that numerous answers mix two or more tendencies. Compounds can for example be used to join two different points of view on the same screenshot, with wordings such as 'gaming purchase for a sports app', 'casino slot game, free to play business model', 'children's game with a monetary element'. In the same way, 'video game with loot boxes' joins the concepts *loot box* and *gaming*. Furthermore, participants also take advantage of the possibility of mentioning alternative names: they use it to propose a second terminological framing next to their answer in the first question of the task. For example, a participant names HUUUGE CASINO SLOTS a 'social casino game' in the first question, but puts forward 'randomised monetisation method', 'loot box', 'prize dispenser', 'Gachapon machine', and 'random reward mechanism' as alternative names.

Granted, it is impossible to unmistakably assess why experts choose a given name for a given screenshot. Notwithstanding, we could observe some general patterns. First, the attribution of terms related to *gaming* seems to be favoured by the cartoonish outlook of the picture (such as in HUUUGE CASINO and ROBLOX). Previous knowledge of the software also plays a role: the very popular video games ROBLOX, CSGO, and FIFA 21 were explicitly recognized by numerous participants (who used the title of the game or an expression containing it to name the screenshot), and this recognition seems to lead to a categorization as *gaming*, regardless of the presence of gambling-like elements.

Second, the frequently used expression *simulated gambling* is linked with visual or textual references to the activity of gambling, such as in HUUUGE CASINO, AZTEC SLOTS and CSGO EMPIRE, which display casino tokens, roulette icons, or inscriptions such as 'Jackpot' in golden letters. In

contrast, the screenshot from ROBLOX is never considered *simulated gambling*, though it focuses on random rewards obtained through hatching eggs with various rarities. This is probably due to the fact that it does not contain any direct visual nor textual reference to land-based gambling. Visual and textual references can also encourage experts to use specific names of practices related to gambling: displaying slot reels or the full physical gambling machine leads to compounds containing *slots*, while representations of tickets trigger appellations containing *lottery*. The textual appearance on screenshots of words such as 'lottery', 'free tickets', or 'lines' (referring to slot lines), produces similar effects. In contrast, the excerpts from ROBLOX and FIFA 21 display mechanics similar to lottery, but do not refer visually nor textually to such practices, and thus are not named so by our experts. Next to *simulated gambling, "*gambling-themed game*"* or similar expressions are also associated with visual and textual references to gambling.

Third, regarding names related to *loot box*, it is interesting to observe that, with rare exceptions, they are only used when opaque containers of rewards or in-game items are visible, be they card packs (FIFA 21), closed military cases (CSGO EMPIRE), or eggs to be hatched (ROBLOX). However, this idea of opaque containers is quite extended: even illustrations such as a toy vending machine in HUUUGE CASINO are associated with these names. Even when opacity can be partially or temporarily cleared up, as in FIFA Preview Packs (Note 10), the *loot box* category remains applicable.

Finally, terms related to monetary *microtransactions* are linked with visual or textual references to near-currencies, such as chips, or to intern currencies reminding of real-world monetary values (R$ in ROBLOX, or FUT Coins in FIFA 21). Next to currencies themselves, the visual or textual presence of a marketplace (in ROBLOX or CSGO EMPIRE), or of expressions suggesting the action of buying ('not tradable' in CSGO EMPIRE; 'BUY' in FIFA 21) are also associated with names referring to *microtransactions*.

Definition task

In the definition task, respondents were asked to define six of the 37 terms from the literature review, showing varying degrees of assuredness. In some cases, they used substantives or nominal groups that they deemed to be synonymous to the proposal from the questionnaire: "gamblification", "video game-related gambling", "random reward mechanisms", and "randomized monetization methods". Others came with longer descriptions, that seemed to resort strongly to catch-all terms. In the latter group of responses, the most frequently employed words and variants thereof were the following (see Table 3): "gaming", "gambling", "video", "money", "playing", "randomly", "activities", "elements", "loot", "real", "item", "rewards", "like", "within", "mechanisms", "players", "boxes", "term", "virtual", and "casino". "Gaming" and "gambling" were most frequently used, as were nouns such as "activities", "elements" and "mechanisms" that were exclusively used as part of compound words yet bore little meaning of

their own. Other, more meaningful nouns were "money", "loot" and to a lesser degree "boxes", and "casino".

Table 3: Words used for the definition task

WORD	LENGTH	COUNT	SIMILAR WORDS
Gaming	6	169	Game, games, gaming
Gambling	8	115	Gambling
Video	5	46	Video
Money	5	28	Money
Playing	7	26	Play, played, playing
Randomly	8	26	Random, randomized, randomly, randomness
Activities	10	24	Activities, activity
Eléments	8	22	Element, éléments
Loot	4	20	Loot
Real	4	20	Real
Item	4	19	Item, items
Rewards	7	19	Reward, rewards
Like	4	17	Like, likely
Within	6	15	Within
Mechanisms	10	13	Mechanic, mechanics, mechanism, mechanisms
Players	7	13	Player, players
Boxes	5	13	Boxes
Term	4	13	Term
Virtual	7	13	Virtual
Casino	6	12	Casino, casinos

In analysing the results, we focused on the terms that participants previously indicated to be most familiar with, as displayed by the familiarity task. Our rationale was that if overall familiarity is high among experts (i.e., mean score of 6 or above) for some terms (i.e., "gambling game", "loot boxes", "gambling-like activities", "random in-game rewards", "skin betting", and free-to-play gambling"), then definitions most likely will show a common ground between participants. On a first level of observation, participants seemed in agreement. Upon deeper inspection, however, differing views could be observed. To some, for instance, a loot box constituted an in-game item in the form of a box, chest, card pack or treasure wheel. To others, however, loot box was a mechanic. Moreover, participants disagreed on whether loot boxes were pay-for features, and even the very concept of consideration lacked univocal perspective. On the one hand, distinguishing between paying and not-paying seemed to be difficult, as a *gambling game* was by some respondents explicitly defined as 'played without money', by others as 'using virtual money (bought for real money)' and again by others as video games 'where real world currency is at stake'. On the other hand, because some participants would group very different kinds of investment by players under the same definition, as the one participant who wrote that loot boxes could be obtained 'in exchange for money, watching adds, or playing (or labouring) in the game'. Another

example of a slight but far-reaching difference is the *in-game slot machine*, which most participants defined as a casino slot machine in a video game, whereas one respondent noted that slot machines could also appear 'within another slot machine'.

Next to these cases of sheer contradiction, there were differences in the precision, the focus, and the strategy for decision. When defining 'the blurring of gambling and video games' for instance, some participants provided very short and general answers, such as "a form of gaming-gambling convergence" whereas others relied on longer definitions, including a reflection on typical cases, e.g.,

> "Refers to the increased similarities between underlying gambling concepts (e.g. "usually RNG or chance) and video games. Typically refers to gambling presence in video games, rather than video gaming themes in gambling".

Again, other respondents proceeded by summing up examples of the concept presented, such as "Many of the above activities, plus others such as esports betting, skin gambling, and perhaps fantasy sports betting".

Discussion

The strategic role of terminology

The purpose of our study was to analyse which terminology is used by scholarly experts, for which phenomena, and for what purposes. Before diving into the details of terminology as such and its relationship to the various phenomena, we want to come back to our experts' reflective comments. Indeed, they provide us information about a specific *purpose* of terminological work, namely situating themselves and their own terminological contribution to the field.

To do so, experts rely on diverse strategies. On the one hand, they can summarize the terminological debate, or criticize previous or concurrent terms. On the other hand, they can confess their ignorance of terms used by others. Yet this confession often comes with its justification: either through referring to subdisciplinary areas of expertise within the field, or through emphasizing the ever-evolving character of terminology through time in the gaming-gambling field as a whole.

This tendency to comment on the terminological debate, and to explain difficulties in naming or defining shows that the terminological debate about gambling-like elements in the realm of video gaming is far from over. Hence, the diagnosis by Gainsbury et al. (2014) is still relevant almost ten years later. However, our results add a layer to their remarks: divergences in terminology also seem to serve for scholars as a way of positioning themselves within a field that is still emergent. Coining and defending names is a strategic tool for reclaiming primacy in a discipline. In this view, the much-commented lability of terminology does not speak against the fact that experts still share a vast common ground in their

research, as shows the widespread reliance on the consideration/stake/reward-triad to justify their terminology.

This explains why, in several cases, experts are able to make educated guesses when naming phenomena that they do not know, or to fall back on more general terms relating to video gaming, gambling, or loot boxes. Granted, the field is fragmented and complex, but the frequent comments, even if they are dismissive, by scholars about their peers' terminology show that this terminology circulates, and that peer expertise is taken into account.

The gaming-gambling spectrum… and several alternatives

This circulation does not always lead to efficient communication. There is a jumble of terms used to describe gambling-like elements in video games. Most strikingly, the fact that the same screenshots can be considered akin to gambling by some participants, and similar to video gaming by others is quite symptomatic of the conceptual vagueness of terms.

Generally seen, the question of the distinction between *gaming* and *gambling* seems to be at stake in numerous answers. Specialists tend to situate the prompts that they were shown on a spectrum between video gaming and gambling. For both extremes of the spectrum, participants use the terms *gaming* and *gambling* themselves, or specific practices (such as *lottery*) that are resolutely classified as either video gaming or gambling.

Next to these straightforward classifications, some participants modify the terms *gaming* and *gambling* through using them in compounds evoking hybridity. Such hybrids are thus deemed to be more akin to video gaming, but displaying some aspects of gambling, and vice-versa. Unfortunately, the terms used for such nuances are once again equivocal, and their use is not consequent among scholars. Even individual participants struggle with their own vocabulary, reflecting their hesitation in the names they coin, or proposing two terms that are in contradiction with each other for the same screenshot. Respondents thus seem to lack the terminology to refer to the grey zone around the centre of the gaming-gambling continuum.

It might seem trivial that scholars use *gaming*, *gambling*, and terms that suggest more or less proximity to these practices for devices that we, after all, selected based on this proximity. However, as Kolandai-Matchett and Wenden Abbott (2021) suggest, the two terms participate in opposite framings: while gambling is associated with criminalizing frames, gaming on the contrary is linked with legitimizing frames suggesting entertainment. Naming a given element as either video gaming or gambling can thus result in strongly orienting audiences' view on it.

This being said, the video gaming-gambling spectrum is not the only basis for naming. The surveyed scholars often refer to economic models or features underlying the displayed screenshots, with a strong preference for the term *microtransaction*. References to negative marketing strategies (such as 'bait and switch') also occur. The latter suggests that assessing whether players must pay with real money within a given video game, and whether the video game uses manipulative design to influence player

behaviour, are questions that our respondents ask themselves to direct their choice of a term.

The fact that compound words containing *loot* (such as "loot pack") are mentioned as context-specific synonyms of the term *loot box* suggests that *loot box* is a basis for naming processes as well, next to the video gaming-gambling spectrum, the presence or absence of microtransactions, and of manipulative design features. Yet these strategies for naming are often used together, mixing two or more perspectives. For instance, wordings such as 'children's game with a monetary element' refer to aspects linked to both the video gaming-gambling spectrum *and* the perspective of the economic model.

Triggers for naming

Despite the instability of terms, the hesitations of experts, and the concurrence of bases for naming, some trends still do emerge from the naming task. Some screenshots are more often labelled via the same strategy, or tendentially located on one specific side of the video gaming-gambling spectrum: FIFA 21 and ROBLOX are closer to the video *gaming* pole of the spectrum and with the *loot box* category, and HUUUGE CASINO SLOTS is still mostly considered a *game*, but with modifiers underlining its *gambling* features. SLOTOMANIA occupies a middle position on the video gaming-gambling spectrum, but is only exceptionally considered as *loot box*. In the same way, the demo mode of AZTEC'S MILLIONS SLOTS is seen as close to gambling and even more rarely as loot box. Finally, the platform CSGO EMPIRE is considered in relation to its economic features.

Some visual, textual, and structural aspects from our prompts seem to trigger the use of specific terms. The first trigger is arguably the most straightforward: the presence of visual or textual references to land-based gambling (HUUUGE CASINO, AZTEC SLOTS and CSGO EMPIRE) often triggers the *simulated gambling* appellation, or terms referring to specific land-based gambling activities (such as *lottery* or *slots*). More interestingly, *simulated gambling* is not mentioned anymore at all (such as in ROBLOX) when such references to land-based gambling are absent. Although the term *simulated gambling* is used in the literature to refer to structural similarities with gambling (Griffiths et al., 2014; Derrington et al., 2021), even in the absence of visual references to typical gambling practices, it seems to be used only when the image "looks like land-based gambling".

The cartoonish outlook seems to be a second trigger: when confronted with cartoonish pictures (HUUUGE CASINO and ROBLOX), experts tend to identify the products containing them as (close to) *gaming*. Images that look harmless or fun seem thus to be interpreted as *gaming*, and less as *gambling*, regardless of the possibly gambling-like structural properties of the products. This impact of a harmless outlook on the reception of gambling-related features participates in the camouflage strategies in gambling iconography, as set out by Nicoll & Albarrán-Torres (2022). Beyond the specific effect of (mis)guiding the interpretation of a given app as not being gambling, these authors emphasize how, on a macro-

level, this iconography allows for dodging the exploitative character of media infrastructures and the power imbalance underlying this exploitation (Note 11).

A third trigger seems to rely on the same kind of heuristics: ROBLOX, CSGO, and FIFA 21 are popular game franchises, and several of our respondents mentioned the titles of these games in their answers. For these well-recognized video games, *gaming* is also more frequently used than for non- or less-recognized products. While this can sound trivial, this can have strong consequences related to the abovementioned, positive framing effect of the *game* appellation. Indeed, it raises the concern that gambling-like elements would be less acknowledged, or more easily downplayed when they would appear in franchises that are known to be games. At first glance, assuming that what once was a game franchise, will forever remain pure gaming without gambling, can appear to be a safe mental shortcut. Yet in the context of the rapid evolution of monetization techniques and of gamblification of video games, this shortcut in fact becomes hazardous: one and the same franchise can contain games with and without gambling-like features. Recent work suggests that such differences in the gambling-like status also exists between digital and analogue forms of the same franchise: so do Mattinen et al. (2023) recognize more gambling-like features in the digital collectible cards from the Magic franchise, compared to the analogue version.

The fourth trigger relates to rewards, and straddles visual and mechanical aspects: terms similar to *loot box* are only used to refer to all kinds of (partially) opaque containers of rewards or in-game items (FIFA 21, CSGO EMPIRE, ROBLOX). This observation contradicts the suggested use of *loot box* as a catch-all term for all gambling-like elements, as was suggested in Xiao, Henderson, & Newall, 2020). Given the reliance on screenshots as prompt material (thus on visual media), it is difficult to assess if the reflection was predominantly based on visual features, as in the case of the cartoonish outlook, or rather on the recognition of mechanics. Nevertheless, it seems safe to say that the visual plays a role here as well.

Lastly, displaying visual or textual references to fictitious or near-currencies reminding of real-world monetary values; or a marketplace; or commercial actions (ROBLOX, FIFA 21, CSGO EMPIRE), orient our experts towards terms related to *microtransactions*. They seem to acknowledge that some exchange between real-world currencies and in-game equivalents takes place even if it is not directly displayed on the screenshot.

Definition task: highlighting false comprehension

Defining requires understanding what something is, and what it is not. Participants showed varying degrees of assuredness when asked to define terms from the literature review, as their reflective comments display. Some participants fell back to catch-all terms, among which *gaming* and *gambling* were mostly used, which confirms the reliance upon the gaming-gambling spectrum. Less predominant but still common were

terms such as *money* and *loot box,* where this last term is used as a noun grouping different kinds of products. The term *money* also testifies to the importance of the idea of real value when categorizing media products. This connects to the fact that the triad of consideration, chance and reward is a common ground when participants reflect about their wordage. Lastly, the term *casino* was also frequently used, which could be linked with land-based gambling functions as an important comparatum for virtual, gambling-like products.

Assuming that experts would tend to define with the same words the terms which they are most familiar with, we focused our analysis on the definitions given for terms achieving a high score in the familiarity task. While there was indeed a general similarity between the answers, some differences that can have consequences for inter-expert comprehension must be highlighted. These differences are related to the monetary aspect of gambling-like elements. First, participants do not fully agree as to whether loot boxes are paying items. Second, they have differing views on what counts as a consideration: they for example understand the expression *gambling game* depending on the cases as play with or without real money. Given the abovementioned primacy of the triad consideration, chance, reward in terminological choices, this result is of particular importance.

Our findings also showed that there is a grey zone between the products clearly classifiable as video gaming on the one hand, and as gambling on the other hand. Products in the grey zone appear to be difficult to name or define, which results in equivocal and inconsistent names and definitions. Using such terms to communicate among scholars can lead to a false impression of comprehension and operationalization problems in future research.

Limitations of the present study and recommendations for future research

Our study has some shortcomings. The first one concerns the study in general: the complexity and the sensitivity of the phenomenon under study and the anticipated load to participate are likely to have contributed to the hesitation of experts to take part in the research, and hence might explain the low response rate (Note 12). Next to the overall low response, it is even more striking that disciplines other than psychology and health sciences, such as media and social sciences, or legal research, are represented by only one to three individuals. In this regard, our sample reflects the structure of the field of video gaming-gambling studies, composed of mainly representatives from psychology and health sciences. Rather than a bias in the method, this imbalance reflects a major shortcoming of the research field. As Akçayir et al. (2021) point out, this is indeed an obstacle to truly interdisciplinary research on gambling. This can result in favouring medical interests and methods, and partly ignoring sociological perspectives on the "broader political and social contexts in

which people and institutions provide, consume, and regulate gambling" (p. 26).

This state of affairs is probably scaled up by our sampling method, as there are many more publications on the relation between video gaming and gambling in psychology and health sciences journals than in social sciences journals. Furthermore, these health and psychology publications tend to be cited significantly more than those from other fields (Stehmann, 2020), which amplifies the difference of scale.

As a result of the low representation of social sciences and legal researchers, in their case it is difficult to assess which terminological choices and reflections are purely individual, and which ones are discipline typical. While the few respondents from underrepresented disciplines did not seem to distinguish themselves from the majority group in terms of knowledge, specific vocabulary, or opinion concerning gambling-like elements, it is likely that fine-grained differences could be identified through achieving more disciplinary diversity (Note 13).

The second limitation is due to the apparatus of the expert survey: as we explicitly asked scholars to answer as experts of their field, they may want to confirm this status, which can result in a bias of social desirability in their answers. Relying on voluntary answers also limits the analysis of our experts' reflectivity: we only have access to the reflections that they chose to share in writing, which solely represents a selection within a larger set of reflexive reactions.

Expert surveys always have to deal with the difficult choice of determining who is considered an expert. In this respect, our choice for scholarly experts had two advantages. Methodologically, it provided us with a criterion for recognizing experts, namely the publication of peer-reviewed articles. Though the hegemony of peer-reviewed articles and monographs can be criticized in other contexts, the scientific publication criterion both attests that one has worked on a topic (*knowledge*) and that this work has been acknowledged and validated by a peer group (*status recognition*). Pragmatically, the globalized format of scientific papers and the existence of centralized archives allowed us to easily establish lists of experts to be contacted – though, here again, the process of scientific publication is not exempt from cultural, socioeconomic, geographical, or gender-related biases.

Restricting ourselves to *scholarly* experts narrows the scope of what expertise can be. Other types of expertise are certainly valuable. In our case especially, a third limitation is the lack of consideration for terms used by specialists that are not in research. As such an expert study would need a very different protocol than the one we used, we encourage future research to investigate this area. As identifying the terms to be surveyed is key before performing the expert survey, a study of the grey literature could be an entry point for such an endeavour (see Baxter et al., 2021 for a comparable approach).

Generally speaking, more scholarly work on, and extra approaches to, terminology are needed, for which we sketch the following recommendations. First, reflection about terminology, though mostly being rooted in a discipline, should *not* result in the use of terms that have a different meaning in other disciplines, as such a situation can lead to unintended consequences. In this regard, the concept of *simulation*, as in the much-used term *simulated gambling*, should be treated with caution. Second, *loot box* should not be used as a catch-all term for all gambling-like elements. Indeed, numerous experts use it in the narrower sense of opaque reward container. We argue that this narrow sense is to favour: it bears an added value for analysing video games, as it pinpoints a specific source of deception for players. Identifying how specific, micro-level design choices influence player experience negatively is important, as it can be a first step towards deciding which design choices are, on the contrary, acceptable. Third, compounds containing both a reference to video gaming and another to gambling, as a way of referring to the grey zone between these two extremes, must be either avoided, or their main component be made explicit. As such, they can lead scholars to a false feeling of comprehension: our study showed that, though these terms are coined to bring nuance in descriptions, every researcher seems to have their own idea of what nuance a specific compound expresses. In this regard, an expression such as 'video game[] that incorporate[s] some aspects of gambling, that is, risking credit points or money on an action/selection', as used by one of our experts, can be considered explicit: it signals that the product in question is closer to a game, yet has some features of gambling, and explains which features are concerned.

The last two points from our analysis can help to sketch recommendations. On the one hand, we saw that the reference to real money is at stake in several terminological decisions. On the other hand, we stated the incapability of terms surveyed to unequivocally refer to the involvement or absence of real money. Therefore, we suggest that this relationship to real money is best expressed through paraphrases (such as "involving real money purchases"), rather than through a non-transparent term – until in the future a term is identified that is both commonly used and distinctive enough to solve this issue. This last recommendation echoes the reflections of several of the surveyed experts: as product, content, and context (e.g. business models) advancements keep on mixing video gaming and gambling elements, the terminology used to describe them necessitates (re)considerations at a rapid pace in accordance with the evolution of our objects of study.

The fast pace of this evolution is already perceptible if we compare the moment of our data collection with that of the final draft of this article. Indeed, none of our experts mentioned cryptogaming as an issue, i.e. the development and use of games having the earning of cryptocurrencies as a core goal or mechanic. In contrast, at the time of writing these lines, games of this kind are considered as the spearhead of play-to-earn, along with

comparable technologies or models such as web3gaming and GameFi (the mix of *gam*ing and *fi*nancial speculation). In this model, the main motivating factor to engage in playful behaviour with digital media is the monetary value that individuals can generate through playing. Consequently, it is also designed as the core revenue scheme. While some scholars see play-to-earn as a continuation and reinforcement of gamblification, others deem it to be a new, separate phenomenon (about this discussion, see Scholten et al., 2019; Serada, 2020, Zaucha, 2024). This discussion shows once again the connection between terminological debates and the very conceptualization of digital media.

The example of cryptogaming illustrates that terminological (re)considerations can happen at two levels: through the introduction of new terms, and through working towards the operationalization, further conceptualization, and sharing of already existing terms. In both cases, we hope that the recommendations that we formulate in this article will guide the process. As our experts also mentioned the relevance and urgency of gaming-gambling research outside of the academic sphere, we encourage academics to communicate with high attention for explicitness towards society as a whole.

Conclusion

In order to map the diversity of the terminology used by scholars to describe gambling-like elements in video games, we conducted a terminology survey among experts of this interdisciplinary field. The study consisted of a literature review screening for terms related to gambling-like elements in video games and the identification of relevant experts, who filled out an online survey about the topic. This survey contained a naming task, a familiarity task, a definition task and a question about these experts' attitude towards gambling-like elements in video games.

Our results confirm that a myriad of terms are used to name gambling-like elements within video games. While a great part of these terms seems to be familiar to experts within the field, no full consensus can be reached between experts, who even tend to be individually inconsequent in their use of terminology.

Some overall strategies are at stake in naming and defining processes. When confronted with content related to video games containing gambling-like elements, our experts tend either to locate them as a whole on a spectrum between video gaming and gambling, or to focus on salient features such as loot boxes (as a collective term for opaque reward containers), or microtransactions, the latter taking place within a broader attention for the presence of absence of real money in the games. However, these strategies do not fully lift the uncertainty: the gaming-gambling continuum largely consists of a grey zone of hybrid products named with equivocal compounds.

Note 1: Terminological choices are also cultural choices, which take a specific local context as reference system, and can lead to overlook how the phenomenon under study variates in other areas or languages. See for example Koeder & Tanaka (2017) on *gacha* in Japan.

Note 2: One can also note that game studies and gambling studies themselves both originate from the grouping of heterogenous disciplines around a study object, hence already have to deal with an internal methodological diversity (see Deterding, 2017; Baxter, Hillbrecht, & Wheaton, 2019).

Note 3: Following Suuonuti (2011), we use "terminology" to refer to the link between a term (for example "gambling-like elements"), a concept, as the abstract mental representation of all individual cases subsumed by the term (thus here "all the elements in video games that appear as gambling-like"), and the definition of this term, that makes clear what it covers and what not.

Note 4: As an interim solution, we choose "gambling-like elements" to refer to our object of study, and for "gaming-gambling convergence" for the cultural context in which they appear, because these terms are quite descriptive and transparent. We are of course aware that any choice of a term *before* the completion of the terminology mapping itself is not optimal – and illustrates the difficulty of establishing a clear terminology.

Note 5: Authors 1 to 7 in the author's list performed the literature review, which was then revised by authors 8-9.

Note 6: The first, second, and third authors prepared a clean version of the terms to be categorized. Based on this, the last author categorized the terms in a draft version, that was reduced and modified by the first author, and confirmed by the rest of the team. During the subsequent drafting of the survey questionnaire (see 2.4), the list was slightly reduced and adapted by the first and second authors.

Note 7: 1 was excluded because he was not active in research on gambling-like elements, 1 was deceased when we conducted the survey, 7 could not be contacted because of missing contact data.

Note 8: The missing participant here corresponds to an expert who left disciplinary fields blank.

Note 9: This unique positioning within our sample could not be matched with specific characteristics of the expert, be it in terms of field of expertise, seniority, or source of funding.

Note 10: The 'preview' function allows players to display the content of a card pack before buying them, but can only be activated once every 24 hours.

Note 11: In this context, there is a need for a methods and terminologies that are precisely able to highlight semiotic processes through which potentially problematic features are linked with harmless or even positive connotations (see Dupont & Malliet, 2021 for game analysis; Pedroni, 2018, for the analysis of gambling advertisement).

Note 12: Several authors of comparable studies in other fields report low response rates of around 20% (Rindermann et al., 2016; Steinert & Ruggieri, 2020; Bueno et al., 2024) though high rates are exceptionally registered (for instance, Silverman et al., 2014 report a response rate of 71,5% for an expert survey in physical education). As suggests the difference in response rate for the same research protocol in two disciplines in Serenko & Bontis (2018), disciplinary reasons could play a role as well. In any case, it seems that our study cumulates several factors related to low response following Steinert & Ruggieri: difficulty to exactly match the experts' research with the topic under study, presence of highly cited experts in the pool, and response fatigue.

Note 13: For example, researchers identifying as coming from or close to 'game studies' emphasized more strongly the fact that games always have contained, or by essence always contain, elements related to chance. The relations between such a stance and naming practices seems worth investigating.

Statement of Competing Interests
The authors do not declare any interest.

Relative Contribution
All authors conceived of the study. Authors 1-7 performed the literature review. Authors 8-9 revised the literature review. Authors 1-3 prepared a list of terms to be categorized. Author 9 categorized the terms in a draft, which was modified by authors 1-2. These modifications were confirmed by all authors. Author 1 drafted the manuscript, with additions by authors 2-3. All authors revised the draft, and approved the final version.

Ethics Approval
Ethical approval (G-2021-3439-R2(AMD)) by the Social and Societal Ethics Committee at KU Leuven.

Declarations
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