Chapter 3: The Rule of Productivity and the Fear of Transgression

Speculative Uncertainty in Digital Games

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Regicide, it appears, is the ultimate crime in real-world monarchies, thus warranting capital punishment (Foucault [1975] 1977: 12). The same holds true for digital, ludic monarchies. Of all video game monarchies, none saw more regicide attempts than Britannia—the fictional, high-fantasy country in the long-running role-playing game series *Ultima* (Origin Systems/Electronic Arts 1981–1999). The reasons for this were twofold. Firstly, the ruler of Britannia, Lord British, was always conceptualized as the alter ego of the series's creator, Richard Garriott (cf. "Inside Ultima IV" 1986). With Lord British appearing in every installment of the series, his presence was a challenge for players, a chance to hurt the symbolic stand-in for the game's creator. Secondly, the challenge of killing Lord British was always situated in the rules of the games. He was simply very hard to kill in each installment of *Ultima*, so figuring out a way around his elevated hit points or various invulnerabilities became part of the fun of playing the game for some players (cf. "Killing Lord British" [2009] 2019). All of this contributed to the most well-known case of regicide in the history of the *Ultima* series, which also demonstrates the element of uncertainty that is at the core of games.

Shortly before *Ultima Online*—the massively multiplayer online game (MMO) in the *Ultima* series—was set to launch in August 1997, the developers attempted a stress test on their servers (Olivetti 2015).[1] They encouraged players to log on during that time to check whether the game's infrastructure was capable of handling large numbers of players at the same time. To increase participation in the test, Richard Garriott announced that he would be present in-game as Lord British, which offered players the chance to meet their world's creator as a character directly controlled by Garriott. Since *Ultima Online* was famous for its fairly loose set of rules, which allowed players to rob or kill each other at all times, the developers usually protected their own characters through an administrative command

1 There is some controversy over which day the assassination took place, with different sources claiming either August 8 or August 9, 1997 (Razimus Gaming 2016).

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that granted them invulnerability. On the day of the stress test, a server reset happened shortly before Lord British was set to address his subjects. This removed his invulnerability, and since the reset went unnoticed by the developers, none of them thought of re-entering the command (Olivetti 2015). This enabled one player—to this day, known only by the character name of Rainz—to use a recently stolen magical fire field scroll on Lord British, killing him in a fiery inferno. In the aftermath of the assassination, all player characters that were present shortly after the event (Rainz had quickly fled the scene) were indiscriminately killed by the developers, while Rainz was later identified as the regicide and banned from *Ultima Online* altogether. The ultimate crime had warranted capital punishment, even in a virtual world. Indeed, because death is not permanent in Britannia (or in most games), banishment from the online world is the most severe punishment available in developer-monarchies. The character and their player are eliminated from the world altogether, in most cases leaving no trace of their participation in the game.

While interpreting the rules and the systems of punishment in online games with medieval subjects according to Foucault's analysis of sovereign power might be a fun exercise (and I will return to Foucault later in the essay), the anecdote of Lord British's assassination is relevant in this context because it tells us something about the unpredictability of games. The first notable observation is that it is possible to recount the events at all. Even though no video footage of the incident exists merely screenshots and 'eyewitness' accounts—the assassination of Lord British remains one of the most well-documented and discussed events in video game culture and MMO history.[2] The reasons for its notoriety relate to the unpredictability of the event itself and the openness of its immediate aftermath. *Ultima Online* proved that not only do all games encompass an element of uncertainty and openness, but also that this uncertainty affects players and developers alike. It produced a transgressive manifestation of uncertainty: the regicide. A game designer's perspective on this transgression may offer the mundane explanation that Rainz's actions did not violate the rules of the game (thus, they cannot be described as cheating), but instead owed to the emergent interplay of various systems in combination with the developers' oversight. In this view, the assassination proves the potential of *Ultima Online* as an early sandbox-style game and thus should either be framed as a positive experience or, at least, go unpunished. However, the immediate reaction by the developers (indiscriminate retaliation followed by a ban against the regicide) suggests that the matter is more complex. Apparently, while some degree of uncertainty and unpredictability in games is encouraged and supported, there can be transgressive uncertainty even without breaking the rules of the game.

2 Cf. Ramsay (2015: 128–130); and Olivetti (2015).

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In this essay, I will take a closer look at the way uncertainty, unpredictability, openness, and speculative potential are discussed and framed in video game discourse. I am especially interested in the various measures taken to make ludic uncertainty productive and in the strategies employed by developers to limit or diminish transgressive uncertainties, both of which will here be discussed as practices of speculation. I differentiate between two basic modes of speculation: the speculation that aims to put uncertainty to work, to make it productive (for example, in the form of experiments or simulations that involve the players of online games), and the speculation that attempts to contain the risks of uncertainty (for example, in the form of experiments designed to produce formalized knowledge on toxic and antisocial gameplay, which then translates into systems designed to limit such behavior). Starting with anthropological and cultural-historical accounts of games and play, I will demonstrate that uncertainty is constitutive for games and play. It is then possible to outline the ways in which uncertainty in games is 'put to work' through strategies aiming to harness what I will describe as the speculative potential of digital games. In closing, I will focus once more on the paradox of necessary uncertainty and rule-bound predictability in games that has become apparent in the events surrounding the assassination of Lord British.

Uncertainty in Games and Play

The most well-known cultural-historical definitions of play, which informed early video game discourse, mention unpredictability and uncertainty as a core element of play. The Dutch historian Johan Huizinga refers to "tension" as a driving force behind the human tendency to play: "Tension means uncertainty, chanciness; a striving to decide the issue and so end it" (Huizinga [1938] 1980: 10). He later points to uncertainty as one of the unifying characteristics that motivate both playing by oneself (or single-playing, as we could call it from today's perspective) as well as group-play:

> There is always the question "will it come off?" This condition is fulfilled even when we are playing patience, doing jig-saw puzzles, acrostics, crosswords, diablo, etc. Tension and uncertainty as to the outcome increase enormously when the antithetical element becomes really agonistic in the play of groups. (47)

The difference between single- and group-play will become relevant for this analysis later on, albeit in a significantly different context. In game research, Huizinga is usually paired with French sociologist and anthropologist Roger Caillois, although both authors have little in common ideologically or regarding their disciplinary backgrounds, as Galloway points out (Galloway 2006: 19–20). Caillois

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cites Huizinga, building on his work to develop his own definition of play, which includes uncertainty as the third paragraph: "3. Uncertain: the course of which cannot be determined, nor the result attained beforehand, and some latitude for innovations being left to the player's initiative" (Caillois 2001: 9). While Huizinga emphasizes uncertainty in play as a source of tension or suspense, Caillois frames it as an essential prerequisite for play (7–8). In doing so, he is closer to contemporary game design discourse than to Huizinga's idealistic cultural-historical account.

Both Huizinga and Caillois draw upon anthropological research on rituals in their works, with Huizinga devoting several paragraphs of his study to the relationship between play and ritual (Huizinga [1938] 1980: 15–27). Play and ritual are seen as closely related phenomena, both taking place outside of ordinary life and in their own time, both adhering to special rules, both allowing for transgressive acts under specific circumstances. Game studies today even owes one of its key terms (and at the same time its most contested subject) to anthropological research on ritual: the "magic circle," introduced into video game discourse by Salen and Zimmerman, who in turn quote Huizinga (Salen/Zimmerman 2004: 95).[3] The magic circle marks the place and time of play and ritual, it separates transgressive acts from social order. The earliest mention of a magic circle in anthropological research can be found in the work of Dutch-German anthropologist Arnold van Gennep ([1909] 1960: 13), who studied rites of passage, meaning the transition between different social positions, for example, youth and adulthood or unmarried and married. The various rituals described by van Gennep already exhibit the precarious balance between non-negotiable, absolute rules and transgressive uncertainties. When discussing rites of initiation as a subset of rites of passage, van Gennep explains how novices in various cultures (he specifically mentions Liberia and Papua New Guinea) are allowed to break their respective societies' traditional rules:

> During the entire novitiate, the usual economic and legal ties are modified, sometimes broken altogether. The novices are outside society, and society has no power over them, especially since they are actually sacred and holy, and therefore untouchable and dangerous, just as gods would be. Thus, although taboos, as negative rites, erect a barrier between the novices and society, the society is defenseless against the novices' undertakings. That is the explanation—the simplest in the world—for a fact that has been noted among a great many peoples and that has remained incomprehensible to observers. During the novitiate, the young

3 For more detailed accounts on the magic circle and the debates surrounding it in game studies, see Consalvo (2009); Stenros (2012); and Zimmerman (2012).

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> people can steal and pillage at will or feed and adorn themselves at the expense of the community. (114)

One might be tempted to add "unpredictable" to van Gennep's list of qualities describing novices and gods alike, since they are both able to act with a degree of freedom that makes their "undertakings" unpredictable for their own people and "incomprehensible to observers." In short, rites of passage create uncertainty. However, there are three important differences between the way uncertainty works in transitional rites and the way it can be thought of in play. Firstly, the ritualistic uncertainty that van Gennep alludes to is experienced by everyone but the novices themselves. The players-novices create moments of uncertainty and unpredictability for all non-players, whereas play in the way it is theorized following Huizinga and Caillois needs to be unpredictable with uncertain outcomes for the players themselves. Secondly, the rites of passage are potentially threatening to society, since they cannot always be contained, as van Gennep describes. If the rites enable novices to break all common rules, society can only persist because the ritual is always limited in its duration. This is especially true for the rites of passage studied by van Gennep, because they enable the transition from one social position to the next—as soon as the novice has attained their new position, the ritual is over. Thus, the limited duration becomes the most important (and in some cases, the only) rule of rites of passage, whereas play can and must be governed by any number of rules, although they may constantly change. Thirdly, the rites of passage are productive (they enable transition) and potentially dangerous (they allow for the breaking of rules), whereas play, in its ideal form defined by Huizinga and Caillois, is unproductive and free of consequence.

We have seen that both play and ritual can be thought of as cultural practices generating a (more or less extensively) rule-governed time and space in which (more or less) unpredictable and uncertain events can play out. This broad characterization can be further abstracted to the relationship between a fixed frame and its freely moving contents, which is the central definition of play in early game studies and game design discourse. Katie Salen and Eric Zimmerman define play as "free movement within a more rigid structure" (Salen/Zimmerman 2004: 304), elegantly encompassing both Huizinga's theory as well as anthropological research on rituals.[4] Salen and Zimmerman's definition appears in the context of a game design handbook and has to be understood as an attempt to develop a definition of play that is operationalizable for game development. To this end, they discuss rules as systemic frames that are necessary for every kind of play. Inter-

4 Salen and Zimmerman cite Huizinga as the source of the term "magic circle" (Salen/Zimmerman 2004: 95), and it appears that they were unaware of earlier anthropological research on rituals.

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estingly, Salen and Zimmerman account for the subversion and the breaking of rigid rules as an essential dimension of play, noting:

> When play occurs, it can overflow and overwhelm the more rigid structure in which it is taking place, generating emergent, unpredictable results. Sometimes, in fact, the force of play is so powerful that it can change the structure itself. (305)

Play can become transformative, unpredictably changing the rules framing it. Salen and Zimmerman perceive this as a source of creativity, maintaining that transformative play can bring about not only new rules or a new perspective on play, but new ways of playing or new games altogether.[5] Without explicitly addressing it, Salen and Zimmerman allude to the productivity of play that will be discussed in the following paragraphs.

When applying Salen and Zimmerman's definition to digital games and their ability to enable play, it seems obvious to equate the "rigid structure" with the respective computer program. The rules of the game are, after all, maintained by an algorithmic machine, as Juul argues (Juul 2005: 53–54). In this view, the game's rules are nearly absolute, since changing or violating them would require interfering with the game's code, necessitating specific technical knowledge (e.g. programming, using editors to change variables, or even physically altering consoles or cartridges). Consequently, it has been argued (especially by German media theorists) that there is no difference between the rules of the game and the laws of physics or space-time in digital games, since they all have to be programmed and then enacted through the code (Pias 2010: 14–15). Following this, all questions regarding the oft-discussed magic circle as the "place" of the game and its rules can be put aside, since algorithmic rules are neither permeable nor negotiable (Liebe 2008). The "magic" inherited from its ritualistic origins is exorcised from play, the danger for society is averted (although some media psychologists and worried parents think otherwise), and uncertainty can only manifest itself according to preset parameters. These manifestations include unpredictable emergent phenomena, but they can no longer encompass the rules themselves. Playing digital games comes down to reacting to the machine's commands (Pias 2010), enacting the designer's visions (Bogost 2007), or toying with flexible systems.

The introductory anecdote of Lord British's assassination proves, however, that matters are more complicated. There is an ontological uncertainty, an essential paradox at the core of play and games, as Markus Rautzenberg points

5 Following Salen and Zimmerman's account, there is a growing body of research dealing with transgressive play, although most publications tend to focus on an affirmative reading of transgression (in the sense of creativity and critique), e.g. Galloway (2006); Consalvo (2007); and Boluk/LeMieux (2017).

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out. Drawing on the work of Gregory Bateson, he argues that there can be no instance of play in which the act of playing itself cannot be questioned (Rautzenberg 2015). "Are we playing?" or "Is this a game?" thus become essential questions that highlight the paradoxical situation of play. Every move or operation has to encompass two contradictory meanings at the same time, inside and outside of the game. Bateson illustrates this with the bite in animal play (Bateson 1987), but it is equally true of the regicide in *Ultima Online*. Is the attack on Lord British part of the game, or is it a personal affront to the lead developer? It is, of course, both (that is the reason it is still remembered today). In accordance with Bateson's theory and Erving Goffman's frame analysis, Rautzenberg goes on to describe games as "framed uncertainties," while also pointing out that "real" uncertainty is impossible in digital games:

> On the one hand computer games are celebrations of uncertainty, on the other, this uncertainty is not real. It's just pretend uncertainty because computers have a problem with real randomness in so far as they can't generate randomness due to their very nature as von Neumann architecture and Turing machines. This is a key distinction that separates computer games from other games. There are many forms of framed uncertainties but there is a certain edge to the notion when it comes to computer games because of their digital ontology. It almost seems as if there is a kind of longing for uncertainty, randomness and entropy in digital media that is articulated in computer games for us to explore. (Rautzenberg 2015: 95)

Rautzenberg's account offers an ideal point of departure for the close reading of digital games and their various strategies of self-referentiality that question the status of games and challenge the player's position. However, his accurate observation regarding the technical limitations of digital media is still too narrow to address the uncertainties that result from the cultural context of play or various player interactions. In other words, I maintain that the "frame" of a game is more than the sum of its algorithmic rules and that, therefore, a discussion of the uncertainties manifesting within this frame needs to take into account those phenomena that either lie outside the machine-enacted rules or that result from specific player interactions.[6] Multiplayer games such as *Ultima Online* especially manifest uncertainties that are not located in the algorithmic rules of these games, but instead emerge both from the way that players act with or on each other and

6 The game designer Greg Costikyan attempts to formalize different types of uncertainty, including "player unpredictability" and "randomness" (Costikyan 2013: 78–86), which would most closely correspond with Rautzenberg's theory and my critique. Yet, since Costikyan's taxonomy is mainly directed at game designers, it misses some of the theoretical nuance in the discussion of games as uncertain phenomena as such.

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from the paradoxes that arise from the attempts to interpret these actions ("Was this a serious attack or a playful bite?" "Was this a legitimate player action or an act of aggression against a game developer?"). Thomas Malaby has called these properties of games their social and semiotic contingency (Malaby 2007: 108), while Mark Johnson describes these types of games in his Deleuzian reading of various forms of unpredictability in digital games as exhibiting a specific form of instability (Johnson 2019: 120–145). That is, they tend to generate unpredictable situations and results, regardless of whether or not they're designed to do so.[7]

Thus, the question of uncertainty in digital games is connected to an epistemological duality that shapes many debates in game studies: should the study of digital games focus on the technical artifacts (software programs, hardware platforms), or should it focus on the player expression and the cultural ramifications of digital games? And, if neither perspective is to be privileged, how can both approaches be combined with one another? This essay cannot solve these rather fundamental questions, but I will attempt to demonstrate how both the technical and the cultural dimension of digital games are intertwined when it comes to the point of speculating with the inherent uncertainty of digital games, either to harness it or to limit its consequences.

The Rule of Productivity: Uncertainty as Resource in Digital Games

Digital games have been likened to simulations, due to their conceptual relatedness as much as their technical similarities as early computer applications (Bogost 2006; Pias 2010; Crogan 2011; Frasca 2003; Aarseth 2004). As Pias demonstrates, there is a historical precedent of using heavily modified versions of chess as war games for educational purposes as well as for testing strategies in preparation for actual battles (Pias 2010: 203–228). Both games and simulations are rule-based structures that can offer ideal, consequence-free environments for learning or experimentation. At least a whole paper could be devoted to the history of games in thought experiments (the most influential of which would probably be Turing's imitation game), but I will focus on discussing several speculative applications of digital games that attempt to make their uncertainties productive.

As far as the history of games as simulations is concerned, uncertainty is introduced through elements of chance, such as dice rolls (Pias 2010: 218–223),

7 Johnson offers an ontological exploration of randomness and chance in (digital) games, in which he differentiates between randomness, chance, luck, and instability. Each of these concepts situates unpredictability at another level of gameplay, which allows Johnson to discuss a wide array of heterogeneous phenomena (e.g. procedural generation, glitches or grinding) in light of the question of how unpredictability is experienced during gameplay.

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which are necessary to prevent 'perfect' information and absolute predictability in war games. In short, to reduce the gap between the perceived 'reality' of war and its rule-based representation (Bogost 2006: 107), it is necessary to address uncertainty and unpredictability in the simulation. It thus becomes apparent that epistemic simulations, by which I mean simulations that are not primarily designed as learning or training environments, have to allow for uncertainty to ensure that it is possible to adequately represent systems of imperfect information. One could even go so far as to presume that uncertainty is mandatory if epistemic simulations are supposed to contribute to the emergence of 'new' scientific knowledge, instead of merely enabling the testing of hypotheses. As soon as computer simulations come into play, the central problem with this approach is identical to the difficulty digital games have with randomness, as Rautzenberg points out: the machine can only ever simulate randomness for its human operator. Emergence is possible when the system is complex enough, but pure chance cannot occur. This is especially challenging for all simulations that attempt to represent systems in which human behavior plays a major part, such as traffic, economics, or epidemics.

The aspirations to solve these problems and to create simulations that more adequately manifest the uncertainties of human behavior are increasingly directed towards digital games, especially massively multiplayer games. The constitutive uncertainty of games and their paradoxical relationship to non-game conventions are to be made productive as part of epistemic simulations that attempt to answer questions from various disciplines, ranging from biochemistry and epidemiology to sociology, economics, and law. The uncertainty that players introduce into virtual environments thus becomes an object of speculation that is no longer framed as a source of concern for game developers trying to anticipate and foreclose transgressive player behavior. Two very different intensities of speculation can be discerned when it comes to ludic simulations, namely the concrete speculation with player behavior and the abstract speculation with games themselves. The propositions to make uncertainty in digital games productive all center around a specific duality of online games: on the one hand, their status as a frame that allows for interaction between players, and on the other hand, their nature as technological artifacts that enable measurement and tracking of player interactions. While uncertainty is introduced through the players, the outcome of most player actions is automatically formalized and measured, since that is a prerequisite for the computer program. This enables massively multiplayer online games to function similarly to agent-based simulations, while substituting 'real' players for simulated agents (Salazar 2009). Given a game of sufficient popularity and enough players, it becomes possible to enact (social) experiments inside an ostensibly consequence-free environment and with enough participants to produce results of statistical significance, while also accounting for the uncertainties of human be-

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havior. There have been proposals by lawyers (Broekens 2008; Bradley/Froomkin 2004), epidemiologists (Lofgren/Fefferman 2007), economists (Castronova 2008), and communication scholars (Williams et al. 2011) to use MMOs for experimentation, e.g. to test legislation before it takes effect, to run simulations on the spreading of contagious diseases in pandemic scenarios, or to test economic policy. All of these proposals are speculative in nature not only because they suggest to use MMOs and their players as simulations, effectively turning the players into agents whose "playbour" (Kücklich 2005) produces or validates scientific knowledge, but also because, to date, they are only notices of intent, since it has proven difficult for the scientific community to initiate cooperation with developers or publishers of games with sufficiently large player-bases (cf. Williams et al. 2011: 165). While there have been ethnographic studies (cf. Taylor 2006) that were conducted inside MMOs, the large-scale problems of economic or legal research would require access to the game's rules and the data accumulated during gameplay, which both cannot be observed from the outside, but would have to be provided by the developers. Some of the most notable examples in which scientists have had access to this data are internships or consulting agreements initiated by the developers to solve specific problems (often relating to the economics of virtual marketplaces, cf. Seiler 2008; Suderman 2014).[8] An altogether different case compared to these examples might be considered when the game in question is built from the ground up to provide scientists with data. This happens as part of so-called citizen-science projects (Cooper 2014), which are usually employed to contribute to scientific certainties, e.g. to either minimize contingency, uncertainty, or chance or to make their inevitable appearance in play productive. However, at least one game has been developed with the explicit goal of producing specific uncertainties in the form of unpredictable human choices that were then used in Bell tests in physics (BIG Bell Test Collaboration 2018). These tests are dependent on sources for unpredictability, which poses problems that cannot be solved by computers alone but can be alleviated through unpredictable decisions by humans (in this case, quite literally through the production of bits by either pressing 1 or 0).

Attempts to make uncertainty productive in digital games could be discussed in more detail; however, for the scope of this essay, it is sufficient to note that we can observe what Patrick Crogan calls the "concretization of computer games":

> To play a computer game today—or to think and write about it—is to be part of this concretization, to adopt this facticity, to participate in its economic, logistical, technocultural becoming. Whether ignored, denied, sublated, or explicitly confronted, it is always a question of how to adopt this becoming. We are all betting

8 Among the best-known economists to cooperate with video game publishers in this way is the former minister of finance of Greece, Yanis Varoufakis (Suderman 2014).

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> on the future of computer games, with, against, or in some other orientation to their predominant becoming under the aegis of what Stiegler calls the "programming industries." (Crogan 2011: 31)

Crogan describes the mode in which players, scholars, and developers/publishers engage with digital games as gambling: to play, research, or develop digital games means placing a bet on their future. This form of speculation becomes especially interesting when we observe that the future of digital games may be concerned with predicting and preempting futures, often (according to Crogan and in line with Pias) continuing their historical legacy as military computer simulations. Thus, following Crogan, we can state that there is at least second-degree speculation taking place in the papers cited above. By proposing to use uncertainty in games to enact experiments, they speculate on the futures addressed by their specific disciplines while also speculating on the future of digital games themselves. This essay, discussing these phenomena in the context of speculation and uncertainty, could be regarded as a third degree of speculation; as the bet placed by certain disciplines in the humanities (media studies and game studies) on the future of digital games and game research.

The speculative practices I have discussed all aim to make digital games productive, to put game mechanics and players to work on problems and research questions, and even to conceive of new games and virtual worlds in an attempt to preempt some futures and close down others. I maintain that all of this becomes possible because of the uncertainty at the core of games that allows for unpredictable situations to arise in and around play, especially when several players are interacting with each other as well as with complex systems on the side of the machine. These uncertainties can enable not only potentially productive behavior, but also transgressive or harmful acts, which invite different forms of experimentation and speculation in the attempts to prevent them.

The Fear of Transgression: Uncertainty as a Challenge for Digital Games

Besides the rare cases in which the in-game representation of a game developer becomes the victim of aggression, which subsequently must be punished in an appropriately deterrent and terminal fashion, MMOs have developed communities in which transgressive acts in the form of verbal hostility, threats, harassment, and abusive in-game behavior between players are common. While it might be objected that verbal (or textual) abuse through chats or voice chat clients is not part of the game and thus cannot be compared to transgressions afforded by or enabled through the game's rules (such as the assassination of Lord British), game

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developers are recognizing so-called toxic behavior as a problem that is especially threatening to free-to-play business models (cf. Blackburn/Kwak 2014). These games depend on large player bases and a constant influx of new players, since the base game is free and the developers make money through in-game purchases. However, the low bar of entry for these games also means that the inhibitions regarding transgressive behavior are lowered—after all, the capital punishment of banishment holds little meaning anymore if you can just create a new account for the same game without any costs. Additionally, banning players has fallen out of favor with the developers even in games where it might work as a deterrent, since it always risks losing a customer permanently. In short, major online-game developers and publishers see themselves confronted with a situation that is marked by an ever-growing environment of toxicity (Alexander 2018), as well as the diminished efficiency and appeal of typical counter-measures against these behaviors. Bateson's paradox regarding the situation of play holds the potential of abuse in game environments: uncertainty can become hostility; the play bite can quickly come to be the real bite between players.

At this point, a disclaimer is in order. The issue of harassment in online games and the larger culture surrounding digital games in general is extremely broad and remains underexplored. It encompasses not only the toxicity that marks specific game communities, but also larger cultural debates regarding representation and gender in video games, as well as organized harassment campaigns such as GamerGate (Mortensen 2018). These concerns are far beyond the scope and topic of this essay and will not be addressed further. However, I am interested in harassment and toxicity because transgressive behavior such as this constitutes the 'dark' counterpart to the productive uncertainties inherent to gaming. While the transgressions function differently to the productive uncertainties, they both follow from and can be described through the ritualistic roots of play. Transgression is always possible and its most dangerous extremes have to be managed somehow. This problem of management is, moreover, where speculative practices once again come into play.

The game developers, confronted with increasing hostility inside the communities surrounding their games, attempt to solve these issues through technology. They develop systems that are supposed to encourage positive behavior and discourage negative behavior. These systems are constantly refined, adapted, tested, and evaluated. Players enter a speculative feedback loop in which their actions are permanently monitored by game systems that are designed (and periodically adjusted) to steer behavior in a productive or, at least, harmless direction. The most striking example of such systems was developed by Riot Games for the multiplayer game *League of Legends*. Released in 2009, the game has exploded with popularity. Since 2016, it boasts more than 100 million monthly players (Kollar 2016). However, it has also developed a reputation for having an unfriendly and

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aggressive community of players (LeJacq 2015). Riot Games has conducted several experiments in cooperation with psychologists, with Jeffrey Lin, a game designer with a PhD in cognitive neuroscience, serving as the project coordinator (Maher 2016: 569). Through the methods of psychology in conjunction with big data analysis, it has become possible to describe and formalize toxicity. The studies found that, in *League of Legends*, it was not merely a small minority of players responsible for most of the transgressive acts; rather, most players were overstepping the bounds of social conduct defined by Riot, at least from time to time (Maher 2016: 569).[9] This demonstrates that permanently banning the offenders is no longer a solution for *League of Legends*, because the game would lose a significant part of its players over time. We can now return to Foucault in the context of the introductory anecdote of Lord British's assassination. While the singular transgression (the regicide) can be met with the most severe punishment, a situation in which various transgressions are regularly committed by a significant part of the player population calls for reform. Foucault's analysis of the transition from sovereign to disciplinary society can be applied to online multiplayer games, as well, although the power structures and discursive formations are vastly different. What is interesting in the context of uncertainty and speculation is that, in the case of Riot Games, the focus on reform instead of punishment entails (again paraphrasing Foucault) a will to knowledge that is directed at the players and their behavior.

Online multiplayer games become the site of experiments once more. But this time, the players not merely participants in experiments that pertain to research questions and disciplines for which the game is just a scientific medium. Instead, they are the immediate objects of inquiry. To modify player behavior and make the community friendlier and more welcoming, there must be (scientific) knowledge about several factors. Which behaviors most need to change? How should 'good' or 'bad' behaviors be recognized and evaluated? What systems are best for encouraging change and reform? The various experiments conducted in *League of Legends* have posed such questions on a large scale:

> The Riot team devised 24 in-game messages or tips, including some that encourage good behaviour—such as "Players perform better if you give them constructive feedback after a mistake"—and some that discourage bad behaviour: "Teammates perform worse if you harass them after a mistake." They presented the tips

9 The code of conduct for *League of Legends*, called "The Summoner's Code," was introduced in 2010. Updated in 2017, the current version of the code states: "Play as a team, win as a team. Don't rage, blame or tear people down. Make allies on the Rift. Never feed intentionally and don't give up the fight! Lead the way for newbies, be helpful. Keep your account information private" ("The Summoner's Code" [2010] 2017). There is a clear emphasis on cooperation and a positive and welcoming atmosphere, which suggests that these are the norms that are violated the most.

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> in three colours and at different times during the game. All told, there were 216 conditions to test against a control, in which no tips were given. That is a ridiculous number of permutations to test on people in a laboratory, but trivial for a company with the power to perform millions of experiments each day. (Maher 2016: 569–570)

Experiments such as these turn *League of Legends* into what has been called "the largest virtual psychology lab in the world" (Hsu 2015). They contribute to various research papers in social psychology or information science (e.g. Kwak/Blackburn 2015). Moreover, they bring about tangible changes in the game itself, through which widespread behavioral reform is encouraged. These systems are all designed to shift decision and judgement regarding transgressive behavior from the developers to either the game's algorithms or the players themselves. Systems such as the Tribunal or the Honor System leave it to players to rate each other's behavior, which results in automatic rewards or punishments by the game. The current iteration of the Honor System offers players a level-based progression with rewards, depending on the way fellow players judge their behavior after each round of the game. Since Riot continuously evaluates the efficacy of their measures through new research, which then leads to changes in the game, it is difficult to discuss the various systems in relation to the current state of the game, as both are constantly changing. The important point is that the potentially transgressive uncertainties are subject to continuous and speculative experimental treatment, aiming to create a player community that no longer has to be threatened with capital punishment. The ideal player population governs and reforms itself, necessitating minimal interventions but maximal research effort from developers.

Closing Remarks

An element of uncertainty is necessary for play and games. This uncertainty is mobilized differently in rituals, child's play, sports, or digital games. Nevertheless, it brings with it potentials and threats that are comparable between vastly different forms of play and games: the thrill of unpredictability, the open outcome, the enjoyment of unforeseen moves, as well as the danger of transgression, the chance that play suddenly shifts into non-play, the risk that pretend aggression turns into real aggression, or even the possibility that the fabric of society itself becomes threatened through boundless rituals. Where digital games are concerned, I maintain that there are specific speculative practices that have emerged to address these uncertainties. Two modes of speculation have been discussed in this essay: productive speculation that aims to put uncertainty to work, and preventive speculation that attempts to limit the risks of uncertainty. Both modes of specula-

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tion are directed at players and systems alike. They both propose to address implications resulting from play and games taking place under the conditions of digital media. Ultimately, they both speculate on the future of digital games.

According to Crogan, to participate in gaming culture (even to study it academically) means to bet on the future of games (Crogan 2011: 30–36). These bets (or, as we may call them, speculations) have become far more tangible in some fields than others. There is keen interest in digital games as spaces for experimentation and simulation from researchers of various disciplines. The future of online games speculated by the scientific community frames them as laboratories, as epistemic toolboxes that, ideally, can be specifically designed to answer questions that are not related to the games themselves. This in turn means that research questions would have to be posed in a way that allows them to be formalized in game rules—the experiments have to work as games and vice versa. While these visions have not yet been widely realized, the experiments to limit transgressive behavior are already leading to results that warrant further study. As game developers such as Riot attempt to solve behavioral issues through systems and implemented design decisions, their repeated experimentation and refinement produces a specific knowledge on the way digital media can be used in large-scale behavior modification. In the case of *League of Legends*, the systemic solution means the implementation of a system of rewards and punishments, levels and scores, that relies on self-surveillance of the player populace. These strategies, which resemble neobehaviorist approaches and gamification (Raczkowski 2014), also demonstrate that such concepts can be successfully implemented on a large scale. Future research will have to focus on the consequences of these speculations, especially for implementations in non-game contexts—such as the Chinese social credit system (Mistreanu 2018)—that attempt to modify the behavior of whole populations through digital media and big data.

Digital games are currently entrenched in forms of speculation that are all directed toward the future of the medium, in one way or another. There is, therefore, a definite need to study these practices critically and, in doing so, to take part in the speculations regarding the futures and potentials of digital games.

Acknowledgments

I am indebted to Sylvia Mayer and Colin Milburn for their insightful remarks on the structure of the essay and on my arguments presented therein. Without their comments, the essay would undoubtedly lack clarity. I also want to thank Vera Butz for the thorough proofreading of the essay's first draft.

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