Journal of Institutional Economics (2026), **22**, e52, 1–17
doi:10.1017/S1744137426100861

CAMBRIDGE UNIVERSITY PRESS

RESEARCH ARTICLE

Video games as relational institutions: emotions, rules, and digital environments

Emmanuel Petit

Department of Economics, University of Bordeaux, Pessac, France
Email: emmanuel.petit@u-bordeaux.fr

(Received 2 May 2026 UTC; revised 27 August 2026 UTC; accepted 29 August 2026 UTC)

Abstract

This paper argues that video games – far from being mere entertainment – constitute fully fledged digital institutions. Focusing on massively multiplayer online games, it shows how rule-based environments make institutional processes unusually visible, traceable, and dynamic. Building on post-Northian institutional theory and the 4E cognition framework, the paper advances a socio-cognitive perspective in which institutions are not only systems of rules and incentives but also affective environments. Emotions are shown to play a constitutive role, understood relationally rather than as internal states or institutional properties alone: they shape how agents interpret constraints, coordinate action, and engage in moral evaluation. Through the analysis of violence, reward mechanisms, and governance structures, the paper demonstrates how institutional design organises both behaviour and emotional experience. By foregrounding the affective dimension of institutional life, it contributes to a broader theory of digital institutions in which cognition, interaction, and emotion are tightly integrated.

Keywords: 4E cognition; digital institutions; emotions; institutional design; socio-cognitive environments; video games

Introduction

Digital environments have become central to contemporary economic and social life, giving rise to new forms of interaction, coordination, and organisation. Digital platforms, online communities, and algorithmically mediated systems increasingly structure how individuals act, communicate, and cooperate. These transformations have prompted growing interest in the notion of 'digital institutions', understood as rule-based environments that organise behaviour within technologically mediated contexts. While existing work has emphasised the role of platforms, smart contracts, digitised fashion markets, and cryptocurrencies in this process (Frolov, 2021, 2024a; Petracca and Gallagher, 2025a; Schöps *et al.*, 2020; Slors, 2020), less attention has been paid to environments in which institutional mechanisms are particularly explicit, observable, and dynamically enacted in a unified and directly interpretable form.

This paper argues that online video games provide such environments. Far from being mere forms of entertainment, video games constitute structured systems of rules, incentives, and interactions in which agents engage, coordinate, and compete (Mildenberger, 2015, 2018). Building on Frolov's (2024a) metaphor of massively multiplayer online games (hereafter, MMOs) as interfaces of digital capitalism, we move beyond a purely metaphorical interpretation and propose analysing online video games as fully fledged institutional environments. The paper advances a central claim: institutions should be understood not only as systems of rules and incentives but also as interactive, socio-cognitive,

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and affective environments in which behaviour, emotions, and moral evaluations are co-produced. While institutional economics has traditionally focused on rules, constraints, and incentives (Hodgson, 2006; North, 2005; Ostrom, 1990), this perspective tends to understate the role of embodied experience, emotional engagement, and situated interaction in shaping behaviour. To address this limitation, post-Northian institutional approaches (Cardinale, 2018; Frolov, 2023; Gallagher and Petracca, 2024; Petracca and Gallagher, 2025b) have progressively incorporated the 4E cognitive framework – embodied, embedded, extended, and enactive. We argue that massively multiplayer online games (MMOs) provide a particularly suitable setting for addressing this challenge, as they embed rules, cognition, and emotions within a unified and observable environment.

A key contribution of this paper is to show that emotions are not peripheral to institutional functioning but constitutive of it. From Simon (1982) to North (2005), institutionalist scholars have emphasised the non-strictly rational dimension of decision-making and integrated it into their frameworks. Some authors have further highlighted the significant role of emotions in this process (Hanoch, 2002; Markey-Towler, 2019). Building on the 4E cognition framework, recent post-Northian approaches have sought to demonstrate its applicability in specific institutional contexts – such as judicial environments (Gallagher and Petracca, 2024) or, more broadly, market settings (Gallagher *et al.*, 2019). As Petit and Ballet (2025) argue, emotions fulfil multiple functions: they operate simultaneously as signals, guides, expressions of moral values, instruments of creativity, and, ultimately, as means of communication – functions that are not yet fully incorporated into the most recent theoretical approaches. In this respect, a comprehensive framework integrating emotions and cognition remains to be developed within institutional theory.

In video game environments, emotional responses – such as enjoyment, fun, frustration, fear, shame, and even guilt – are systematically generated by rule-based interactions and play a central role in guiding behaviour, sustaining coordination and cooperation, and shaping moral judgement (Frome, 2019). By examining how emotions emerge from and feedback into rule systems, the paper highlights the importance of affective mechanisms in institutional dynamics.

To develop this argument, we focus on two core dimensions of institutional analysis. First, we examine how violence is structured within rule-based environments and how it gives rise to moral emotions that activate agents' moral sensibilities. Second, we analyse systems of reward allocation and governance in MMOs, showing how incentive structures interact with emotional dynamics to produce tensions between efficiency, fairness, and social cohesion. These two domains provide complementary insights into the ways institutions organise both action and evaluation. Beyond the specific case of MMOs, the paper contributes to a broader rethinking of institutions in digital contexts. By conceptualising institutions as socio-cognitive, affective, and relationally co-produced, it offers a more comprehensive understanding of how institutions operate in environments where interaction is continuous, feedback is immediate, and behaviour is shaped not only by incentives but also by perception, embodiment, and emotion.

The remainder of the paper is organised as follows. Section 'Video games as socio-cognitive institutions' conceptualises online video games as socio-cognitive institutional environments, emphasising the interplay between rules, agency, and embodied cognition. Section 'Emotions and behaviour in digital institutional environments' develops a relational conception of emotions and examines their role in shaping empathic engagement, behaviour, and collective coordination within these environments. Section 'Violence, moral emotions and institutional design' examines how institutional design structures violence and moral experience through emotional engagement. Section 'Toward a theory of digital institutions' draws on these insights to outline a set of propositions towards a theory of digital institutions, situating this theory in critical dialogue with Frolov's (2024a) account of digital institutional complexity. A brief conclusion highlights the broader implications of this approach for institutional analysis.

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Video games as socio-cognitive institutions

Video games can be understood as rule-based environments that exhibit the core features of institutional settings. Rather than treating them as mere cultural artefacts or entertainment products, we approach them as structured systems in which rules, agents, and interactions jointly shape behaviour. From this perspective, MMOs do not simply represent institutions metaphorically; they instantiate institutional processes in a particularly observable and dynamic manner.[1] MMOs provide a particularly compelling illustration of the explanatory power of post-Northian enactivist institutional theory, as they make several of its core claims especially salient: rules are enacted rather than merely followed (2.1); norms are co-produced and inherently relational (2.2); and cognition, understood through a 4E framework, is an integral aspect of players' behaviour (2.3) – a foundation on which the following section builds to examine the constitutive place of emotions within these environments.

Rule-based environments and institutional structure

A video game can be schematically understood as comprising two types of agents: designers/developers and players. Within the virtual environment, it is also necessary to account for player characters, or avatars (A), as well as non-player characters (NPCs). In multiplayer games, the interactive and collective dimensions of gameplay must also be considered, particularly when players organise themselves into groups such as guilds.

In what follows, we distinguish between 'institutional design', which refers to the formal structuring of rules, technological systems, and interface-mediated constraints, and the 'institutional environment', which emerges through interaction and is experienced by agents. This institutional environment should, in turn, be understood as spanning two related but distinct registers. The first is internal to the game: the persistent virtual world in which players, acting through their avatars, engage with NPCs, with one another, and within collective structures such as guilds, all governed by institutional design and by the norms that emerge through play. The second is the broader institutional environment of gaming as a social practice: the surrounding ecology of streamers, fan communities, forums, and secondary markets in which these same players also participate – this time directly, as embodied social agents rather than through their avatars – and through which the game extends into, and is shaped by, wider social life. The two are related rather than sealed off from one another, not least because the same players move between them; later sections return to further such points of porosity, most notably where in-game allocation mechanisms come to inform institutional practices beyond the game itself (section 'Incentives, emotions and institutional tensions'). Nonetheless, the two remain analytically distinct and should not be conflated. The analysis developed in this paper is concerned primarily with the former: the institutional environment internal to the game, where rules, agents, and interactions are most directly and observably co-present.

Figure 1 schematically represents the core components of the institutional environment internal to the game,[2] as structured by institutional design, together with the principal categories of agents

[1]One of the main advantages of using video games as sites of behavioural observation lies in the virtually unlimited number of motivated participants, whose behavioural data can be aggregated and analysed (Castronova, 2006), even though players are often unaware of being observed and may not realise that researchers collect their behavioural data for analysis (Mildenberger, 2018). Players display a wide range of genuine cognitive and affective responses in immersive situations that are rarely encountered in everyday life, making video games a particularly rich setting for social science research. Jansz (2015), for instance, considers video games to be a valuable laboratory for examining how players construct their identity and emotional experience.

[2]In our analysis, we focus on the structural properties of MMOs. These are video games in which thousands of players interact simultaneously within persistent virtual worlds, organised around shared objectives (e.g. quests, combat, exploration, and trade), and sustained by dense social interaction, including cooperation, competition, and communication. The most prominent MMOs discussed in this paper include *World of Warcraft*, *EVE Online*, *Final Fantasy XIV*, and *The Elder Scrolls Online*.

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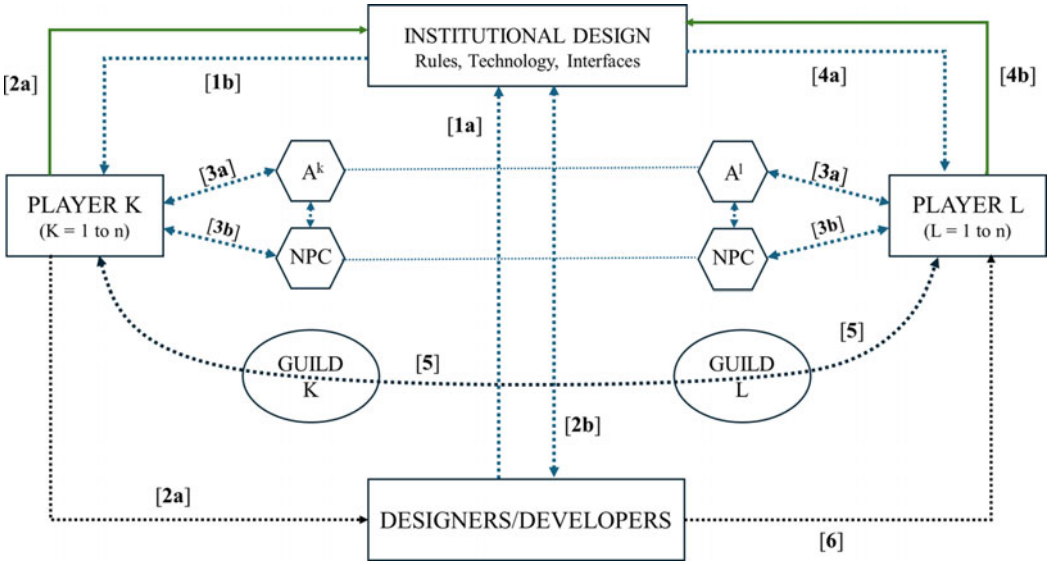


Figure 1. Institutional design and interaction structure in MMO environments.

involved – players and developers. It illustrates how institutional design structures interactions among players, avatars, NPCs, and collective entities such as guilds.

Within game studies, a substantial body of work has emphasised that games are fundamentally defined by their rules (Juul, 2005; Salen and Zimmerman, 2004; Stenros, 2017). Rules are codified and designed by developers [1a]. They specify the constraints and possibilities for action, delimiting what players can and cannot do. In this sense, gameplay emerges from the interaction between agents and a structured set of constraints, rather than from free or unbounded activity. This insight resonates directly with North's (2005) definition of institutions as 'the rules of the game', which structure incentives and shape behaviour [1b].

However, MMOs render this institutional dimension particularly explicit. Rules are not only formalised but also operationalised in real time through interfaces, feedback mechanisms, and material supports such as screens, controllers, and avatars. For instance, in *World of Warcraft*, participation in a raid is governed by explicit rules (role allocation, cooldown management, and damage thresholds), which are continuously enacted through the user interface: health bars, timers, visual alerts, and performance metrics immediately signal compliance or deviation. At the same time, the avatar and control devices materialise these rules, translating abstract norms into situated, embodied actions within the game environment. As a result, institutions appear not as abstract constraints but as lived environments in which agents continuously engage. The game interface thus functions as both a material and symbolic infrastructure through which rules are enacted, perceived, and negotiated.

Agency and the endogeneity of rules

While rules define the structure of gameplay [1a, 1b], they do not fully determine behaviour. Players interpret, adapt, and sometimes subvert these rules [2a], giving rise to a dynamic interplay between institutional constraints and individual agency (Salen and Zimmerman, 2004). This interaction is particularly visible in online environments, where large numbers of participants develop strategies, norms, and practices that extend beyond the intentions of designers. In massively multiplayer online games, in particular, players regularly engage in practices such as smurfing, trolling, or the use of user-created modifications, which alter the experience and, in some cases, the effective rules of the game

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(Taylor, 2009).[3] *EVE Online*, for instance, is commonly described as a 'sandbox' game, meaning that players can actively reshape the rules and trajectories of play (Carter, 2020). These practices, in turn, prompt responses from developers, who adjust the game's design, introduce new constraints, or redefine acceptable behaviours [2b]. Designers' responses include mechanisms aimed at curbing cheating and mitigating toxic behaviour (Consalvo, 2007; de Paoli and Kerr, 2012).[4]

Rules are therefore not fixed but continuously evolving, shaped by the interaction between designers and players. This dynamic aligns with the idea put forward by Remic (2021) that an agent's environment can be conceived as a resource, rather than merely as a constraint. It also suggests that rules are not exogenous constraints imposed on passive agents, but endogenous outcomes of ongoing interactions. In digital institutions, norms and rules primarily emerge through a process of co-production among actors, as suggested by Frolov (2024a). Video games thus make visible a central feature of institutions: their co-evolution with the behaviours they are meant to regulate.

The functioning of an MMO also supports the ontological position advanced by Petracca and Gallagher (2025b: 2, emphasis in original), according to which 'a norm is located *in the relation* between individuals and institutions, and not, as currently argued, in *both* individuals *and* institutions'. The dynamics of gameplay in an MMO entail the sedimentation of certain habits and practices, in Gallagher's (2025) sense, arising from numerous and repeated interactions. As will be shown below, our conception of emotions can likewise be understood from this relational perspective: emotions are not 'located' entirely within the individual, nor entirely within institutions or environments, but rather 'in-between' (Candiotto and De Jaegher, 2021).

MMOs as socio-cognitive symbiotic systems

As recent work suggests, video games may be analysed as social institutions, given their structured norms, modes of interaction, and governance mechanisms (Obreja, 2025).[5] Beyond their rule-based

[3]Mods, or user-created modifications, are alterations designed to modify, enhance, or customise the gameplay experience. These may affect the user interface, graphics, audio, or introduce additional features, among other aspects. Beyond such cosmetic or functional changes, however, mods can also fundamentally influence gameplay by altering both the way the game is played and its underlying mechanics. Taylor (2009) discusses one of the most iconic mods in the history of *World of Warcraft* (WoW): CT_RaidAssist (CTRA), developed to facilitate the organisation, coordination, and management of forty-player raids. Rather than merely providing an additional interface layer that translates and displays information already available to players, CTRA is described by Taylor (2009: 334) as marking a moment in which 'the mod comes to stand as a kind of autonomous agent, the 41st member of the raid.' The mod actively supports players by warning them when a bomb is nearby through audible cues, visual alerts, or even direct chat messages. In this sense, it functions as a form of digital teammate, taking over part of the cognitive workload that would otherwise fall to the player. As a result, it reshapes the tactical practices of the player community, with guilds incorporating these mod-mediated responses into their raid strategies. This, in turn, establishes a behavioural norm during raids, as players come to expect bomb alerts to be followed by immediate and appropriate action – for example, requiring the player identified as carrying the bomb to move away from their teammates without delay. Consequently, the mod influences not only individual gameplay but also the collective practices and organisational dynamics of player groups within the game.

[4]De Paoli and Kerr (2012) demonstrate that cheating emerges from multiple, evolving interactions between human and non-human actors. Drawing primarily on *World of Warcraft*, they show that cheating cannot be reduced to individual intent or explained solely in psychological or behavioural terms. Rather, it arises from the interplay of technical infrastructures, social norms, economic incentives, and gameplay practices. Cheating is therefore best understood as a negotiated, situated, and inherently unstable phenomenon, rather than as a straightforward rule violation. For example, the game's designers rely on players themselves by encouraging them to report suspicious behaviour and by reinforcing norms of fair play and loyalty. At the same time, developers recognise that certain forms of cheating may indirectly foster player engagement or stimulate creativity. Maintaining a balance between formally prescribed rules, their enforcement, and the behaviours they generate thus becomes a central challenge in game design. Cheating, in this sense, can run in both directions: the developers themselves may occasionally cheat by deliberately subverting the game's own conventional rules and uses. As Van de Mosselaer (2019: 201) observes, *Batman: Arkham Asylum* famously simulates a game crash, demonstrating how developers can intentionally manipulate the game's rules and conventions [6] to surprise or even unsettle players.

[5]Obreja (2025) explicitly connects the analysis of video games as social institutions to the broader phenomenon of gamification. The relational and affective account developed in this paper suggests a correspondingly relational understanding

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structure, video games also mobilise complex forms of 4E cognition – embodied, embedded, extended, and enactive – that are central to understanding institutional behaviour and have been discussed extensively in the post-Northian literature (see, for instance, Frolov, 2024b; Petit and Ballet, 2025).

First, cognition in games is embodied. Players do not simply make abstract decisions; they act through avatars [3a] that mediate their presence in the game world (Farrow and Iacovides, 2014; Milik, 2017a). Avatars provide players with the opportunity to engage in unusual behaviours, to inhabit alternative selves, and to act in certain ways without directly experiencing the consequences. This embodiment is reinforced by immersive experiences often described in terms of 'flow' (Nakamura and Csikszentmihalyi, 2014), in which action becomes fluid and attention is fully engaged. Here, the technology implemented by developers plays a crucial role. Playful physical tools extend the body, enabling participants' immersion and engagement in the activity (Witkowski, 2012). This immersion becomes near-total when players use virtual reality headsets – three-dimensional technologies that, in a far more sophisticated form, echo the 'notebook' described by Clark and Chalmers (1998).

Second, cognition is embedded and extended through the game environment. Players perceive the game world in terms of actionable possibilities or affordances. Affordances constitute a core feature of video game functioning [4a]. Rucińska (2024) defines affordances as relational possibilities emerging in play, shaped both by the game environment and by players' capacities as extended through their player characters: 'affordances are relations that come out in the context of play [. . .] a dragon is perceived as "flyable," a block as "smashable," and a zombie as "killable"' (Rucińska, 2024: 9). These affordances are not merely given but emerge from the interaction between the environment and the player's capacities, which are themselves extended through technological devices and interfaces (Clark and Chalmers, 1998). A game object, for instance, is perceived not simply as a visual element, but as something that can be used, avoided, or transformed within the logic of play.

Rucińska's (2024) relational account of affordances resonates with the enactivist post-Northian approach (Ransom and Gallagher, 2023). Virtual affordances can be understood as opportunities for virtual engagement that require players to anticipate the consequences of their actions within the virtual environment. As Rucińska (2024: 10) argues, 'to perceive a virtual affordance is also to anticipate an action to unfold in the [virtual reality].' The action possibilities that players genuinely experience – for instance, whether a dragon should be fought, avoided, or approached in some other way that emerges during play – only become affordances insofar as they are enacted through the player's actual engagement with the game.

Cognition is also socially extended (Gallagher, 2013), taking into account the activities of coordination, competition, and cooperation that arise between players, whether outside or within guilds (Chen, 2009) [5]. Guilds exemplify in particular what Slors (2019: 1190) terms 'task dependency', referring to the extent to which 'the intelligibility of a task depends on a large whole [of] coordinated tasks'. In *World of Warcraft*, for instance, defeating a raid boss requires a clear division of labour among the forty players involved. While Slors (2019) illustrates this 'symbiotic system' through the legal system, in MMOs, it corresponds to the coordinated activity of avatars (tanks, mages, healers, warriors, etc.), who, within the game context, 'profit from whatever the system as a whole offers [. . .], while contributing only a small part' (Slors, 2019: 1198).

Third, cognition is enactive. Video games are defined not only by their rules (Juul, 2005) but also by their experiential dimension (Salen and Zimmerman, 2004), which involves the adoption of a ludic attitude. The enactive approach captures the player's engagement in the game and allows us to articulate these two dimensions. Adopting the position of the player presupposes the capacity to situate oneself reflexively as an object (Mead, 1934). Gameplay thus involves active engagement (Gallagher, 2017) and a dual process of regulation: participating in the game entails regulating oneself as well as one's actions in relation to the configuration of rules, the environment, and the player's intentions. In MMOs, this process is also collective, as players coordinate actions, develop shared interpretations, and

of gamification itself – one concerned with the collective, co-produced, and affectively constituted dimensions of game-like institutional design, rather than with the introduction of individual incentive and reward structures alone.

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construct social practices. The game environment thus functions as a socio-cognitive symbiotic system in which meaning, action, and coordination emerge from interaction rather than being pre-defined [1–5].

Emotions and behaviour in digital institutional environments

Emotions in video games are embodied and interactive engagements, embedded in rule-based environments and participating directly in their functioning. To develop this further, we first clarify our ontological understanding of what emotions are. In the literature, two broad conceptions of the nature of emotions can be distinguished. The first, fully internalist position holds that emotions are internal states of the agent elicited by institutional environments, which in turn produce behaviour, playing a mediating role between institutions and individual behaviour. The second position, by contrast, is externalist in orientation: it suggests that emotions are properties of institutional situations, located within the institutional environment itself, rather than performing a mediating function.

Our ontological stance, inspired by Candiotto's (2022) approach, which integrates emotions within the 4E cognitive framework, holds that emotions are shaped through dynamic and continuous interaction with institutional environments. In other words, emotions are not located exclusively within institutions or within individuals, but rather in the relation – that is, the interactions – between an individual and their environment. This relational, non-dual or transactional conception has Deweyan roots (Petit and Ballet, 2021). This relational stance does not so much refute the internalist and externalist positions as recompose them: what the former locates as an elicited internal state and what the latter locates as a property of the institutional situation are two partial descriptions of a single relational event, apprehended from different vantage points. For instance, drawing on Crippen's (2022) Deweyan account of emotional affordances, in which environment and behaviour jointly determine emotionally imbued situations, an institutional emotional affordance resides neither solely in the organisational environment nor solely in the individual's internal states, but emerges from the dynamic relation between an agent and their environment.[6]

Building on this relational conception of emotions, this section examines how emotions operate within digital institutional settings, not as by-products of gameplay, but as mechanisms that shape behaviour, coordination, and moral engagement.

Empathy and the reality of affective engagement

Because video games are fictional worlds, the emotions experienced by players are sometimes described as 'quasi-emotions' (Walton, 2014), suggesting that they lack real-world significance. However, this distinction becomes difficult to sustain once gameplay is understood as an embodied and interactive process: as Tavinor (2024) argues, video games place players in the position of agents within an interactive fiction, where they are both participants and observers. This dual position gives rise to what Rucińska (2024: 13) describes as a 'double attunement': players remain aware of the artificial nature of the game while simultaneously engaging affectively with its events, a capacity that allows them to engage affectively with virtual events while remaining grounded in their embodied situation.

A closely related structure has been identified by Gallagher and Gallagher (2020) in their enactive account of empathy, developed in the context of acting. Rather than treating empathy as an internal simulation subsequently projected onto, or channelled through, another body, they argue that basic empathy is itself perceptual and action-oriented: to perceive another is already to perceive them in terms of how one might engage or respond to them. On this view, what they term 'twofoldness' – an

[6]An audit or compliance mechanism, for instance, does not inherently generate fear; instead, it affords the possibility of an emotional response that becomes actualised only when an individual perceives the situation, interprets it in light of their practical context, and responds affectively. The affordance is therefore relational, situated, and contingent upon both the individual's engagement with the environment and the context in which this engagement occurs.

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awareness of two aspects of a single experience, distinguishable but inseparable – describes the player-avatar relation more accurately than the language of mediation suggests. The player is not a separate, prior self whose emotions are subsequently transmitted through the avatar as through a channel; player and avatar constitute a single, twofold engagement [3a], in which the player's embodied situation at the screen and the avatar's situated action within the game are two aspects of one and the same affective event. Interface cues – health bars, controller vibrations, visual effects – do not mediate between two separate poles so much as furnish the perceptual detail through which this twofold engagement is sustained (Milik, 2017a).

This relational structure is illustrated vividly by Pan's (2025) analysis of *Little Nightmares*. Although *Little Nightmares* is not itself an MMO, Pan's analysis illustrates a mechanism of empathic engagement operating at the level of the individual player-avatar relation examined in section 'MMOs as socio-cognitive symbiotic systems'. According to Pan (2025), empathy emerges relationally between the player-character and the player, through the interplay of the game's own dynamics, its aesthetic design – such as the marked contrast between the towering monsters and the diminutive figure of Six – the avatar's movements, and the player's own situated position, alone in front of the screen. Empathy, on this view, is not felt first and then projected onto the avatar; it is generated in and through the very coupling of avatar, aesthetics, and situated player that section 'MMOs as socio-cognitive symbiotic systems' has already established as constitutive of gameplay itself.

Emotions as institutional mechanisms

Within digital institutional environments, emotions arise not only from the player-avatar relation examined above, but from agents' ongoing interaction with the rule system as a whole (Frome, 2019; Ter Minassian, 2018). Situations of uncertainty, risk, success, or failure (Engelstein, 2020; Juul, 2013) generate affective responses – frustration, excitement, attachment, fear, and anxiety – that orient how players perceive and respond to institutional constraints. The empathic engagement discussed above extends, in multiplayer settings, to other players themselves, approached as civic as much as fictional subjects (Kessner and Cortes, 2023) – a collective dimension examined more closely in the following subsection. Players, in turn, actively select games or in-game situations that align with their affective dispositions, developing what has been described as an 'affective niche' (Krueger and Osler, 2019): through practices of 'housing', they construct, organise, and personalise their in-game environments by modifying elements of the game's design [4b].[7]

Game mechanics actively organise emotional experience, functioning as affective scaffolds that structure players' behaviour through feedback systems, rewards, constraints, and affordances (Colombetti and Krueger, 2015). Repeated failure may generate frustration that either discourages participation or motivates increased effort (Juul, 2013), while success reinforces engagement and commitment. Similarly, rule-governed interactions – such as competition over scarce resources or cooperation in collective tasks – produce emotions such as excitement, fear, anger, as well as gratitude and trust (Frome, 2019). The emotional spectrum of video game play extends far beyond these core emotions, encompassing guilt (Pattison, 2025), contempt (Rueff, 2015), boredom (Ter Minassian, 2018), nostalgia (Bukač and Katić, 2024), as well as disgust and sadness (Frome, 2016). Institutions, in this sense, operate not solely through incentives or formal rules, but through the affective texture of interaction itself: how agents interpret constraints, evaluate outcomes, and adjust their strategies over time is inseparable from the emotions through which participation is sustained and expectations stabilised within structured environments.

[7]In *Final Fantasy XIV*, players can, upon reaching a certain level, acquire a private island. There, they gather resources, construct buildings, cultivate crops, and even raise animals. The appeal of housing partly lies in the enjoyment of these activities themselves, but also in the satisfaction of showcasing their achievements to other players (and to streamers) through what is known as a 'room tour'.

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Emotional dynamics and collective behaviour

Emotions play a central role in shaping both individual and collective behaviour within digital institutional environments. In competitive contexts, they can intensify engagement, reinforce persistence, or generate conflict. As shown, for example, by Mildenberger (2018), *EVE Online* fosters player toxicity and a strong orientation towards conflict, contributing to the persistence of 'bellicose' institutions – an intensity of competition, in which players' possessions are never entirely secure, that leads Milik and Webber (2017: 4) to describe it as an 'extreme form of capitalism'. In cooperative settings, as Candiotto (2018) highlights in relation to teamwork, emotions contribute to coordination, solidarity, trust, and the maintenance of group cohesion. In *World of Warcraft*, cooperation is essential for activities such as large-scale raids involving around forty players (Ducheneaut *et al*., 2006). Beyond coordinated play, belonging to a guild or alliance, as well as experiences of camaraderie (Chen, 2009), enhances the hedonic dimension of gameplay, underscoring its fundamentally social character. Emotional responses are therefore central to the emergence and stability of social dynamics.

Consequently, these dynamics are not limited to individual emotional states. In multiplayer environments, emotions are often co-produced through interaction and may take on a shared or socially extended character. Trust, enthusiasm, frustration, or disappointment emerge through repeated interactions, common objectives, and mutual expectations. In massively multiplayer online games, for instance, coordinated activities such as raids or collective missions generate forms of collective emotional engagement that reinforce group identity and cohesion. Emotional experience thus becomes partially distributed across participants, contributing to the formation and regulation of communities. Bareither's (2020) ethnographic work on player-versus-player combat in *The Elder Scrolls Online* illustrates this well: effective teamwork depends on patience prevailing over impulse,[8] as the most effective players do not act on every opportunity but exercise restraint unless eliminating an opponent serves the team's strategy. Individual restraint, in other words, becomes a collectively regulated affective disposition, sustained less by formal rule than by the shared expectations of the group.

At the same time, these dynamics vary across players. Individuals do not engage with the same rules in identical ways (Frome, 2019): their behaviour depends on their motivations, expectations, and emotional orientations. Some players are primarily driven by performance and challenge, deriving satisfaction from overcoming obstacles and achieving success (Kallio *et al*., 2011), while others are more oriented towards social interaction, valuing cooperation, shared experiences, and collective achievement (ibid.). This heterogeneity is itself institutionally significant: rules do not operate uniformly across agents, but are interpreted through their affective dispositions and social embeddedness, so that the same institutional setting gives rise to heterogeneous patterns of behaviour, strategy, and coordination.

Beyond their role in guiding behaviour and sustaining interaction, emotions can also give rise to moral reflection (Petit and Ballet, 2023): situations involving conflict, loss, or ethically ambiguous choices generate what Frome (2019) terms 'eudaimonic' experiences – forms of emotional discomfort (Cartlidge, 2023) that prompt players to question their actions and reconsider the goals of the game, rather than simply respond to its incentives. Rule-based environments, in this sense, shape not only behaviour but also moral dispositions, generating emotionally charged situations under which agents engage in forms of situated moral reasoning. The following section examines this dimension directly, through the case of violence as a key site of moral emotion and institutional experience in digital environments.

Violence, moral emotions, and institutional design

Violence constitutes a central dimension of many institutional environments, both in real-world societies and in digital settings. In institutional economics, North *et al*., (2009) emphasise that institutions play a key role in enabling, constraining, and organising violence. Video games provide a

[8]Good teamwork accordingly requires resisting what German-speaking players term, in slang, *killgeil*: the impulse to take a shot the moment an opportunity presents itself, regardless of its strategic value.

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particularly clear illustration of this process, as many of them are structured around conflict, combat, and competition. However, rather than focusing on whether video games increase real-world violence (Anderson *et al*., 2010), this section examines how rule-based environments organise the experience of violence and shape the moral responses associated with it.

Violence as an institutional configuration

Violence in video games is not an exogenous feature of behaviour, but a configuration actively shaped by rule systems: it is structured by rules, incentives, and design choices, rather than existing as a form of raw content (Hartmann *et al*., 2014). Combat systems, reward mechanisms, and narrative framing determine how violence is performed, justified, and evaluated within the game. In many cases, violence is incentivised and normalised, becoming a routine means of progression; enemies are often dehumanised, and actions are framed in ways that minimise moral tension, encouraging players to engage without questioning the legitimacy of their behaviour (Allen, 2011). Institutions, in other words, do not merely regulate pre-existing violent tendencies; they actively structure how violence is perceived, enacted, and justified – a process that video games make particularly visible by embedding violence directly within rule-based environments.

Moral emotions and institutional experience

Certain games deliberately introduce forms of emotional discomfort that disrupt routine engagement and provoke reflection. This discomfort arises when players are confronted with the consequences of their actions in ways that cannot be easily ignored or justified: emotional responses – unease, guilt, shame, and distress – become central to the experience of the game, motivating individuals to resolve or transform it. In a pragmatist vein, this echoes Dewey's account of doubt as the starting point of inquiry: an unsettling situation disrupts the balance between the individual and their environment, initiating a process of reflection and adjustment (Dewey, 1925). Under these conditions, emotions possess a transformative power, affecting agents, habits, and values (Petit and Ballet, 2023): institutions, in this sense, do not only stabilise behaviour through rules (Markey-Towler, 2019) but can also transform it, by generating emotionally charged experiences that alter agents' dispositions.

This dynamic is particularly evident in so-called 'anti-war games' such as *This War of Mine* (Bjørkelo, 2018) and *Spec Ops: The Line* (Smethurst, 2017), where violence is not presented as rewarding or heroic, but as morally problematic and emotionally costly. Both studies show that players are led to disavow their immoral conduct, whether in the moment or after the fact, as a result of the emotional experience generated by the game itself. In *Spec Ops: The Line*, for instance, the player is forced to deploy a chemical weapon, only to later discover its devastating consequences for civilians [3b]. The game thus confronts the player with the moral implications of their actions, transforming emotional engagement into critical reflection. Similarly, in *This War of Mine*, actions such as stealing from vulnerable characters [3b] generate lasting emotional consequences that affect subsequent gameplay: guilt, loss of motivation, or social disapproval from other characters reshape the player's experience and constrain future choices, so that agency becomes conditioned by past actions and their emotional repercussions rather than remaining unrestricted.

Institutional design and moral learning

The emergence of moral reflection in online video games depends crucially on institutional design (Pötzsch, 2017). Designers shape the conditions under which players encounter morally significant situations by structuring rules, incentives, affordances, and feedback mechanisms. The presence or absence of moral consequences, the framing of actions, and the responsiveness of the environment all influence how players experience and evaluate their behaviour. For players to develop genuine moral reflection driven by emotions, it is essential that the design, narrative, and/or game mechanics are

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appropriately configured. The game must confront players with moral situations whose outcomes are not straightforward but rather complex, ambiguous, and unsettling ('wired', in Bosman's terms, 2019). Similarly, as exemplified by *This War of Mine*, it must strive for realism, both historically and emotionally (Bjørkelo, 2018). Gameplay and narrative also play an important role: either by programming the premature death of an avatar with whom the player identifies (as in *Clair Obscur: Expedition 33*, awarded at the Game Awards in 2025) or by using the 'permadeath' mechanic – whereby a playable character cannot be revived once killed.

Games that foster moral engagement typically introduce ambiguity, limit the rewards associated with violence, and emphasise the consequences of actions (Bosman, 2019; Consalvo *et al.*, 2019). They may also incorporate elements that humanise characters, making it more difficult for players to treat them as mere resources. These design choices contribute to activating players' moral sensibilities and encouraging reflection (Katsarov *et al.*, 2019).

Importantly, this process is not unidirectional: designers, players, and game systems interact continuously, moral experience emerging through their ongoing co-production rather than from institutional design alone. Playtesting, player feedback, and iterative design all contribute to shaping the moral architecture of the game. Once again, emotions play a crucial role: the creation of an adverse and bleak world – even a virtual one – exposes game designers to negative-valence emotions, such as disgust or sadness, leading them to mitigate these effects by recruiting players for testing (De Smale *et al.*, 2019). Institutions, in this light, organise not only behaviour but moral experience itself: by structuring the conditions under which actions are performed and evaluated, they shape how agents perceive responsibility, legitimacy, and consequence – a dynamic that online video games render particularly visible, through institutional designs that shape moral learning by way of emotional engagement.

Toward a theory of digital institutions

The analysis of video games developed in the previous sections suggests that digital environments provide more than illustrative cases of institutional functioning. They reveal structural features of institutions that remain less apparent in traditional settings. By making rules explicit, interactions traceable, and feedback immediate, massively multiplayer online games offer a particularly clear perspective on how institutions organise behaviour, emotions, and social coordination. Building on these insights, this section outlines several propositions towards a more comprehensive theory of digital institutions, before situating this theory within the broader institutional literature through a critical dialogue with Frolov's (2024a) account of digital institutional complexity.

Institutions as interactive and experiential environments

The analysis developed in this paper suggests that institutions should not be understood solely as systems of rules or constraints (North, 2005), but as interactive environments in which agents are situated and engaged (Frolov, 2024b; Petracca and Gallagher, 2025b). In massively multiplayer online games, this dimension is particularly explicit: rules are not external prescriptions but are enacted through continuous interaction, mediated by interfaces, feedback systems, and embodied engagement.

This perspective emphasises that institutions are lived and experienced. Agents do not merely respond to incentives; they perceive, interpret, and navigate structured environments. Institutions thus function not only as constraints but also as resources (Remic, 2021), shaping the conditions under which action is both possible and meaningful. Institutional analysis should therefore account for the experiential dimension through which rules are enacted and interpreted.

Emotions as constitutive elements of institutions

A second implication concerns the role of emotions. The analysis of gameplay shows that emotions are not secondary effects of institutional processes but are integral to their functioning: how agents

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interpret rules, evaluate outcomes, and adjust their behaviour is itself an affective accomplishment, not a separate response elicited afterwards. Frustration, attachment, trust, nostalgia, or guilt contribute to stabilising expectations, sustaining engagement, and regulating interactions. This challenges the view that institutions operate primarily through incentives and rational calculation. Instead, institutions also rely on affective mechanisms that shape agents' dispositions and responses. Emotions can reinforce compliance, generate conflict, or trigger reflection, depending on how they are structured within the environment.

Building on a pragmatist perspective inspired by Dewey (1925), and drawing on Petit and Ballet (2025), emotions can be conceptualised as multi-functional mechanisms within institutional environments. In this framework, emotions operate simultaneously – rather than sequentially – as signals of problematic situations, guides for action, evaluative devices for moral judgement, transformative forces enabling adaptation, and communication tools supporting coordination: the list orders these functions for clarity of exposition, not because institutions, emotions, and behaviour form a one-way chain running from one to the next. The relation is instead circular: institutional structures – understood here as encompassing both institutional design and the broader environment in which the player is embedded – shape emotional responses, which shape behaviour, but behaviour also feeds back into institutional structures, prompting their adaptation through processes of norm formation and governance adjustment. These different functions have been highlighted in our analysis thus far. In a standard war game, for example, fear signals danger (an imbalance between the organism and its environment) to the player-character and thereby guides decision-making (e.g. the player preserves their life by abandoning a position or objective, irrespective of moral considerations). However, an alternative outcome is possible through the mobilisation of moral emotions. As suggested earlier, guilt, embarrassment, and shame function as vectors of moral evaluation and behavioural adjustment for the player (Bjørkelo, 2018). Moral emotions may thus contribute to norm compliance (the player preserves their interests), but also to their dynamic reconfiguration (the player opts for a moral course of action). As we have also noted, emotions possess a social and collective dimension within guilds: they act as instruments of coordination and cooperation or, conversely, foster conflict.

Incentives, emotions and institutional tensions

The interaction between incentives and emotions points to an additional source of tension within institutional environments. Mechanisms such as Dragon Kill Points (DKP) are designed to allocate resources efficiently and to reward participation (Malone, 2009),[9] yet their effects extend beyond purely economic considerations. They generate emotional responses – such as satisfaction, frustration, anger, or resentment – that influence how agents perceive fairness and legitimacy. The most skilled or 'power gamers' (Malone, 2009) derive particular benefit and satisfaction from the DKP system, whereas less experienced or less capable players may suffer from its drawbacks. This reveals a fundamental tension within institutions: the alignment between efficiency and social cohesion is not guaranteed. Incentive systems that maximise performance may simultaneously undermine trust or collective engagement.[10]

[9]The DKP system was introduced as a substitute for the random allocation rule, under which loot from a successful combat was distributed at random. In simplified terms, DKP functions as a form of currency enabling players to bid for the loot released by a defeated boss. The player who wins the auction obtains the item in question. The DKP system is incentive-based insofar as repeated participation in raids, perseverance, skill, and player competence are rewarded, with such players accruing more DKP. Conversely, 'players who arrive late, who miss too many raids, who do not pay attention to instruction, or who make errors in play which cause the team to fail can receive a DKP deduction' (Silverman and Simon, 2009: 369).

[10]The interest of a DKP system, when moderated by leadership, lies in its potential to generate coordination and cooperation beyond the virtual world. In their analysis, Martinig *et al.* (2026) demonstrate how such a system can be applied to the allocation of authorship in collaborative research projects. This is a familiar issue for scholars, particularly when publications involve multiple authors. In many disciplines, authors are listed alphabetically, a convention that often overlooks differences in the nature and extent of individual contributions. Drawing on the DKP model, Martinig *et al.* (2026) identify a set of criteria – such as transparency, fairness, accountability, granularity, and autonomy – that promote a more inclusive recognition of contributions and better acknowledge intermediate roles, which are frequently neglected in academic

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Conversely, arrangements that prioritise social cohesion may reduce efficiency, since trust itself functions as a form of institutional glue that cannot simply be optimised for like a resource.[11] Institutional design, in this light, cannot be reduced to the optimisation of incentives: it must also account for the affective responses generated by different configurations of rules, as these responses directly influence participation, coordination, and institutional stability.

Governance, coordination and institutional plasticity

The analysis of guild organisation further illustrates the hybrid nature of institutional governance. Formal rules are complemented by leadership, informal norms, and situated judgement (Milik, 2017b; Zimmerman, 2019). Systems such as DKP require interpretation, adjustment, and enforcement by actors occupying positions of authority within the group.[12]

Institutions thus emerge through the ongoing co-production of rules, social relations, and practices. Their effectiveness depends on the capacity of agents to coordinate, interpret, and adapt these elements over time. This highlights the plasticity of institutions: they evolve through interaction and are continuously reshaped by the practices of their participants. Digital environments make this process particularly salient. Changes in behaviour can rapidly lead to adjustments in rules and governance structures, illustrating the endogenous and processual character of institutional dynamics.

Digital institutions in critical dialogue with Frolov

The account developed in this paper converges with Frolov's (2024a) analysis of digital institutions at several points, while arriving there by a different route. Both share a process-philosophical starting point: institutions, in Frolov's formulation, are 'more processes than substances . . . more verbs than nouns, more often fluidity than fixation' (2024a: 25) – a view close to the endogeneity of rules developed in section 'Agency and the endogeneity of rules', and to the understanding of institutions as interactive and experiential environments proposed in section 'Institutions as interactive and experiential environments'. Frolov himself argues that institutions call for 'a more complex metaphor . . . than a sports game' (2024a: 31); the turn to MMOs pursued throughout this paper can be read as one way of taking up that call directly, substituting a genuinely complex game for the metaphor of one. Most directly, Frolov's own account of 'cognitive institutions' converges with the argument advanced here: cognitive institutions, he writes, are 'cognitive-emotional' ones, in which cognition and emotion 'blend into a cognitive-emotional amalgam' (2024a: 105). This convergence is reached by a different theoretical route – Frolov draws on complexity theory, actor-network theory, and affective neuroscience, applied across a broad canvas of digital institutions spanning metaverses, platform algorithms, and blockchain systems; the present paper draws on 4E cognition and Deweyan pragmatism, applied specifically to MMOs as a particularly observable site. The convergence is theoretically significant precisely because it is not derivative: two distinct routes arrive at a common claim, that digital institutions cannot be adequately understood without their affective dimension.

publishing. To address potential disputes and conflicts, they also recommend assigning a central role to the project lead (much like a guild leader) and – crucially for our discussion – emphasise that such a system is intended to reduce the stress and associated emotional strain linked to questions of intellectual ownership.

[11]Gallagher and Petracca (2024) argue that genuine interpersonal relationships – and thus trust-based relationships – are a requirement for cognitive institutions to function properly: 'a certain degree of trust [. . .] is not only necessary [. . .] but desirable, as an institutional glue that helps hold institutions and citizens together' (2024: 140). Conversely, the absence of trust can lead to forms of institutional pathology.

[12]For instance, leaders may negotiate and implement loot distribution rules that adjust or complement the DKP system (Malone, 2009). Priority rules or seniority criteria may be introduced; for example, items may be allocated preferentially to players whose specialisation is critical for the raid, or to core guild members rather than external participants or those in trial periods. Leaders are also expected to enforce the prohibition of 'ninja looting' (i.e. the appropriation of loot without regard for agreed rules) and to encourage well-equipped members to forgo their turn in order to give others an opportunity.

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This convergence extends to a more specific point, developed in the concluding chapter of Frolov's book: the notion of co-production is not univocal. As Frolov notes, co-production 'does not have a universal form'; it 'can be both constructive . . . and destructive (capture, weakening, or destruction of existing institutions)' (2024a: 128). This ambivalence underlies his concept of the extitution: 'emerging ways of social ordering based on norms' variations', existing in parallel to – rather than simply violating – the orders defined by established institutions, which institutions can neither capture nor domesticate, yet continually depend upon (2024a: 199). Several dynamics already examined in this paper can be redescribed in these terms: the CT_RaidAssist modification, which came to function as 'a kind of autonomous agent, the 41st member of the raid' (Taylor, 2009: 334) without ever being part of the game's formal design; the reshaping of *EVE Online*'s own trajectories by players operating within its 'sandbox' structure (Carter, 2020); or the negotiated, unstable status of cheating itself, which De Paoli and Kerr (2012) show cannot be reduced to a simple violation of rules. None of these phenomena are well captured by a vocabulary of rule-following or rule-breaking alone; extitutional analysis offers a way of reading them as a second, equally coherent ordering logic, neither simply good nor bad, rather than as mere anomalies.

Frolov's extitution nonetheless remains framed in terms of norms and their boundaries – institutions as relatively stable normative cores from which variations depart. The relational conception of norms developed throughout this paper, following Petracca and Gallagher (2025b), suggests a further step: if norms are constituted in the relation between agents and institutions rather than residing in either alone, then what appears as extitutional variation is not a departure from an otherwise settled normative core, but a visible instance of what norms already are – plural, co-produced, and never fully settled to begin with. MMOs, in this sense, do not merely illustrate Frolov's account of digital institutional complexity: they make legible a dimension that a relational conception of norms would predict from the outset, rather than treat as its exception.

Conclusion

This paper has argued that video games should not be understood merely as entertainment or as metaphorical representations of economic processes, but as fully fledged digital institutional environments. By analysing their rule-based structures and interactive dynamics, we have shown that they provide a particularly clear setting for examining how institutions organise behaviour, interaction, and evaluation.

A central contribution of the paper is to demonstrate that institutions operate not only through rules and incentives but also through socio-cognitive and affective processes. Rather than treating emotions as internal states elicited by institutions, or as properties of institutional situations, we have defended a relational conception: emotions are constituted in the ongoing interaction between agents and institutional environments, neither reducible to the individual nor to the institution alone. On this view, emotions are integral to institutional functioning: they shape how agents interpret rules, respond to incentives, and engage with others, thereby contributing to the stability, transformation, and legitimacy of institutional arrangements. The analysis of violence and reward systems further highlights how institutional design structures both behaviour and moral experience. By shaping the conditions under which actions are performed and evaluated, institutions influence how agents perceive responsibility, fairness, and consequence. Video games make these processes particularly visible by embedding them within explicit and interactive systems.

Taken together, the relational conception of emotions, norms, and affordances developed across the paper suggests that institutions themselves are best understood as fundamentally relational – constituted in the ongoing interplay between agents and their environments, rather than residing in either alone. This reading converges with Frolov's (2024a) account of digital institutions as inherently cognitive-emotional, while departing from it on the status of norms themselves (section 'Digital institutions in critical dialogue with Frolov'). Digital environments not only organise individual conduct but also shape shared emotional climates, collective attachments, and forms of coordination. This perspective emphasises the lived and processual character of institutions, as well as the ongoing interplay between rules, agents, and environments.

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Several avenues for further research follow from this perspective. Closer attention could be paid to collective emotions in digital institutional environments (Thonhauser, 2022) and to the role of language and discourse in shaping the affective dimension of institutions (Capraro, 2025). More broadly, games may serve not only as a site of analysis but also as a genuine tool of institutional experimentation. Malaby's (2009) account of Linden Lab is instructive, if oblique: *Second Life* itself is better described as an open, creative, social virtual space – it borrows the codes of video games without quite belonging to the category, since play there is possible but never imposed – but Malaby shows how Linden Lab's own employees drew on game-design principles to govern both that space and their own organisation, including a short-lived, chess-like internal game for prioritising work projects, abandoned once it produced incoherent and illegitimate comparisons. This suggests that game-like institutional experimentation carries real promise alongside real limits. These directions are left for future work; our aim here has been to establish that emotions are constitutive of institutions in the first place.

Acknowledgements. This study received financial support from the French State as part of the Investments for the Future programme, IdEx Université de Bordeaux/GPR HOPE. We would like to extend our sincere thanks to the editors of the *Journal of Institutional Economics* and the reviewers who evaluated our article.

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Cite this article: Petit E (2026). Video games as relational institutions: emotions, rules, and digital environments. *Journal of Institutional Economics* **22**, e52, 1–17. https://doi.org/10.1017/S1744137426100861

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