Play's the Thing:
A Framework to Study Videogames as Performance

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ABSTRACT

Performance studies deals with human action in context, as well as the process of making meaning between the performers and the audience. This paper presents a framework to study videogames as a performative medium, applying terms from performance studies to videogames both as software and as games. This performance framework for videogames allows us to understand how videogames relate to other performance activities, as well as understand how they are a structured experience that can be designed.

Theatrical performance is the basis of the framework, because it is the activity that has the most in common with games. Rather than explaining games in terms of 'interactive drama,' the parallels with theatre help us understand the role of players both as performers and as audience, as well as how the game design shapes the experience. The theatrical model also accounts for how videogames can have a spectatorship, and how the audience may have an effect on gameplay.

Author Keywords

performance, rules, framework, software, theatre, experience.

INTRODUCTION

The relationship between games studies and performance has been established in several fronts. Some of the foundational texts in our field are shared with performance studies, such as Huizinga's *Homo Ludens* [25], Sutton-Smith's *The Ambiguity of Play* [51], or Gregory Bateson's 'A Theory of Play and Fantasy' [6]. Excerpts from these works can be found both in *The Performance Studies Reader* [7] and *The Game Design Reader: A Rules of Play Anthology* [46]. However, we still have not yet fully realised the potential of studying videogames as performance. In particular, understanding performance as a structured, regulated experience will allow us to compare playing videogames to other performance activities, such as rituals, theatre, non-digital games and sports.

Dramatic models have been repeatedly invoked as a model to study virtual environments, as well as to suggest new dramatic forms based on digital media [18, 31, 34, 37]. However, in spite of invoking drama as a model to understand videogames, this appeal is usually restricted to very specific dramatic theory, such as Aristotle [3] or Augusto Boal [10].

Drama is a constantly invoked term in game design [19, 32, 45], to refer to different strategies to create uncertainty and tension in gameplay. Leblanc [32] specifically discusses the concept in terms of *dramatic arc*, where gameplay contributes to building tension, build up to a climax and then resolution. In game design terms, *drama* usually refers to a conflict, and the tension created around that conflict, usually building on the uncertainty of the outcome.

A dramatic model seems therefore germane to the study of videogames. Rather than applying theatre-specific theories, we will resort to performance studies to create a framework to study videogames. Although the foundations of the framework are laid by theatre, we will start establishing the correlations between videogames and other types of performance activities.

WHAT IS PERFORMANCE?

Performance studies devotes itself to the study of how human action takes place and in what context. In semiotic terms, the field deals with performance as a process of making meaning on the part of the originators of the activity and their audience.

Performance can have different definitions in English: from carrying out an action, to the degree of efficiency with which something is done, to an entertainment event (a theatrical play, a music concert, dance) that is presented in front of an audience.[1] The first and second definitions are the ones relevant here. Performance is the study of actions,

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[1] *Performance* is a tricky term to translate into other languages. It does not have a direct equivalent in Spanish, the native language of the author. All these three concepts are translated into different terms, and none has a related cognate.

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of how things are done. Theatre, music and dance activities require a certain skill to be performed, but the skill is not what is relevant. What matters is that those activities take place in front of an audience. Without an audience there is no performance, since they are the ones who make sense of the action. Schechner defines performance as "showing doing": pointing to the activity itself [49].

Schechner identifies five different types of activities that can be dealt with as performance: play, games, sports, theatre and ritual [48]. It is certainly convenient for our purposes that performance studies already deals with activities that relate to videogames: play, games and theatre. The common characteristic of all of them is that they take place separate from everyday life. These activities takes place within much quoted *magic circle* [26, 45], so that the values and rules of everyday life do not apply within it.

There are certain aspects of performance that will not be contemplated here, because they are not directly relevant to the framework proposed. One of them is social performance and different presentations of self, as studied by Erving Goffman [23]. The framework will not deal with performance as a type of rhetoric [19], although some of its implications may relate to the concept of *playformance*. Same goes for the ontology of the magic circle, or the transgression or blurring of its boundaries in games which may have an effect on everyday life [11, 36]. Although related, these issues are beyond the scope of this paper.

The Basic Qualities of Performance
Play, games, sports, theatre and rituals have five basic qualities in common: a special ordering of *time*, a special value attached to *objects*, *non-productivity* in terms of goods, *rules*, and *performance spaces* [48]. Let us describe these qualities, and how they may apply to videogames.

Time
Time is adapted to the performance, and thus liable to be structured in different ways [48]. Time can be determined by the completion of a series of steps, no matter how long it takes (e.g. a jigsaw, a religious ceremony, a baseball game)—Schechner calls this *event time*. There can also be a specific amount of time within which the activity takes place, so its length is predetermined. This *set time* is what we find in basketball, or a rite that must take place on a specific day of the year. Finally, *symbolic time* takes place when the activity represents another period of time, either longer or shorter. Theatre presents a clear example of symbolic time: a play may compress the events that take place over several days into a couple of hours.

All these time regulations apply to videogames too; similar terms have already been applied in game studies [28, 52]. Event time can be determined by how long it takes the player to achieve the goals of the game. This is common, for example, in games based on puzzle-solving like *Myst* [15]. Games can also establish a time limit to reach the goal, as in *Marble Madness* [5], where the player has to bring a marble from the start to the goal within a very tight time limit. Finally, the time of the gameworld can represent a different length of time from that of the real world, usually shorter. In *Grand Theft Auto: Vice City* [44], for example, a day lasts twenty minutes in real time.

Objects
Objects in everyday life have some sort of worth; borrowing Marxist terms, they have *use value* (they are useful, e.g. tools or reference books, basic furniture) or *exchange value* (they are worth money or a prize, e.g. an antique object) [50]. In performance, objects acquire a meaning and value during the performance that does not correspond with its value in the world outside of it: "[…][T]hese objects are of extreme importance, often the focus of the whole activity." [48]. Think of a sword in a theatrical play, which may look elaborate but it may be made of painted wood—its exchange value and use value in everyday life is very low, but it has a high use value in the play, since it can kill other people in it. The money in the board game *Monopoly* [16] is clear example, since its exchange value outside of the game is null, but it does have a very high exchange value in the game. We can continue extending the comparison to game tokens, or the ball in certain sports (e.g. football, basketball). As Schechner notes, the disparity between the value within the performance and outside of it is another indicator of the separation between performance and every life [48].

In videogames, the value of an object is related to the effect it has in the game. For example, *in The Legend of Zelda: Phantom Hourglass* [39], there are many items that have a high use value. Heart containers and potions improve the health of Link, the player character. The grappling hook allows Link to reach places that are otherwise inaccessible, by making a tightrope between two poles, or by dragging Link to a heavy object when it reels back. The player can also find rupees throughout the quest, which have exchange value in shops, and can be used to acquire new objects, which in turn may have a higher use value (e.g. potions that restore health).

Non-productivity
The performance does not produce money or other goods that maybe useful outside of it. This quality, based on the definitions of play by Huizinga [26] and Callois [13], is debatable (see [28, 48]). Gambling and professional sports are two examples that challenge the concept of non-productivity, since playing them produces a material benefit (or loss) in everyday life.

Videogames take place within a virtual environment, which makes it difficult for its outcome to be anything material in the real world. [2] On the other hand, there are also

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[2] Note that we are only referring to material goods; other effects may transcend the videogame space, as in learning or improving eye-hand coordination.

professional players that make a living on videogame competitions. MMORPGs also challenge the division between the virtual world and everyday life: there is a market of *World of Warcraft* [9] high-level characters and items for sale in the real world.[3]

Rules

Performance activities are regulated; Schechner notes that rules specify how the activity takes place and, more importantly, set the activity aside from everyday life: "[T]he rules are designed not only to tell the players how to play, but to defend the activity against encroachment from the outside." [48]. The goals of the activity are also implicit in the rules: from the winning conditions of the game, to having the gods hear one's pleas. In theatre, the rules are part of the dramatic text, or the set of movements that will constitute the theatrical performance, as we will see below.

Rules also establish the proper form of the activity [48], and although they can be adapted for special circumstances, they define what the ideal form of the activity should be, its proper form. For example, in a school playground, the dimensions of a football field may be adapted to whatever room is available; the distance between the goal posts may be determined by the space between two waste bins.

Play presents an interesting challenge to the concept of rules—Schechner seems to understand play as "free activity," where the participants regulate their own behaviour, usually as they perform it. This divergence seems to relate to Callois' dichotomy between *paidia* and *ludus* [13]. The term *paidia* refers to free play, activities that are improvisational, spontaneous and unregulated, like a cat playing with a ball of wool. Callois alludes to the potential destructive (or at least disruptive) nature of *paidia*, which is lead by the impulse to touch and manipulate objects at hand, and then set them aside; thus, experimentation seems to be an important part of the activity. *Ludus*, on the other hand, is play that is arbitrarily constrained in order to achieve a specific goal. This is regulated play, which requires the player to acquire specific skills in order to reach that goal. Puzzles, and games that have a set of rules (from Poker to *Monopoly*) belong to the *ludus* category.

When it comes to videogames, rules are enforced by the code of the program(s) that make up the game. Thus, the rules of the game are always the same. Variations to the rules have to be supported by the code, such as different levels of difficulty. Cheat codes and hacks can also change the nature of the game, but that makes the game different from its proper form.

Performance Spaces

Performance activities are a shared and regulated experience within a space. The rules of the performance are

[3] See for example http://www.playerauctions.com

effective only within a specific space (again, the 'magic circle'), which at times is purposely designed for that activity, thus reinforcing the idea of separation from the rest of the world. Religious temples, sports stadiums, theatres and game boards are all performance spaces. These spaces are also designed to include the audience, who are a fundamental part of the performance.

However, the performance itself can create the space ad hoc, as was the case of playing football in the playground above. A game of tag turns a park into a playground, the players themselves set the limits of how far they can run. Street theatre can turn a corner into a stage. The magic circle is transportable and flexible, and as permeable as the performers make it to be.

In the case of videogames, the separation between real space and performance space may seem clear, since the performance space is represented on the screen, and does not exist in the real world. However, the videogame space must also extend beyond the screen—the input of the player (from keystrokes to shaking the controller) takes place outside of the represented digital space. Similar to board games, where the players sit around the board, players are usually situated outside of the play space itself. Videogame players are thus both performers and spectators, as we will see below.

Thus, there is a multiplicity of aspects that define the space involved in videogames as performance, from the represented space on the screen, to the physical space the player is occupying (see [40]). The transitions and negotiations between these aspects are part of the process of 'making meaning' that takes place during the performance.

Now that we have established how videogames relate to other forms of performance, we will outline the framework that allows us to extend the comparisons between pre-existing performance activities and videogames.

PERFORMANCE FRAMEWORK FOR VIDEOGAMES

The basis of this framework is the theatrical performance model, which is then applied to software and games as performance. These three activities (theatre, interacting with software and playing games) constitute the basic layers of our performance framework. Since Schechner does not deal with games in much depth, we will make use of the terms set up by the MDA framework [27]. With this approach, we are not trying to equate theatre to games, but rather we explore productive methods and vocabulary from related forms (theatre, sports, ritual...) to understand videogames as a performance activity.

Theatre is the basic reference model to study videogames as performance for several reasons. First of all, it is a familiar performance activity, so it is relatively easy to give accessible examples. Also, as we saw above, theatre has already been used as a reference model in game studies and related fields [18, 31, 34, 37], so there is a pre-existing relationship.

Theatre also has the most elements in common with other performance activities [48], including games [42]. We have already seen how the basic qualities of performance also extend to videogames, but there are other factors that reinforce the relationship between theatre and games. Some videogames can be played by a group of people, in the same way that most theatre plays need a group of people to be staged. Videogames may also have audiences—think of videogame tournaments, for example.

The theatre model

The theatrical performance model follows a tri-partite structure, which accounts for the different components involved in theatrical performance. The model is based on the ones proposed by Patrice Pavis [43] and Richard Schechner [48] respectively. Pavis is a semiotician concerned with the mise-en-scène of written plays, which is the core of the Western tradition. Schechner, on the other hand, intends to include all traditions of theatre, including dance and plays that are not based on a written text. Based on Pavis' proposed terms, there are three basic components: the *dramatic text*, the *performance* and the *mise-en-scène* (see Figure 1).
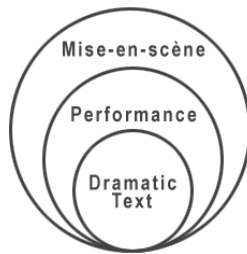

Figure 1: The theatre performance model.

Dramatic Text

The dramatic text is the script that is pre-set before the performance. In Western theatre, this means the written text of the play, and the stage directions [43]. Schechner refers to the written text as *drama*, which can also be "[a] score, scenario, instruction plan or map," [48]. Schechner distinguishes drama from script, which is "the basic code of events", the steps that are followed in the performance, e.g. how the participants should move in a dance. With this distinction, Schechner is trying to include traditional theatre, whose pre-set actions and text may be transmitted orally, rather than in written form. In Aristotelian terms, the text is potential and needs to be actualised by the performance. What it can get to be will be determined by the rest of the components of performance.

Performance

The term *performance* within the context of this framework refers to the actors playing, their voices and movements on the stage;[4] Pavis calls this *concretizing* the text [48]. Schechner uses the term *theatre* to refer to this component, "what the performers actually do during production." [48]. A play may be written for the stage, but it does not become a play until it is enacted. As Pavis notes, enactment does not mean completing the text, or translating the text into movement—it is the interaction between the dramatic text and its concretization. A text can mean something completely different depending on how the actor's delivery and movement, even if the words are the same. For example, in Shakespeare's *The Taming of the Shrew*, the actress can perform Katherine's final soliloquy literally, to signify the submission of the character to her husband; the actress can also imply with gestures that she does not mean it, making her rebellious until the end (see [25]).

Mise-en-scène

The last component is the mise-en-scène, which is the confrontation of the dramatic text and its performance [43]. This is the process by which the audience makes sense of the dramatic text and the actions on the stage. Schechner refers to this wider circle as the performance, "the constellation of events […] that take place in / among both performers and audience from the time the first spectator enters the field of performance […] to the time the last spectator leaves" [48].

The audience is thus indispensable to theatrical performance, since they complete the process of making meaning. This is relatively easy to understand: if there is no audience in the theatre, the actors enacting the play are rehearsing, but it is not a show. If the text is read, the reader as audience can imagine the characters and how they speak and move, but since there is no actual enactment of the actions, there is no performance either.

Modern Western tradition usually establishes the performance as separate from the audience, although this division (the usually misunderstood concept of *the fourth wall*) is often challenged and subverted. There are kinds of theatre which encourage audience participation, such as puppet theatre for kids, or Boals's method for the Theatre of the Oppressed [10]; Brechtian theatre also encouraged playwrights and players to acknowledge the audience and talk to them [12], just as the chorus of Greek plays talked directly to the audience.

Performance in Digital Media

Videogames are essentially computer software, which can also be studied in terms of performance using the terms established by the theatrical model. The computer becomes

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[4] I am using Pavis' terms in order to be consistent with the three-partite division, and also because his three basic concepts in map well with Schechner's.

the performer, whereas the interactor completes the process of making meaning. The cybertext model proposed by Aarseth [1] is also three-partite, and intends to reflect its performative nature.[5] Although it has some points in common with the model proposed here, the concept of cybertext focuses on the production of the text itself rather than the interaction with it, which is our concern here.

The three components of computer software as performance are the *code*, *runtime* and *interaction*. These components are parallel to those in theatrical performance (see Figure 2).
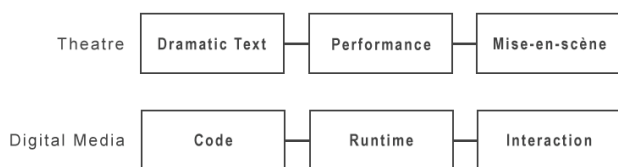
Theatre | Dramatic Text — Performance — Mise-en-scène
Digital Media | Code — Runtime — Interaction

Figure 2: Digital media as performance can be understood in parallel to theatre performance.

Code

The code of the videogame works like the text of a play: it is the software itself. The code is the data on a disk or a hard-drive, the set of instructions that the computer has to follow. If the code contains errors, then the program will either not work properly or not run at all. As Klastrup mentions, the code is virtual, "is still something 'in potentia'", which does not become concrete and actualised until the code is used by someone [29]. This echoes the Aristotelian notion of the dramatic text that we applied before.

Runtime

Runtime refers to the computer executing the code, the program working as it is expected to. It is the process taking place after the interactor starts the program (e.g. by typing a command, pressing the start button, loading the program to a browser). Unlike theatrical performance, where the actors can ad-lib or ignore the stage directions, computers must follow the code and cannot alter it.

Interaction

Similarly to the mise-en-scène of a play, it is the interactor who closes the circle of software as a performance activity.

[5] For Aarseth, this structure is triangular; in his own words, it is a "feedback loop" (Aarseth 1997). There is the verbal sign (the text itself in the literary sense), the medium where it is presented, and the operator, who is the person who interacts with the system (the interactor in our terms)—without the operator, there is no cybertext (as is the case in theatrical performance or games).

In the same way that a theatre performance does not happen without an audience, interactive applications (as is the case of videogames) may run but are not functional until there is input from the interactor, since someone has to complete the process of making meaning. The difference with theatre is that the interactor has an effect on runtime—the computer needs the input of the player to produce an output, following a conversation model [31]. The interactor is thus an active performer along with the computer. If in theatre the division between performance and mise-en-scène is often challenged and broken through, in software that transgression is obligatory for the performance to take place.

Games as Performative Media

Games are one of the basic activities that Schechner identified as performance, although he does not specify how the theatrical model applies to them. Therefore, we are going to use a pre-existing model, the MDA framework [27], to account for games (not necessarily digital) as performance activities. The MDA framework is particularly adequate because it is also a three-partite model, and incorporates player's experience. MDA was conceived as a tool to bridge game design and development with game criticism and technical games research; by including these terms in our framework, we can extend that bridge to performance studies.

MDA stands for the three components of the framework: *mechanics*, *dynamics*, *aesthetics*. These three components are parallel to the ones previously established by theatre and digital media, completing the structure of the performance framework for videogames (see Figure 3).
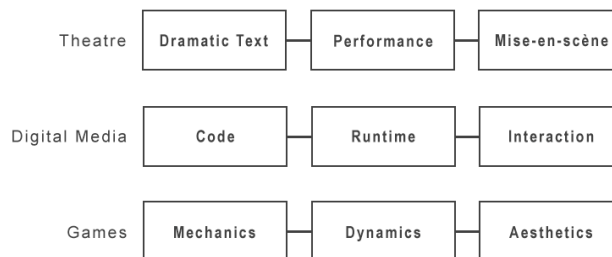
Theatre | Dramatic Text — Performance — Mise-en-scène
Digital Media | Code — Runtime — Interaction
Games | Mechanics — Dynamics — Aesthetics

Figure 3: Performance Framework for Videogames.

Mechanics

Mechanics are the design counterpart of the rules of the game [27]. In videogames, they become incarnated in the code, which is the system that enforces the rules. In order to include non-digital games, we will extend the concept of mechanics to all the formal aspects that are needed to play the game, from the rules themselves, which tell the player what she can or cannot do, to the objects needed to play the game and the space. Objects have special values inside the performance space, as we saw above; in the specific case of

games they also have rules attached to them. Chess is a clear example: the King is the most valuable piece of the set; if it is captured or in a situation where it cannot escape capture, the player who owns it loses. Each chess piece moves in a specific way, determined by rules: bishops move diagonally; the King moves in all eight directions but only one square at a time.

Game mechanics are therefore parallel to the computer code and to the dramatic text—the pre-set text that constitutes the foundation of the performance.

Dynamics

The dynamics of the text consist of how the mechanics unfold, the events that take place when the game is played; they are the counterpart of the game system. Hunicke et al. actually refer to it as run-time behaviour, making the connection with the runtime of the software very clear [27]. The dynamics of the game refer to how the rules are performed—here is when the comparison with theatre is particularly relevant. The rules are not being enacted or translated, they are producing specific movements and behaviours with the objects in the game. As the player understands the dynamics, she comes up with different strategies. *Tetris* is a good example: players can leave a single column free, in order to accommodate a long piece and clear four lines at a time. However, the higher the blocks get while waiting for that long piece, the more difficult the game gets, since there is less and less room to manoeuvre.

The game dynamics are parallel to the code running – the system is set in motion both in the game and the software – and to the performance in theatre.

Aesthetics

Aesthetics is the most ambiguous concept of the MDA framework. It is presented as the counterpart of *fun*, which in itself is a very broad concept. Hunicke et al. define it as "the desirable emotional responses evoked in the player, when she interacts with the game system" [27]. Aesthetics refers to the experience of the player while playing the game, which is the result of the interactions of the player with the system. The implication is that the experience of the player can be shaped by the game design, as a result of the rules set in motion and understood by the player, who interacts with the game.

The relationship between the three components (mechanics, dynamics, aesthetics) is key to understand games as performance. From the point of view of the designer, the mechanics generate dynamic system behaviour, which creates certain aesthetic experiences [27]. The player stands at the other end of the cycle, starting with the experience created by the game, then devising the strategies to play the game, to finally figure out the mechanics of the game (see Figure 4). Again, it is necessary for the player, as it was for the audience and the interactor, to make sense of the system in order to complete the performance. Knowing the rules of the game does not mean that the player knows how the mechanics work. For example, in *Mario Kart: Double Dash* [38], the instruction manual lists the different items that appear randomly during the race. Only by playing the game does the player realise that the items are actually issued depending on where she is in the game, and which character she is controlling. If the player is at the back of the race, she will get power-ups that allow her to accelerate and catch up; if she is at the top, she will only get obstacles to put on the way of the racers behind.

Figure 4: The relationship between game designer and player according to the MDA framework.

The MDA framework presents another relevant parallel with theatre. The playwright can write the text, but eventually has little control over how the text is performed and how it is received. Unless the playwright actually works with the actors while they prepare the play, theatre companies appropriate the dramatic text, cutting or extending it. The performers can ignore the stage directions, and eventually make their own version; the audience will finally make their own interpretation. A version of *A Midsummer Night's Dream* in contemporary English may become popular amongst younger audiences, but it may be considered blasphemous by Shakespeare buffs. In a similar way, the game designer does not have direct control over the experience of the player, particularly because the game needs the input of the player to become a performance. The MDA framework gives an idea about how the designer can have an influence on player's experience, but in the end the experience depends on the player herself.

THE PLAYER AS PERFORMER AND SPECTATOR

This performance framework brings about a series of implications in relation to the roles of the player and the audience in videogames. The player is on the side of the aesthetics, since she is the one who experiences the game. Thus the player parallels both the audience of the theatre play, and of the interactor of software. The player is an active performer because she is also an interactor; but she is also the audience of the performance, since she is the one who makes sense of the system and interacts accordingly. The look-and-feel of the game and specific triggered events are also part of the experience of the player as spectator of her own interaction. The *juiciness* of a game is the amplified (and at times excessive) audiovisual feedback that the player receives after every interaction [21, 22]. The action can be as minimal as just hovering over a button, which may trigger off a musical note and make it sparkle. Experimenting with the system of a game, to observe the

relationships of causality between actions and outcomes, is both part of the role of the player as interactor as spectator.

VIDEOGAME SPECTATORSHIP

The performance framework also explains how videogames can have a spectatorship. The player performs as she plays, so other people can watch that performance too. Some games foster an audience more easily because of their ties with other performance activities, such as *Dance Dance Revolution: Ultramix 3* [30], where players perform a dance of sorts. *Rock Band* [24] is a band simulator, which attempts to reproduce the experience of being a rock star; although it provides an in-game audience, it also lends itself to being watched by people who are not playing. Fighting games such as *Street Fighter II* [14] are also a good example, given their similarities to spectator sports such as boxing or wrestling. However, there are games that bear no obvious relation to other performance activities, and yet they can have a large spectatorship. One of those cases is *StarCraft* [8], whose tournaments are broadcast in South Korean television, and professional players are not only big stars, but also release their best matches on DVD [17].

Games can also earn a spectatorship when players prove to have great skills, or find exploits in a game. Speed runs (i.e. finishing a game in the least time possible), or playing a game in the highest difficulty mode are types of gameplay that lend themselves to having an audience. These activities usually find a spectatorship through the distribution of video recordings of gameplay, rather than watching them live.

The audience must understand what the mechanics of the game are, they must be able to make sense of the actions and events in the game, otherwise they will not watch. The spectatorship of *StarCraft* can be accounted for by the extreme popularity of the game in Korea, which means there is a substantial audience that will understand what professional players do.

RESTORATION OF BEHAVIOURS

Considering videogames a performance activity also allows us to understand better the role of the player as performer. The process of *restoration of behaviour* [47] helps us understand how the mechanics of the game shape the player's actions. According to Schechner,

"some behaviors—organized sequences of events, scripted actions, known texts, scored movements—exist separate from the performers who 'do' these behaviors. Because the behavior is separate from those who are behaving, the behavior can be stored, transmitted, manipulated, transformed" [47].

These behaviours are part of the dramatic text—as Schechner noted, they are scripts (as opposed to a written text) [48]. The process of performance restores those behaviours; using Pavis' term, the performers concretise those behaviours. The scripts are in potentia, while they can

be actualised in different ways. Folk games are a clear example of how restored behaviour occurs in games: it is difficult to determine what the 'original' or 'ideal' set of rules is for games like Parcheesi or Old Maid. Each time the game is played, the rules are concretised differently, depending on the socio-cultural setting. House rules are evidence that the game rules of folk games can also change from family to family, even within the same culture depending on the context. [41]

Thus, while the behaviours themselves are part of the mechanics, the process of restoration falls into the dynamics and the aesthetics of the game. In relation to videogames, it is a more complicated matter, since there is a range of strategies in which behaviour can be restored. This range parallels finely with Juul's distinction between games of progression (having to follow a specific set of steps in a certain order) and games of emergence (finding new behaviours within the constrains of the game system) [28].

On the one extreme, we have games of progression, which pre-suppose an ideal walkthrough. In these games, the player has to find out how to restore the behaviour, follow the script that is expected. Music games such as *Rock Band* require that the player hit the notes in synch with the music. There is a definite satisfaction in playing along with a pre-determined pattern, similar to the pleasures of singing in a chorus or participating in a folk dance. In these games, the challenge lies in finding out what the best ways to synchronize are—these are the strategies that players have to come up with. Adventure games also belong to this type of game, since they usually have just one way to be traversed. They are puzzle games, which means that they only have one solution. The pleasure of restoring behaviour in adventure games such as *Myst* resides in discovering what that behaviour is by exploring the world, identifying the problem and finding its solution.

On the other end we have games of emergence, where the goals are either very broad or set by the player. This was the case of the first instalment of *The Sims* [35], for example. There may be certain dynamics that the makers have designed the game for, but players come up with their own goals if the mechanics allow them. Schechner specifies that the behaviours can also be invented by the performers [47]. The pleasure of sandbox games derives from experimenting with the mechanics, coming up with one's own goals, and trying to achieve them. The performance space is also a place for experimentation: since it is marked as separate from everyday life, performers can do things they would not be able to do outside of it.

Progression and emergence mark the ends of the spectrum, and although we have given examples from the extremes, most games are somewhere in between [28]. Thus the performance of the player is a negotiation between scripted behaviours and improvisation based on the system. Scripted behaviours give more control to the game designers, the mechanics are dictating the dynamics and aesthetics as

much as a playwright determines the mise-en-scène. Complex mechanics that the player can experiment with, on the other hand, give more room for the player to generate her own experience.

FUTURE APPLICATIONS OF THE FRAMEWORK

The application of the theatrical performance model to videogames as software and games has enabled us to propose a performance framework for videogames. This framework has provided us with some insight on the nature of the player as performer and audience in the game. Nevertheless, this is just the foundation to further inquiries on the performative aspects of videogames.

One of the most promising avenues for further work is the exploration of the in-between spaces between its elements, both between the layers (theatre, software, games) and between its columns. The role of the player, as we have seen, is just one element that straddles between the role of the audience and the interactor. We can also explore the relationship between the performance and mise-en-scène in theatre and extend it to videogames. The construct of the fourth wall has been often challenged by theatrical performance through history. Based on this framework, we can apply Brecht [12] to study videogames, for example—is there an equivalent of the Alienation-effect (*Verfremdungseffekt*) in videogames? Can we make games following Brecht's tenets for epic theatre?

Another potential source of insight is identifying where narrative may figure in this framework. Again, the comparisons with theatre may be productive, since not all theatre contains a narrative (e.g. Balinese theatre, as described by Artaud [4], or contemporary dance). Each component of the framework establishes a different relationship with narrative, so that we may be able to identify different types of narrative in relation to videogames.

Performance studies can also help us understand the relationship between videogames and their non-digital counterparts. For example, Daniel Mackay applied Schechner's theatrical performance model to table-top role-playing games [33], which will make it very easy to extending the comparison to computer role-playing games (CRPGs). The contrast between them will probably help us understand, amongst other things, why it is so difficult to actually role-play in single-player CPRGs.

These are just some examples of the possible applications of this performance framework for videogames. Videogames are a performative medium; we have just started understanding what that actually implies.

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