Abstract

This dissertation concerns the phenomenon of a parallel model of cutscenes and

gameplay in many narrative-centred games and aims to find an alternative way of

merging cutscenes with in-game interaction.

It begins with a thorough examination of the role cutscenes play in a game and how

they conflict with the gameplay. Then, it focuses on deconstructing the conflict from

the temporal and spatial conditions in cinematic scenes and games. Two narrative

techniques from experiential film, spatial montage and interactive montage are

exploited in the mitigation of spatial and temporal conflicts between cutscenes and

gameplay.

With practice-based research methodology, a game artefact employing the two

techniques is created and analysed to explore how temporality and spatiality influence

the merging between cutscenes and gameplay. In the process of reflective production,

the project puts forward the application of experimental narrative skills into games

and provides some useful insights for future game narrative design.

Keywords: game narrative, cutscene, cinema, spatiality, temporality

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1 Introduction

While narratives in computer games have existed since their born, the form of narratives has branched out tremendously. From mere text to pixel-style graphics, from audio-visual with pre-rendered video content to real-time rendered interactive 3D content, computer games, later video games, have adopted many traditional narrative media to "make sense of the in-game situation(Nitsche, 2008)." King and Krzywinska (2002) notice a movement of adventure-type games from text to pictures and subsequently to three-dimensional graphics. As they identified some overlapping areas in games and cinema, such as cutscenes and point-of-view, they also foresee the "movie envy" games developed on the way to closing up the gap between high-quality pre-rendered cutscenes and low-quality interactive gameplay.

Since then, real-time computer graphic has developed vastly and game engines now can produce photo realistic cutscenes in real-time. Pre-rendered videos are replaced by more realistic machinima, and the visual difference between cutscenes and interactive gameplay has become indistinguishable. But in most story-based games, cutscene and gameplay are still two separate entities that only cut into each other linearly but not merging. There have been some successful attempts trying to add interaction into the cutscene, for example, quick-time events that originate from interactive movies in the 90s, have been added into the toolbox of story-based gameplay. However, cutscenes tend to take the control out of the player's hand whenever it shows up, while quick time events during cutscenes would have to disturb the delivery of narrative. Quick time event does not resolve the real conflict of interactivity and narrative. But the problem is, in what ways cutscene and gameplay

are incompatible? Why do they show such incompatibility when stitched together? And finally, what are some possible techniques of merging cutscenes and gameplay in ways that are alternative to the solutions in games now?

The argument that the use of cutscenes deprives players' agency leads us to the conflict between narrative and interaction. It is argued that mixing narrative and interaction is a balancing act between control and conflict; the greater the control players have over the game story, the more possible they manipulate and generate a mediocre version of what might otherwise be interesting (Costikyan, 2000). In this paper, the incompatibility of narrative and interactivity is not only a phenomenon but a conflict concerning the changing ontological status of the narrative when it is embedded into interactivity. We argue, based on Koenitz(2018)'s ontological mapping of game narrative, that when a narrative is constructed in interactive ways, it does not belong to its original definition of a unique representation of story event, but changing its ontological status, becomes an experience. For the traditional perspective of narrative, we promote the formalist approach of narrative; for the interactive one, we promote the experiential approach of narrative. This confirmation would partly conciliate the notion that narrative is a passive and prescriptive representation that interactivity cannot accommodate because we change the perspective and recognize narrative as the experiential result that interaction can provide.

With this premise, cutscene becomes a special entity: on the one hand, it is a representation of total deprivation of any control of the player, returning to the pure cinematic form of narrative, on the other hand, the flexible combination of multiple

¹ The names of these two approaches are borrowed from Nitsche (2007) 's definition for the two approaches taken by existent analysis of time in games.

cutscenes is capable of creating various player experiences. It is an entity that concludes both the passive, traditional definition of narrative and the active, experiential definition of narrative.

Thus, since our focus is on cutscenes, it is not enough to only refer to literature in game studies, but in film studies, for, in essence, cutscenes are regarded primarily as pieces of cinema, rather than non-playable sequences. It is worth asking what possible narrative tools cinema has offered to interactivity and what interactivity changes for its convenience.

The principal aim of this article is to provide an alternative visual representation method to the current method of assembling cutscenes and gameplay linearly. By investigating the ontological difference between cutscenes and gameplay, and exploit some narrative techniques from experimental narratives and interactive media other than games, we create an artefact as the practical result of this research. The artefact seeks to offer an applicable game design method for embedding cutscenes.

It must be noted here, that my conclusion and the artefact contribute to a possible solution to my research problem. Moreover, this research does not put games under an orthodox definition but takes it as a procedure that offers players the opportunity to create meaning in a cluster of media texts, whether they are narrative media or procedural media.

In the literature section, we are going to discuss how we define game narrative in this particular research, what role cutscene plays in game narrative, and then try to address the incompatibility of cutscene and gameplay from the spatiality and temporality of

cinema and game. After identifying the conflicts under these two perspectives, we draw inspiration from some directions pointed out by Manovich(2001), Juul(2005), Nitsche(2008), and Hales(2020), coming up with our ideas of mergence, which are spatial and interactive montage.

In the methodology section, we introduce the research methods. By prototyping a game to concretize the ideas, reflecting on action, and analysing details of the production with multimodal analysis, we would be able to build a rigorous practice-based research methodology. This section would also explain the rationale and shortcomings of this framework, and also point some directions for future studies.

In the analysis section, firstly, the project overview provides a holistic account of how the game was designed with support from the literature. And the multimodal analysis is a detailed documentation of all the meaningful semiotic modes, and how they work in media ensemble to weave an experiential goal.

The discussion section is a reflection on how spatial montage and interactive montage factually contribute to engaging players into a transmedial experience rather than isolating cutscenes from the game and argue its legitimacy.

2 Literature Review

2.1 Game Narrative: definition and ontological changes

Before discussing the role of the cutscene in video game narratives, it is useful to consider the definition of game narrative, and how it differs from traditional narratives.

A traditional definition of narrative, without specific consideration of interactivity,

can be "the representation of an event or a series of events (Abbott, 2002, pp. 13-14)". But in the field of game studies, narrative has a wide range of contradictory meanings and associations (Juul, 2005) and does not have a unified ontological status.

For example, Ip(2011) offers a detailed account for story, plot, and narrative, and recons a story is a sequence of events bounded by the laws of time; a plot is a causal chain that links the events; a narrative is "the unique way in which story is being presented to the audience (p.107)". He suggests the narrative is the demonstration of how events are expressed, the order in which events are recounted, the duration and frequency of events. In traditional narrative media, every narrative is fixed as soon as the artefact is completed. But for games and interactive media, narratives stay malleable for every player and create multiple meanings with their malleability. Thus, the ontological status for interactive narrative became a problem: how much does interaction influence representation? Is the nature of narrative changed by such influence?

Koenitz (2018) uses a two-dimensional mapping of many definitions of narrative in games to illustrate how **player agency** and **media specificity** show impacts on the traditional definition of narrative in game studies.

Koenitz (2018) finds that user agency is universally recognized to have considerable influence on narrative, as users can make decisions, change the order of events to happen, selecting different choices, and co-creating the story by what they do. The disagreement, he finds, lies in how much digital procedural media can mediate the representation of narrative. For instance, Juul (2001) and Esklinen (2001) denied games as a narrative medium, and thus took a stance of low media specificity; while

Salen and Zimmerman (2004) saw narrative as an experiential quality and thus took a stance of high media specificity.

When the game narrative is approached from a traditional perspective, it represents a formalist view, which restricts the definition by essential elements; while the interactivity adds an experiential perspective to the game narrative, that focus on how a player understands narrative in games.

This ontological conflict consequentially involved many narrative elements in games into a dilemma, but especially cutscene, which is a passive representation demonstrated to players but counts as part of the experience too. It is usually criticized for disrupting the flow of gameplay, depriving player agency, and the most harmful one, emulating movies, which results in not realizing the potential for games. Surely, cutscenes also have their advantages in storytelling, but it is more like hindsight after it was implemented and stays popular in many genres. In the next section, the two notions of cutscenes are demonstrated, and based on this understanding, we are going to explore why it is difficult for gameplay interaction and cutscene to come into one being in games.

2.2 Cutscene: justification and fallacy

Cutscene is perhaps the most common method of narration in video games (Ip, 2011). A well-recognized definition of cutscene comes from Klevjer (2013): a cut-scene is a cinematic sequence that suspends regular gameplay to convey plot, characterization, and spectacle. The definition addresses the kinship between cutscene and cinema. And this nature makes cutscene a game element far from the interaction.

Discussion about the different engagement style of cutscene and gameplay is not scarce, and thus produce a debate about whether cutscene "is injurious to the video game experience as a whole (Newman, 2004)", or is an integral part of a game.

The first notion, named "radical ludology" by Klevjer (2002), makes a distinction between the activeness of gameplay, and the passiveness of cutscene. For example, Juul (2005) suggests cut-scenes are problematic often because they prevent the player from doing anything and are in a sense a non-game element in a game. As Vosmeer and Schouten (2014) argue, the different engagement style of a "lean-back" medium that allows the user to sit back, relax, and receive information in a passive manner such as movie and a "lean-in" medium in which the user interact and control the flow of information, such as video games needs to be considered when merging game and film experience, and how to solve the constant changing of engagement degree is important. Similarly, Jenkins (2004) also believe that this conflict is an issue to be solved, and argues that cinematic cutscenes are fallbacks of more mature interactive storytelling skills yet to be found, and believes game designers are apt to deliver better narrative experiences in games.

While many scholars, as above, has considered the incompatible conflict of cinematic scenes and interactive gameplay a problem and try to solve them, others argue cutscene has its role to play in video games. And "hybridity and tension", in other words, "need not be a bad thing" (Klevjer, 2013, p305).

In his "Defense of Cutscenes", Klevjer (2002) asserts, "even if the player is denied any active input, this does not mean that the ergodic experience and effort is paused.

A cutscene is never truly 'cinematic', no matter how poorly implemented it may be.

(p.195)" And he recognizes cutscene affecting the rhythm of gameplay a game aesthetic. Cheng seconds this idea, arguing that when players switch between the gameplay interaction and the semiotic systems of cinema, a transmedial mental process occurs, and this can become "a new kind of artistic language, developing its own rules (Quoted from Klevjer, Cheng, 2007)" Salen and Zimmerman (2004) also argue from a functional perspective, that although cutscenes interrupt player interaction, they directly support narrative on many levels.

Since there has not been one narrative skill that proves more effective than the cutscene, and cutscene has indeed become a standard in interactive storytelling, the justification of cutscene is understandable, and the summary of functions of cutscene also brings much insight for a more holistic scope in narrative delivery techniques.

And the conflict between cutscene and gameplay seems not so irresolvable. Cheng (2007) notices some attempts in adding interactivity into cutscenes. His examples include quick-time events in *Resident Evil 4 ()*, limited camera or avatar movement during a cutscene in *King Kong*. Although, QTEs in *RE4* bring players only closed interactivity where the player can determine in which order already generated elements are accessed, and the camera and avatar movement in *King Kong ()* also just offer limited interactivity, what matters most is the players' feeling of a sense of agency from the way the video game responds to her input. When narrative merges with interaction, the experiential quality of the whole transmedial process must be put in the front.

Based on this notion, he also raised an interesting point, that in *King Kong*, while the player plays both as Jack Driscoll in the first-person point of view, and as Kong in the

third-person point of view. The switch between perspectives essentially constructs a fully playable cutscene that more closely resembles a cinematic edit instead of only a switch mechanism.

The thing that makes this argument interesting is that on the one hand, it considers two gameplay sessions, observed from two different cameras, as two continuous cinematic shots; on the other, it resembles the editing skill in the film as a mechanism in games. This provides valuable insight for our argument in the next section. We are going to look at cutscene and gameplay from a formalist perspective, to explore how the construction of cutscene refuses participation of interactivity.

2.3 Cinematic space and game space

As we observe the linage of adaption of cinematic scenes into games, we realize that the pioneers of cutscenes in the 1980s, for example, *Pac-Man (1980)* and *Super Mario (1985)*, did not necessarily imitate cinematic scenes. They are more graphic than cinematic, and they don't have recognizable features of perspective scenes like in cinematic cameras; they are isometric at most while the representations are in no way realistic. It was not until the application of 3D rendering in computer games that, as Brooker(2009) argues, games attempt to incorporate cinematics and work towards the total reproduction of mainstream Hollywood movies. After the commercial failure of interactive movies, the incorporation mainly concentrates on cutscenes.

Essentially, cinema and video games both are dependent on the illusion of movement. King and Krzywinska (2002) believed that cinema and video games have similar representational capacities. Based on this consensus, Nitsche (2008) raised the

concept of the virtual camera in game scenes as opposed to physical cameras that are used in cinema.

Virtual camera partly solves the cognitive conflict between gameplay and cutscene, recognizing them both as a projection of the game world onto the viewport as a resulting mediated plane. It offers an opportunity to also recognize the result of interaction as part of the moving image and allow us to discuss it on a representational layer.

Nitsche(2008) points out, the virtual camera has to cater to and support interactive access to the game world. They are usually limited to only one point of view or a panorama to prevent too complex camera work from obscuring optimal interactive access. Manovich(2001) also proposes that "[first person shooters such as Quake] simulate the continuity of a human experience, guaranteed by the law of physics."

It would not be difficult to see the necessity of virtual cameras taking features of art cinema. For example, Brooker (2009) argues that the trajectory within games has been away from emulation of cinematic and towards a unique mode of visual storytelling that is distinct from mainstream Hollywood. This study emphasizes that the dominant camera positions of first and third POV, that their long takes and lack of cuts aligned them with art cinema instead of mainstream Hollywood. Similarly, Tong and Tan (2002) suggested, the continuity of game simulation in three-dimensional space is what departs from the rules of conventional cinema.

What is deemed interactive access for Nische(2008) and continuity of human experience for Manovich (2001), poses similarity to realism in art cinema. As Bazin

(1967) proposed, the language of art cinema uses lengthy takes and depth of field to forces the spectators to participate in the meaning of the film, to perceive the ambivalence of reality directly. The lack of cuts forbids the camera to add meanings to reality, but only reveals the objectivity of it. And that count exactly as a prerequisite for successful interaction. The player must learn their situation in the game space, whether they can kill the boss with another attack or not, whether to run away from a fight or not.

Taking this stance, we realize the narrative functions of cutscenes, for instance, to introduce characters, story and settings, are to offer some established understanding of the game world, to guide players' perception, instead of putting players in a complex game space with a complete agency, for fear that players find ambiguity in the goal they have to reach and thus ruin the experience.

Montage allows moving images to create meanings not contained in the images themselves but alluded from the juxtaposition, while long takes engage spectators into the process of meaning-making, creating their understanding of a rendered scene. Therefore, in the view of a virtual camera, the juxtaposition between a continuous gameplay scene and a cutscene is itself a shift of meaning-making mode. The meaning of games happens in a continuous space, while the meaning of cutscene happens in the conjunction of discontinuous spaces.

2.4 cinematic time and game time

Temporality is as important as spatiality in both cinema and game. However, it is seldom compared between the two media. As much as media such as film, television,

video are termed as *time-based media*, games, sharing a similar interface, is never specified in that term. It is likely because games are experienced in a different temporality. In this section, we compare the temporality of cinema and games from the experiential view.

The smallest unit in constructing a piece of cinema is still photograph, which engraves an ephemeral moment in time. Although a photograph engraves "the present", in the process of which, they became inevitably past (Doane, 2002). When the afterimages form the illusion of movement, it is argued that "The spectator always sees movement as being present (even if it duplicates a past movement). (Metz, 1974, p. 8)"

This points to the struggle between the present tense and the past tense of cinema. Pasolini (1980) argued that reality can be only perceived as it happens, which is the only thing that is always in the present tense. And thus, the long take, a reproduction of reality, is in the present tense. For Pasolini, montage establishes a coordination relationship between presents, and, renders the present past. When montage changes the presents and the reception of the audience is suddenly disrupted, this discontinuity poses something other than how reality shall happen.

Doane(2002) divides the temporality of cinema into three categories: the linear, irreversible temporality of apparatus; that of diegesis, in which time is represented by the images; and that of reception, which is marginalized and fused tightly to the temporality of apparatus. Doane provided a formalist perspective. The temporality of

apparatus suggests the "always-present" feature of cinema. The movie frames can not be arrested because the apparatus renders constant, sudden changes. While the temporality of reception provides evidence to what Pasolini defined as the past tense of cinema. Montage asks for the type of reception not present in reality, and by the action of cut, it finishes one representation of reality and starts another.

If we continue the analogy of game with the long take, Juul(2001) offers an observation for the present tense of games: since the players can influence events represented in games, those events can not be the past or prior. Games always tie the player at the temporal *now*, and under one single point of view. This temporal *now* links the prior, already-rendered narrative with the "always-present" interactivity. Juul also used the concept of *reading/viewing time* in narrative discourse, which resembles the time of reception in Doane's definition. If we agree that the time of reception in cinema is marginalized in long takes and expanded and exploited in montage, for Juul, the time of reception in games is always at *now*.

As Juul(2001) argues, unlike interaction that only works at the temporal moment of *now*, and requires the player's effort to make events go forward, non-interactive media only requires audiences to put the effort into interpreting the story. Their first goal is to minimize the obstacles that block audiences from understanding their story. And thus, they ask audiences to give up the *now*, to put the minimum effort in the processing, but be fully engaged in the story and discourse they propose.

The effort of audiences in cinema is diminished for the construction of the narrative discourse, while that in games is perpetually demanded in order to proceed with the game.

This concept leads to an experiential perspective on temporalities of cinema and game and reveals the ontological conflict between them. Time in cinema was developed with the premise of standardization of time, which became "uniform, homogeneous, irreversible and divisible into verifiable units". Cinema can be replayed, rewound, but the temporality and the audience reception would stay the same.

But the experience of time in games is much more dependent on audiences, which in this case, the players themselves. For example, Aarseth(1999) argues that the player's sense of time within event space is determined by the player and their action to realize the time. The time of the player is ergodic, while the time of the cinema audience is chronological.

Hereby, we suggest that the conflict between cinema and game temporalities lies in the already-rendered past and the always-malleable present. In other words, cinema only accomplishes its form after it is interpreted in the audience's mind, but interaction is completed at the same time as its delivery, and when this interaction is delivered and cut away from, it also becomes the past.

This notion is also noticed by Consalvo et al.(2010) in massively multiplayer online games, that the work once undertaken by cuts of montage is now shifted onto the player, "who must advance his or her avatar through the hard work, denied any condensation of time or effort, or montage of his or her activities."

Here one thing becomes clear: As long as reading and playing exist in chronological order, with the same representation, the merging of cutscene and gameplay is impossible. If we bring back our argument about cutscenes in the last section,

cutscenes are meant to allow the players to get the gist of their quest and their motivation. While the interactive part of the game instantiates its own story events, it makes sense around the backdrop of the cutscene.

Before drawing his conclusion on incompatible time schemes between game and narrative, Juul(2001) mentioned a possible solution for this incompatibility: the avant-garde narrative attempt in the 20th century. In such narratives, the reader's effort of interpreting is prolonged, and thus obscure the story in a way similar to how interaction do so. The one problem in adapting this notion into interaction is that interpretation also must be prior to interaction, thus the ontological instability of avant-garde could, "in itself, make a game unplayable" (Juul, 2001). This problem is very relevant to our ambition of applying novel narrative techniques into the game narrative to solve the incompatibility.

2.5 techniques for integrating time and space

We have identified the two severe conflicts between cutscene and gameplay, namely, the continuity and discontinuity of space and the past and present of time. Is there any solution to these fundamental contradictions in gameplay and cutscene? To answer this question, we come to the relationship between time and space.

Aarseth(1999) identifies three levels of ergodic time. Apart from the basic event time which varies according to the player's choices and actions, there is also the time of negotiation, during which the game is played repeatedly in order to overcome difficult actions. In the process of negotiation, Nitsche(2007) continues in the analysis of temporal experience, that he connects the temporality of games with spatiality, suggesting the temporal progress in games are dependent on spatial movement. The

player became more and more familiar with the game space as they play through it many times, and thus gain temporal advantages. It is also argued that space is dynamic and can be used to measure temporal dimensions. And time emerges from the experience of space(Mylov, 2002).

In other words, spatial conditions in game worlds are time constructing conditions. Then, how to use the continuous spatiality to guide the discontinuous montage scenes, and how to use temporality to guide the spatiality is what "merging cutscenes and gameplay" necessarily points to in this research paper.

Solutions, not surprisingly, come from avant-garde cinema. From Lev Manovich (2001), we learn **spatial montage**: an alternative to traditional cinematic temporal montage, replacing its traditional sequential mode with a spatial one. All of the "shots" in a spatial narrative are accessible to the viewer at once. On the screen could there be two or more images, and the filmmaker shall construct the inner logic to decide what images appear together, when they appear and what relationship they form with each other.

Similarly, Hales(2020) considers it possible to apply multiscreen, a narrative skill of experimental cinema as visual forms to express multiform narratives. Hales suggests these techniques be used in interactive narratives, for example attaching algorithmic behaviour to each window or layer to create new combinations generated by internal rules and user interaction. It is not only the juxtaposition of sequences that makes this technique unique, but the way this technique can convey narrative.

Hales' suggestion has a predecessor in game studies, which is interactive montage.

As Nitsche(2008) puts it, montage as a play element has not been developed from a ludic perspective at all. In the interactive montage, every cut is initiated by the player. In Nitsche's theory, only four most commonly used camera positions are included: first-person POV, following camera, overhead view, and predefined viewing frames. He explains that it is because the player soon loses spatial orientation when the camera changes its position by cut, for example, in *Siren*'s sight-jack option. And Nitsche interprets this drawback as being too advanced, but resolvable with improved literacy. If we combine multiscreen with interactive montage, then, the disorienting effect of interactive montage would not be a problem, because the function of spatial reinforcement can be assigned to a continuous interaction space, while the discontinuous cutscene would function solely for narrative purposes.

Spatial montage and multiscreen point to the same visual representation skill, and they have been applied to some feature games. Therefore, the two solutions we raise for merging cutscene and gameplay, according to detailed observation and analysis into time and space of games, are spatial montage and interactive montage. Although they both have the name of montage, spatial montage refers to a narrative technique of creating rich and complex understanding for narrative, while interactive montage refers to a game mechanism, using the cinematic term "cut" as the rule for the game. What we propose to do in this research, is to apply them to a game artefact, and explore how these methods reshape the visual representation of game narrative and gameplay, providing a unique player experience.

3 Methodology

In the **literature review**, I have looked into how cutscene is deemed as incompatible

with interaction in video games, with analysis of time and space in cinematology and narratology. Thereafter, based on the understanding of the conflict, I propose two novel techniques that would avoid the conflicts, influence the time and space in game storytelling and create a new visual representation mode in game storytelling.

In order to examine the feasibility of the proposal, a **practice-based methodology** is established.

3.1 Reflection on action

The game artefact *Now Approaching: Winter (NA: W)* is a reflective practice that aims to implement some unique narrative techniques to the representation of game narrative, to solve the tension between cutscene and gameplay. The tension comes from the conflict between different engagement styles and meaning-making modes. As Ferreira (2017) proposes, reflection-on-action is a way of getting awareness of our cognitive habits and of acquiring new ones. This practice-based research method allows the researcher/practitioner to understand how other people are framing the situations and the rationale behind that framing, creating a common ground for solving conflicts and working together (Ferreira, 2017).

As the author of *NA*: *W*, I create the project to materialize the time and space theories of merging cutscenes and gameplays. And to answer our research question, the rationale upon which I make every decision is more important than the final presentation of this game. The reflective process in making the game artefact would provide valuable practical material for future studies and practices.

Schön(2008) describes the process of reflection-in-action: "As [the practitioner] tries

to make sense of it, he also reflects on the understandings which have been implicit in his action, understandings which he surfaces, criticizes, restructures, and embodies in further action (p. 63)". By identifying my own experience and identity influence my present work and how the researcher's aim shapes the production of the artefact, insights can be gained about both game production and future research.

Due to the experimental quality of this artefact, it is probably not appropriate to simply assume it is a game, at least not a mainstream one. But as Keogh (2014) argues, a formalist approach to games would marginalize the video games that do not meet certain arbitrary criteria. Therefore, I would only abide by Shell(2015)'s four elements of game design, which are aesthetics, mechanics, story, and technology. My rationale comes from Galloway (2006), as he talks about avant-garde video gaming: "By radical action, I mean a critique of gameplay itself. [...] [Artists] should create alternative algorithms. They should reinvent the architectural flow of play and the game's position in the world, not just its maps and characters. (p. 125)"

The project would be constructed based on the researcher's understanding of games and the relationship between cutscene and interaction. To demonstrate how the researcher forms the ideas and implements them by trial and error, reflection-on-action is employed for documenting and analysing the iterative process of prototyping the game. The documenting of production would be done in the form of a research journal, in which the design process would be recorded and reflected upon, providing a detailed explanation of why and how the project is done in a particular way. The insights I gained be demonstrated in the next section.

3.2 Multimodal analysis

As Hawreliak (2018) proposes, multimodality provides a useful and refining conceptual framework for understanding how the medium's many parts and interactions with each other come together to form meaning potentials. Video games are complex artefacts that employ multiple semiotic modes to form their meaning. For our game project, we employ multimodal analysis to try to take a close look at how all the semiotic modes work in consonance and create an interesting experience.

Shell (2015) suggests the goal of game design is to find out the elements that define the experience you want to create. The advantage of multimodal analysis is that it does not only allow examination of the meaning and impacts of separate modes but also allow an illustration of the effect of multiple modes together. This method will serve as the analysing tool for both the product and our reflection on making.

4 Project Overview

This section describes the production details of the game project *Now Approaching: Winter*. I would demonstrate the game design in a mostly linear way, offering a demonstration of how my research and game experience shapes the game into what is planned in the end.

Now Appeaching Winter

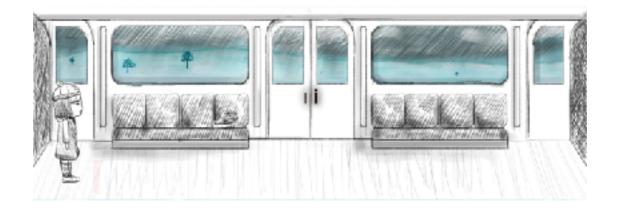


Figure 1. The title screen.

4.1 The narrative

The story concerns a girl, Aster, who was walking on a train, from one side to another (See Figure 1.). She knew from a letter on her that someone whose name was Nina was waiting for her further on the train. Along the way, as she waded through the dangerous ground, she could find things that once belonged to someone, and met three people (See Figure 2.). The first is a sleeping person. The second is a boy who seemed to know her but she could not remember. The third person was an elder who was an acquaintance of Nina and Aster. As the player follows her sight, they will find out some secrets about the train and Aster herself. In the end, she would either find a way to hop off the train or stay, until something else could happen.



Figure 2. the three people Aster would meet on the train. left to right: the woman, the boy, and an acquaintance.

The game has a predetermined theme: Losing. In the game, some objects are controlled with quick-time events, and can only interact for once. There are also montage triggers players can interact with repetitively. Some of the montage triggers can trigger multiple cuts controlled by time, so if the player walks too fast, part of the narrative would be omitted. Thus, the narrative experience can vary by large according to the player's behaviour. Figure 3 shows these different forms of triggers.



Figure 3. Quick-time event trigger; spatial montage trigger; speech bubble trigger.

Since the game is mostly story-based, the storyline was decided in the early stage of production. But to tailor the story for game mechanics, the textual material changed many times during the whole process of production.

4.2 Mechanics: interactive montage and others

The core mechanism of the game is interactive montage. The actual form has changed as the research and production goes.

The second stage of production focused on deciding where and how to instantiate the narrative (See Figure 4). The story has been written in the form of dialogue and third-person narration with branching out narratives. And the cutscenes are illustrated with images and coupling subtitles. Then, I faced a choice of whether to keep the dialogues between characters or not. When the first prototype came out, it was clear that whenever subtitles and speech bubbles show up simultaneously, the attention of the player is always drawn to only one of them and then another. This problem also showed up in the case when QTE prompts appear together with cutscenes. But in the end, the dialogues are preserved for a better demonstration of narrative.

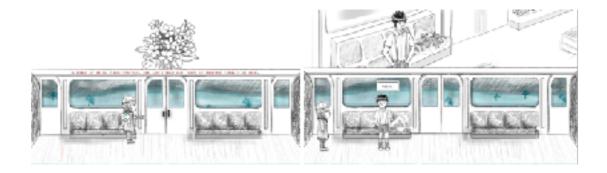


Figure 4. How narrative information is scattered in subtitles, dialogues and quick-

time events.

The goal of spatial montage was not to separate narrative and interaction into the two screen spaces, third-person narration stayed as subtitles in cutscene space, so dialogues between characters were left in interactive scenes, staying with characters as they talk. QTE events, which also partially belong to narrative are also implemented in game space. And the mechanism of interactive montage was set to trigger subtitle, dialogue, cutscene and QTE separately.

QTE is a supporting mechanism for interactive montage. It functions as a mechanism to add narrative branches and serve as another form of montage trigger. One particular difference QTE poses is the strong temporality. Within the counting down time, the cutting of montage also happens. Players are subject to either read all text and graphical information before interaction or ignore the narrative part and only participate in the interaction. The montage triggers described above are only passive interaction that does not ask players' effort to gain cut the scene, but QTE triggers require players to give the right input in a limited period and relatively ask for more engagement.

4.3 Aesthetics: Spatial montage and others

The spatial montage is added to the game design process in the middle stage of preproduction. But the layout was clear as soon as the use of split-screen was decided. The environment set on a train largely limits the use of long shots because of the linear structure. The linear structure would also pointedly guide the player to naturally proceed with the game from one side to the other. It also has an easily oriented interior that would minimize players' loss of spatial control.

Most of the game assets are illustrated by the researcher herself and takes a rough hand-drawn style without much colouring. The reason for this is, firstly, that the researcher does not have strong illustration skills; secondly, considering the tight schedule for production, very detailed game assets would cost considerable time, which is unacceptable; lastly, however, a hand-drawn, grey-style world matches greatly with the theme and setting of the game narrative. All in all, this visual style should not be seen as a compromise in aesthetics.

Similarly, most of the cutscenes are still images, in their storyboard form. As Kress (2010) argues, still image is based on the logic of space, and meaning is made by the arrangement of entities in the framed space. And Hawreliak (2018) proposes that images allow viewers to examine an image in-depth and at their own pace. We understand that if most of the cutscenes are made into cinematic sequences, it is going to be difficult to control the pace and the continuity of the narrative. Another reason for using still images is the same as above, to save the production time.

4.4 The technology

The game is built in Unity on the researcher's laptop. Most game assets are illustrated by the researcher in Adobe Photoshop or Illustrator. There are a small number of animations and video clips that are first created or post-processed in After Effects before being imported into Unity. The resolution is set to 1920x1080, in which the game space takes 1920x676, while cinematic space takes 1920x404. This setting changed the representational capability of cinematic space, differentiating from the

traditional spatial properties of cinema.

Cutscene made with interactive 3D assets had once been a choice but later abandoned, mostly because of the technical skill limit of the player. But it would be a very innovative mechanism could the character in the cutscene move together with the interactive scene. This kind of interactive montage would have to be left for future research when the researcher improved her skill in programming and animation.

Due to one unresolved technical issue, the game only runs perfectly as we intended in Unity 3D editor mode, but lack a very essential temporal feature in the game build mode. The text writer effect of the dialogue bubbles

5 Multimodal Analysis

Flanagan (2009) introduced critical play into games, not only as entertainment, but function as means of creative expression, as instruments for conceptual thinking, or as tools to help examine or work through social issues. By this definition, *NA: W* is a critical game artefact that tries to incorporate cinematic cutscene and interactive gameplay into the same time and space. The theoretical ground for this project is far from solid, however, the criticality allows a flexible perspective on the representation of

5.1 Still Image

5.1.1 Cutscenes

The upper half of the screen is where the cutscenes are displayed. It occupies around one-third of the screen (see figure 6).



Figure 6. One of the cutscene illustrations.

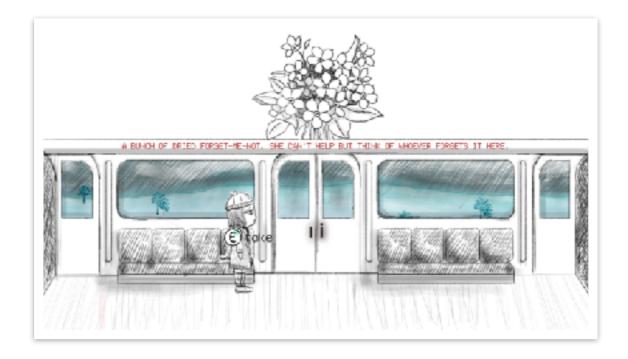


Figure 7. An overview of the game screen.

The primary function of the cutscene is to construct the cinematic space. Each image depicts one moment in the game space, and the juxtaposition of different images create meanings about either the interactive input or the results of the interaction, which is what became narrative.

Setting the cutscenes as still images balances the movement in the game space and create an interesting dislocation between game time and narrative time. As the carrier of spatial and interactive montage, these illustrations do not always account for exactly what was happening in the game space but jumps back and forth in story time.

And the contradiction between cinematic space and game space provides another layer of meaning besides what the two representations demonstrate separately.

As the development proceeds, the time factor in these still images gradually became the definitive connection between cinematic space and game space. As Hanson(2018) argues, in video games the player obtains the agency over time. As the player manipulates the play of still-image cutscenes, they jump back and forth between two different time schemes: that of cinematic time and that of game time. The game time is constructed by the space and movement condition directed by the player. Cinematic time, on the contrary, is embedded in the settings of the game script and executed by clock time. The way players gain control over time is based on their control over space, and when time is calculated by the enaction of space, it does not always follow the scale of the real world.

The still-image cutscenes also consciously utilize the temporality of cinema and exemplify the audience's effort in interpreting the cutscene. In the action of changing the scene, the player is in a state of waiting for the next meaning to be created. And every time after the changing of the scene, there is a short period for the player to understand the prior scene. As the player has the control over speed and content of the cinematic scene, they create time and space of their own.

5.1.2 UI inventory system

The inventory system shows the interactive objects obtained by the player in game. It is a recount of the player's movement in space and experience in time. It is triggered with keyboard input "Q" and shows up as a full-screen interface. The interface is

navigated with arrow keys, where each object can be viewed on selected (See Figure 8).



Figure 8. UI interface.

The menu contains a side-view of Aster, as background, the row of thumbnails and the large illustration of each object. And it represents what Aster has collected on her journey. This menu only served a narrative goal, because there is one object of special importance in the story, which is the letter the player has had since the game starts (also see Figure 8). It gives the most important information in the telling of the story, without which the story would be merely a confusing cluster of fragment messages. However, it is completely independent of the game loop, and would not make much difference in playing the game. Although it functions as the narrative core, it is only shown and experienced by the player based on their choice.

This menu is the only place where the screen is not divided into two spaces. In this state, the time scale in the game is zero, so both the game time and cinematic time

come to a halt. From a completely out-of-text place, the player recounts their game progress and stays in a united time and space. As the player needs to explore among five visually identical carriages, they could feel confused and wonder whether they made any progress or not. Indeed, making players confused about time and space is one intention of the game, and this confusing experience is well executed by repetitive game space and freedom to instantiate repetitive cutscenes. And the interface functions as an amendment for the "fuzzy temporality (Herman, 2002)" in the game.

5.2 Moving Image

The moving images in this game are relatively scarce, but they also play critical roles as they are limited to the most crucial places.

The first moving image one would notice when they start the game is the moving scenery outside the train window in the interactive scene. It illustrates a bleak field, with only dead trees far away (See Figure 9). And it moves in the same direction as Aster was allowed to go and thus imitates an opposite moving of the train. It matches with the game title and also creates an illusion that time in the train is not static, demonstrated tangibly.

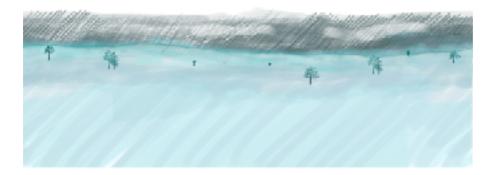


Figure 9. The background scenery, which is three image layers animated by code in

Unity.

The moving of the background is enabled by a piece of code, which duplicates and moves several images in one direction and loops these methods. This background is the only thing moving in the game space except for the movement of the player for most time in the game. And it is a movement that is irrelevant to the game state. It represents the continuity of time and space and provides a dynamic reference for the static cutscenes.

The other moving image is motion graphics of the concretization of the darkness (See Figure 10). It illustrates a blinking, rolling black eye in the middle of pure black, shown as the only video clip of cutscene. It is a 6-second-long animation in the cinematic space, triggered by the player's collision with black puddles in the game space.



Figure 10. One frame from the motion graphic

During the video playing, the player's movement is disabled, while the time kept going. Here interaction gave way to the cutscene for a complete experience. This also poses the problem in treating cinematic scenes as an experience – it has its own finite temporal and spatial status, and interaction must not disturb this self-contained

experiential quality. This is also why, when analysing the static cutscenes, I argue that the reading time must satisfy the need of the temporal "now", and the players should take an effort to ensure the overall narrative experience.

5.3 *texts*

The text shows up in four forms: the subtitle of a third-person narrator, the verbs of quick-time events, the dialogue speech bubbles when talking with NPCs (See Figure 11). The quick-time events and speech bubbles would be analysed in the procedural mode analysis. Here we only discuss the function of subtitles as the text mode.

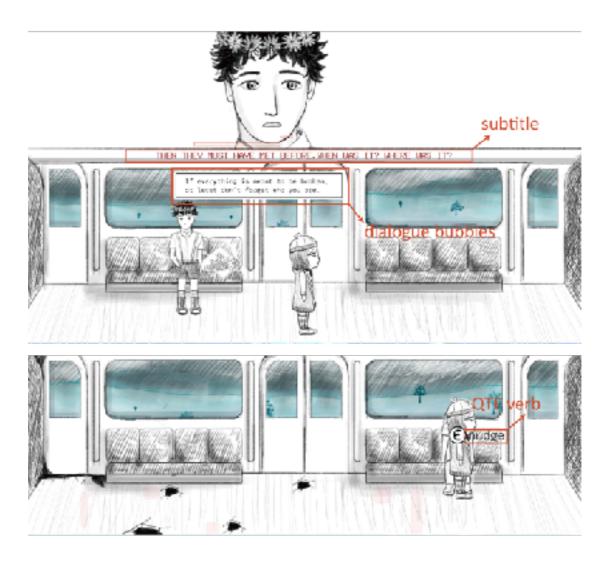


Figure 11. the text modes in the game

Because there is no voice-over for the narrator of the cutscene, a third-person narrator in the form of text subtitle is added, to recount the story together with the cutscene. Its initial function was to support the expression of cutscenes because the still image version of cutscene largely restricts the expression of meaning. But then, the subtitle can describe something not the same, but relatable to other media texts and create another layer of meaning in the paratext.

The most prominent influence a subtitle has on the whole experience is that it monopolies the pace of meaning-making of the story. To some extent, the time player spends reading a subtitle simulates the time an actual video or audio plays. Because some of the subtitles are time-controlled, which would be replaced by another as soon as a certain amount of time passes, the subtitle itself becomes the playful part of the game, and a willingly engaged player needs to finish the reading before time runs out.

The other subtitles are not time-limited but controlled by spatial properties, namely, the visible triggers on the ground and QTE triggers. Here, the space and time were united by the same motion: the cut between two cutscene images. The spatial change of character decides the start of the cutscene, while the temporal change in the game decides the end of the cutscene.

There is indeed one small deficiency in the mechanism of subtitle based cutscene, which is the immobility of time in itself. In our game design, the cutscene sequence is not without end, so that if the player wants to know which scene represents the end of this sequence, they would have to judge by the stop of "beats" in the change of

cutscenes. A solution exists from the mechanism level of the game, which is to allow a rule-based selection system to select relative clips and put them in the queue of currently playing sequence to enable a non-pause cutscene, even when the static images are substituted by videos. This system would also maximize the experiential quality of the narrative, producing tremendous variety for the understanding of the game by the different decisions players make in game time and space.

5.4 the procedural ensemble

Procedurality, as defined by Bogost (2008), is "the principal value of the computer, which creates meaning through the interaction of algorithms." When working as a semiotic mode, procedurality almost always needs other modes to make it understandable, unless the reader/viewer can read the programming language or algorithm (Hawreliak, 2018). And thus, while the procedural mode is the main focus here, it is going to be examined within separate ensembles.

5.4.1 Interactive Montage: QTE and speech bubble

As the core mechanism in the whole game, interactive montage in procedural mode can be put essentially as a process of the character collide with visible or invisible triggers in the scene, and by setting out a series of functions within the software (in our case, the functions are written in C# and the software is Unity 3D), and assigned still image and its corresponding subtitle appear in a designated area on the screen. In the project, except for the basic mechanism, there are two variations: one is montage triggered by quick-time events, the other is a speech bubble.

Each QTE trigger contains a text mode, a moving image mode, a still image mode and

a procedural mode. A QTE shows up on the interactive screen as a prompt near the object/character she was interacting with.

The texts for QTEs are all one-word simple verbs, such as "take", "pull", and "talk". And they appear as Aster walk close to the objects or character. The verbs are chosen to let the player learn the situation quickly, and can respond to the computer's prompt timely. Although these prompts have a counting down mechanism, the timer does not encourage quick response. Rather, it materializes the passing of time and gives out the signal that these choices are irreversible and potentially important. The reaction time is enough for players to read through all the cutscenes triggered and think for another while. It even implicitly discourages the player from letting away the chance to get it right by offering too long expire time. On this point, it does not make a challenging enough game.

The QTE choices are also the only elements that can decide changes in montage and narrative branches. Each narrative branch is related to the attainment of one item in the UI inventory. From table 1, it is visible that each time-based choice results in changes in how space is reconstructed and demonstrated to the player. The changes are not only choices on stories but also how the player's movement and behaviours become limited by different requirements of the narrative. Interactive montage, by turning cutscenes into a necessary part of gameplay, creates a consensus between these two incompatible entities.

QTE event	item	Montage	Resulting branch
		triggers	
		changed	

Take	Flower bunch	0	Carriage 3: the talk with Myosotis would change. The flower represents the memories Aster has for him.
Take	Winder key	1	Carriage 5: the existence of the final keyhole. It decides whether Aster can leave the place or not.
Take	B o o k page	1	Carriage 4: the talk with Elden. He offers a comment about what happened to Aster.
Nudge>rock>drag>take	Crossing	1	Carriage 5: Aster's final decision. If she does not obtain the crossing, she would not leave the train even if she has the winder key.
Talk	W i t h Myosotis	1	Carriage 3: Before Aster leave the carriage, she chooses to talk again with Myosotis or not.
Unlock	Carriage door	1	Carriage 5: Where Aster finally goes. To leave the train, or to go on.

Table 1. the linear correspondence between QTE event, item, altered Montage triggers and narrative branches.

During development, we also found that when a cutscene changes in the middle of the QTE count down, the process of making sense of the cutscenes unavoidably grabs the player's attention from the timer. The counting down is a continuous and perpetual process and does not stop because of the story, but the interpretation of narrative media occupies a sensible time. Although reacting to a QTE prompt is an instant behaviour, the reading of text requires much more attention, especially in the case of text-based subtitles. Static image and moving image both have the attribute of ephemerality, representing brief moments, projecting directly into human cognition,

but texts have an obvious delay in being understood. For that reason, the action time is deliberately prolonged to include time reading the cutscene.

The timer is in a simple and concise style, hovering over the object or character the action is happening on. It shows time in a progress circle as a moving image. There was a design to show whether QTE succeeds or not, which is a colour change of the timer graphic, either red or green. Any failing input or inaction within the counting down time leads to red results.

It also has a poignant semiotic meaning embedded in the inaction of success prompt: this game was not about success or failure. It is about the experience. Succeeding in QTE or not would change the overall experience, but would not represent the perfect or imperfect endings for the game. For the QTEs with interactive objects, the most direct response for the success of QTE is in the UI system. The objects are to be added to Aster's inventory. For talking requests, the success would start a conversation between Aster and another character, but even if the player fails, the conversation still happens, just in another version.

Another QTE interaction was designed to fully take advantage of the ambiguity of no prompt for QTE success. In Carriage 2, Aster encounters a woman who was sleeping. At the same time, the fatal black tide is coming at them. And Aster can choose to try to wake up the woman. But the woman never waked. So, the mechanism here is if the player succeeds in the first QTE, there would come a second one, and then a third one. If they fail in the first two QTEs, the next would not come up. The gist of the three connected QTE is that even they succeed in all three, the fate of the woman would not change. As procedural rhetoric, there could be multiple understanding here,

but as Pow (2012) comments on Anna Anthropy's autobiographic game, *Dys4ia*, "The sense of confusion, frustration, of figuring out the right thing to do, creates an experience unique to video games." The player would have to leave this scene with a sense of confusion and frustration, wondering whether the woman can be saved and had pressed all buttons in time.

Either success or failure would trigger cutscenes that respond to the choices. I tried to create prominent variations in each branching narrative. All in all, the different choices would reflect player's expectations for the game and for the narrative they create. Their choices would evaluate what they consider valuable and allow them to figure out the meaning of the story for themselves.

The expression goal for these QTEs is to illustrate the ephemerality of important things in life. It is indeed, merely an instructive direction of understanding and welcomes more interpretation from another perspective.

Speech bubbles are the triggers of montage that offer relatively little control to the player. The speed of text popping up implies the timing of montage. The player can not decide when to end a dialogue, but only when to start one.

The dialogues happen between characters in the third and fourth scenes. Both of the conversations start as soon as the scene is loaded. Although I still utilize the spatial triggers, starting conversations on loaded is a compromise for the narrative.

When one conversation is ongoing between two characters, the player does not have control over the narrative at all. They are still allowed to walk in the carriage, but without any interactive objects (this can also be amended by queueing sequence of

cutscene). But another supporting system for realizing temporality is added, which is the text writer effect for speech bubbles. It simulates the time that people talk and pause in the conversation, and only triggers cutscene at the exchange of talking role. The player is given an expectation on when to receive the change of cutscene.

But surely, this media ensemble is not the best illustration of the relationship between time and space. An ideal play should be that the player's position changes in the cutscenes simultaneously when they move in the game space. And the time flows in the form of text writer on-screen would be replaced by voice acting.

After the first compulsory conversation, the player can choose and control the timing of another talk. One of the secondary talks is triggered by a spatial trigger, another one is triggered by a QTE trigger. Hereby we see the speech bubbles do not change the received messages but provide a temporal demonstration. And this demonstration is important in the experiential quality of the game.

5.4.2 Spatial Montage: The beginning is the end, vice versa

When Aster came down to the last carriage, she faced a choice. To open the carriage door, and jump into the vast, freezing winter, or to ignore the QTE prompt, and continue walking. Both have their metaphorical meaning. If she chose to open the carriage door, a final cutscene of colour would show up, and the carriage door opens up. When she jumps out of the carriage, the game ends, showing the UI system with the end message, and the player can either restart from the beginning or exit the game. If she chose to walk past the carriage door and continue her journey, there would be no message of the end. She would be sent back to the beginning of the game as if she

had walked through another thousand coaches.

Here the contrast resulted from the spatial montage is best demonstrated. The cutscene is a loyal representation of what happened in the interactive scene, but its meaning depends on the control from the interaction. The interactive scene is a perpetual and repetitive existence on the screen, that allows a continuous grasp of space and flow of time. When the interactive space is made into a loop, the spatial and temporal embodiment became ambiguous. The whole gameplay lost its sense of reality.

This is also one effect the experience wants to achieve. It suggests another layer of narrative possibility to the game. What if the girl has been on this train since she was born? What if there has always been a way out but all the people on the train forgot or ignored it and lie to themselves forever? In the looping of time and space, it seems to be reasonable if everyone forgot to care about where they are and where they are heading for. If the players have also been trapped in the time loop of the game, missed the exit, and had to ignore all interactions just to rush to the end to close the game, then the goal is achieved.

Though the mechanism of

One drawback of this spatial montage is that it was not structured into a continuous space such as a 2D scroll game. If that is applied to the game, the contrast would be more pronounced and result in stronger rhetoric.

6 Discussion

Interactive montage and spatial montage can be applied to game design and they can

function well with all types of semiotic meaning-making modes. And this innovative attempt in trying to apply some experimental narrative techniques is not a total failure. As much as we admit the conflict between interaction and narrative stays under multiple viewpoints, it is not something that could not be compromised in actual practice. From this practice, we explore the game as transmedia and its capacity.

There have been many attempts in exploring collaboration between procedural media and cinematics. For instance, Manovich's *Soft Cinema* establishes a series of rules as custom software and input a large database of film clips, motion graphic and still images, and let the system compile a sequence of video clips according to these rules (Manovich, 2005). The narrative generated by the software was loosely confined by the rules that the author set, and created semiotic meanings according to computer-defined rules. Our project is also directly inspired by the concept of "multimedia cinema". As Manovich (2002) reflect on his rationale:" each type of imagery, [...] no longer the dominant form, rather just one source of visual information about reality among many others (p10)." In our practice, we also propose a game space that accommodates many forms of media, not only film clips but also 3D animation, 2D animation and other expressive media forms. The inner logic for compiling the sequence in *Soft Cinema* can also be utilized into the construction for interactive montage.

The whole game mechanics are very experimental and left much space for further exploration. For example, the cutscenes are mostly constructed by static images, and the sound

7 Conclusion

This paper has focused on the application of novel narrative techniques into video games. First, we recounted the ontological conflict between game narrative and interaction and bring it down to the contrast between cutscene and gameplay. From there, we take the conflict under the lens of space and time and disassemble it by these two categories. In the studies of spatiality, we argue that interaction in-game must be guaranteed by a continuous space, while what necessarily comprise cutscene are disconnected, cut spaces. This antithesis could be compromised, as we argue, by spatial montage, which allows multiple screens that demonstrate multiple types of media. And then, the temporality of cinema and games is examined. We find that while narratives usually try to minimize the audience's reading/viewing time, creating meaning prior to it, interaction aims to prolong this time, and creates meaning exactly in this time. We propose that this contradiction can be bypassed with interactive montage, to make player input influence the action of cut in cutscenes.

The two techniques we choose are extracted from precedent studies about cinema and game, with no intentional parallel construction. As we apply them in the creation of the game artefact, we also record a detailed reflection on the process of making, and conduct the multimodal semiotic analysis on a large ensemble of the multiple modes, in order to get a hold of how these techniques can become meaningful materials in distinctive ways as the original modes.

This research leads us to the two approaches to narrative, that of formalist and that of experiential. And the practice does illustrate a frontier for us. Games can accommodate every known medium and can articulate powerful ideologic or

experiential rhetoric, that we should not limit its application merely in entertainment, but should also explore it in art, education, and other meaning-making industries.

The limitation of this research is apparent. Firstly, we replaced what should have been cinematic sequences with timed static images, which definitively influence the rigour of our arguments based on cinematic cutscenes. It also weakened the spatial experience with cinematic scenes not responding to interactive input in the game space.

References:

Aarseth, E. (1999) 'Aporia and epiphany in Doom and The Speaking Clock: The temporality of ergodic art', *Cyberspace textuality: Computer technology and literary theory*, pp. 31–41.

Bazin, A. (1967) What is cinema? / by André Bazin; essays selected and translated by Hugh Gray. Edited by H. Gray. Berkeley; London; University of California Press.

Bogost, I. (2008) 'The Rhetoric of Video Games', in Salen, K. (ed.) *The Ecology of Games: Connecting Youth, Games, and Learning*. The John D. Cambridge; MA: The MIT Press, pp. 117–140.

Brooker, W. (2009) 'Camera-Eye, CG-Eye: Videogames and the "Cinematic", *Cinema journal*, 48(3), pp. 122–128. doi: 10.1353/cj.0.0126.

Cheng, P. (2007) 'Waiting for Something to Happen: Narratives, Interactivity and Agency and the Video Game Cut-scene'.

Chris' Tutorials (no date) (25) Open and Close Menus with Buttons or Escape Key | Unity 2018 Game Development - YouTube. Available at: https://www.youtube.com/watch?v=aN11LnlF89I (Accessed: 9 September 2021).

Code Monkey (no date a) (25) How to make Text Writing Effect in Unity - YouTube. Available at: https://www.youtube.com/watch?v=ZVh4nH8Mayg&t=387s (Accessed: 9 September 2021).

Code Monkey (no date b) *Simple Chat Bubble in Unity! (Chat, NPC, Multiplayer) - YouTube*. Available at: https://www.youtube.com/watch?v=K13WnNL1OYM&t=339s (Accessed: 9 September 2021).

Consalvo, M. *et al.* (2010) 'Where's My Montage? The Performance of Hard Work and Its Reward in Film, Television, and MMOGs', *Games and culture*, 5(4), pp. 381–402. doi: 10.1177/1555412009360413.

Costikyan, G. (2000) 'Where stories end and games begin', *Game Developer*, 7(9), p. 44.

Doane, M. A. (2002) The emergence of cinematic time: modernity, contingency, the archive / Mary Ann Doane. Cambridge, Mass.; London: Harvard University Press.

Eskelinen, M. (2001) *Game Studies 0101: Eskelinen: The Gaming Situation*. Available at: http://www.gamestudies.org/0101/eskelinen/ (Accessed: 28 August 2021).

Farmer, R. (no date) *Free Music Archive: Robert Farmer - Lila, Part 1*. Available at: https://freemusicarchive.org/music/Robert_Farmer/a-second-fiery-flying-roll-1996/lila-part-1 (Accessed: 9 September 2021).

Ferreira, S. (2017) 'Reflecting in and on Action'. MIT EDU.

Flanagan, M. (2009) *Critical play : radical game design / Mary Flanagan*. Cambridge, Mass.; London, England: MIT Press.

Galloway, A. R. (2006) 'Countergaming', in *Gaming*. NED-New. University of Minnesota Press (Essays on Algorithmic Culture), pp. 107–126. Available at: http://www.jstor.org/stable/10.5749/j.ctttss5p.9.

Hales, C. (2020) 'Weird and Wonderful: How Experimental Film Narratives Can Inform Interactive Digital Narratives', in *Interactive Storytelling*. Cham: Springer

International Publishing (Lecture Notes in Computer Science), pp. 149–163. doi: 10.1007/978-3-030-62516-0 14.

Hanson, C. (Christopher C. P. . (2018) *Game Time Understanding Temporality in Video Games / Christopher Hanson*. Bloomington, Indiana: Indiana University Press (Digital game studies).

Hawreliak, J. (2018) *Multimodal semiotics and rhetoric in videogames*. 1st edn, *Multimodal Semiotics and Rhetoric in Videogames*. 1st edn. Milton: Routledge (Routledge studies in multimodality). doi: 10.4324/9781315159492.

Herman, D. (2002) *Story logic : problems and possibilities of narrative / David Herman*. Lincoln, NB; London: University of Nebraska Press (Frontiers of narrative).

Ip, B. (2011) 'Narrative Structures in Computer and Video Games: Part 1: Context, Definitions, and Initial Findings', *Games and Culture*, 6(2), pp. 103–134. doi: 10.1177/1555412010364982.

Jenkins, H. (2004) 'Game Design as Narrative Architecture', *Computer*, 44(3), pp. 118–130.

Juul, J. (2001) *Games Studies 0101: Games telling Stories?* Available at: http://www.gamestudies.org/0101/juul-gts/ (Accessed: 19 July 2021).

Juul, J. (2005) Half-Real: Video Games between Real Rules and Fictional Worlds.

The MIT Press.

Keogh, B. (2014) 'Across Worlds and Bodies: Criticism in the Age of Video Games', *Journal of Games Criticism*, 1(1), pp. 1–26. Available at: http://gamescriticism.org/ articles/keogh-1-1 (Accessed: 19 July 2021).

King, G. and Krzywinska, T. (2002) Computer Games / Cinema / Interfaces.

Klevjer, R. (2002) 'In Defense of Cutscenes.', in *Computer Games and Digital Cultures Conference Proceedings*. Tampere University Press. Available at: http://www.digra.org/wp-content/uploads/digital-library/05164.50328.pdf.

Klevjer, R. (2013) 'Cut-Scenes', in *The Routledge Companion to Video Game Studies*. Routledge. doi: 10.4324/9780203114261.ch37.

Koenitz, H. (2018) 'What Game Narrative Are We Talking About? An Ontological Mapping of the Foundational Canon of Interactive Narrative Forms', *Arts (Basel)*, 7(4), p. 51. doi: 10.3390/arts7040051.

Kress, G. R. (2010) Multimodality: a social semiotic approach to contemporary communication / Gunter Kress. London: Routledge.

Manovich, L. (2001) *The language of new media / Lev Manovich*. Cambridge, Mass.; London: MIT P. (Leonardo).

Manovich, L. (2002) *Soft Cinema*. Available at: http://manovich.net/index.php/projects/soft-cinema-zkm (Accessed: 19 July 2021).

Manovich, L. (2005) 'Soft cinema navigating the database / Lev Manovich, Andreas Kratky'. Edited by A. Kratky. Cambridge, Mass.: MIT Press.

Metz, C. (1974) Film language: a semiotics of the cinema / Christian Metz; Translated by Michael Taylor. New York: Oxford University Press.

Mylov, P. (2002) 'On space, its time, and spatiotemporal expressions', in Virtual

Space. Springer, pp. 47–70.

Newman, J. (2004) *Videogames*. Routledge (Routledge introductions to media and communications). Available at: https://books.google.co.uk/books?id=%5C_r3DyYoo2NQC.

Nitsche, M. (2007) 'Mapping Time in Video Games.', in *DiGRA Conference*.

Nitsche, M. (2008) *Video game spaces : image, play, and structure in 3D game worlds*/ *Michael Nitsche*. Cambridge, Mass.; London: MIT Press.

Pasolini, P. P., MacAfee, N. and Owens, C. (1980) 'Observations on the Long Take', *October*, 13, pp. 3–6. doi: 10.2307/3397696.

Pow, W. (2012) *Anna Anthropy: Queering Video Games One Pixel at a Time* | *Autostraddle*. Available at: https://www.autostraddle.com/anna-anthropy-the-autostraddle-interview-143395/ (Accessed: 19 July 2021).

Salen, K. and Zimmerman, E. (2004) *Rules of play : game design fundamentals / Katie Salen and Eric Zimmerman*. Edited by E. Zimmerman and Askews. Cambridge, Mass.; London: MIT Press.

Schell, J. (2015) *The Art of Game Design, 2nd Edition / Schell, Jesse.* 2nd editio.

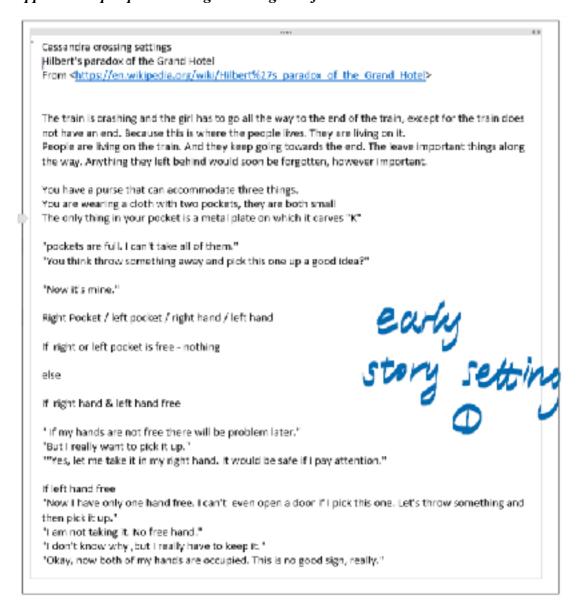
Schon, D. A. (2008) Reflective Practitioner How Professionals Think In Action. New York: Basic Books.

Vegas, J. (no date) (25) Mini Unity Tutorial - How To Create Multiple Choice Options - YouTube. Available at: https://www.youtube.com/watch?v=uZNsc-jWk9g (Accessed: 9 September 2021).

Vosmeer, M. and Schouten, B. (2014) 'Interactive cinema: Engagement and interaction', *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 8832, pp. 140–147. doi: 10.1007/978-3-319-12337-0 14.

Appendices

Appendix A: pre-production game design drafts



An intangible character



She would got caught in the darkness, for sure. (when she have things in both hands / when she reaches the 5th carriage)

[Huge sound] Camera snapped to a banging door

"I must go! I must go fast!"

If she doesn't leave the carriage, she's dead.

After that, every carriage has a two minutes count down(accumulative).

"I can't open the door with things in both hands! "

"throw away the thing in your right hand".

"throw away the thing in your left hand".

(she encountered such a carriage before that is locked at the end)

I must find the password. The clue must be here!

Not every carriage is locked?

Skeleton key (it only opens the locks of carriages)

Letter to Androecia(the story of the train)

People who die of old ages they wait for the

A box necklade, with her mothers note:

Dear Aster.

Because you were deeping so soundly, and I didn't want to disturb your dream, I will go on to the next coach first. I'll see you ahead of the way.

Be careful, you don't want to be caught in <mark>black tide.</mark> And I would regret so deep to be unable to see you ever again.

Love you More

A wrapped small candy. Her finger sensed a bit stickness from the plastic wrapping paper. The eardy must have melted before.

The train's full of forgotten, abandoned things that used to belong to someone, used to mean somethings.

She wonder whether she was part of this enormous dump called the Forgotten.

She remembers her brown eyes and dark, stringy hair.

Nora. Her morn, the word sounds almost alien.

It's snowing. She has to go.

Step right, (the pic moves to her feet level.)

A bunch of dided torget-me-not. She can't help but think of whoever torgets it here.

Carriage 3 - 218355

Aster.

Exercise con-

She saw the flower in his hair. Aster, The flower she was named after. If doesn't seem a colorifice of

I see you already forgot me. Do you still keep the flowers I made for you?

Proof flowers sticking and her purse

7

86+89/fm glad. Remember? The florlography of aster is "I won't torget you".

Memories and desires

Mirosotic savetice

From samps://en.wikipedia.org/wiki/kiyosoris-

"Sylvan."

He smiles and held her hands in his.

Forget meinot, Aster. We will see each other again. I never doubt that,

then he's attached to her until this scene ends.

I see you already forgot me. Shame, I know flowers, aren't made to <u>everlast,</u> yet...

He takes off the flower crown

She can't help but feet like losing something very important.

Aster, it is so easy to get lost on this train. I don't blome you. It everything is meant to be broken, at least don't fraget who you see.

He kisses her forehead

Farewell, Farewell, Next time we meet, we shall be strangers. We larget like water in the ocean, we have like leaves on the free.



early loyour

It's snowing outside And she wakes



- 1 her mom's note / bunch of flower
- 2 are you helping people? the dead woman a page of a book / crossing
- 3 background Sylvan
- 5 open the train method
- 6 memory that you are not willing to lose
- 7 final key

Oh thank you little girl. My pocket must have a hole on it.

Yes yes, this is a large number. Do you know what is this? This is the number of carriages I have walked through my whole life. And counting I;)

No I don't think there is an end in this train. But my opinion is not supported by any evidence, anyway. You are still young! Don't think of end, death, such thing!

I mean, when you are at my age, to lend it is all so easy. I can just walk back a few blocks and pfffff! Black tide kisses me, and it's done! Everything done! Nothing can bother me any more!

You don't like it, right? Neither do I. Go on your trip! Old man here needs some rest. I'll catch up later!



How was your mom Nine? It's been so long, and you have grown so much.

.....

Ahh, yes, people these days tend to forget a lot of things.

Have I met you? Why can't I remember anything about you?

I don't think so, Aster. Even if we had met, probably briefly for once, I am no part of your life. But I haven't seen Nina for a long time... I miss her very much.



Humpry Dampty cat on a wall,
Humpry Dampty had a proof fall.
Four-score Niemand Four-score mote,
Could not make Humpty Dampty where he was before

SEE YOU LATER ALLICATOR, IN A WHILE CROCODILE, DON'T FORGET TO WRITE.

From Stige //www.mobils.com//deptendings/amoremis/Enterla/someting 1 No. March Nings and ting state?

This develop world — is a develop world, And ye., and yet...

When the child was a child, it didn't know it was archild. Everything was full of life, and all life was one.

From change: Version lends, com/bits/90000015 for an oversion 8004416

is life under the sun not just a dream? Is what I see and hear and smell not just an illusion of a world before the world?

From Pytos / www.nevene-angle.com/deuts/hffme/letalog/fime/ne/www.2/wispoddesirs/wod-sone-of-childhood.http/

tuords hetween scenes

Appendix B: early-stage sketches

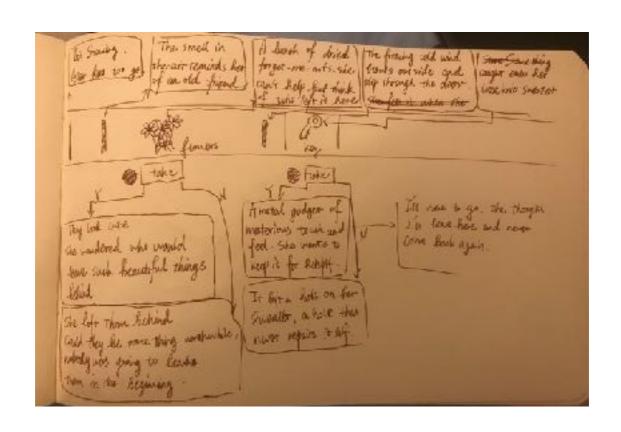












Appendix C: Cutscenes Illustrations











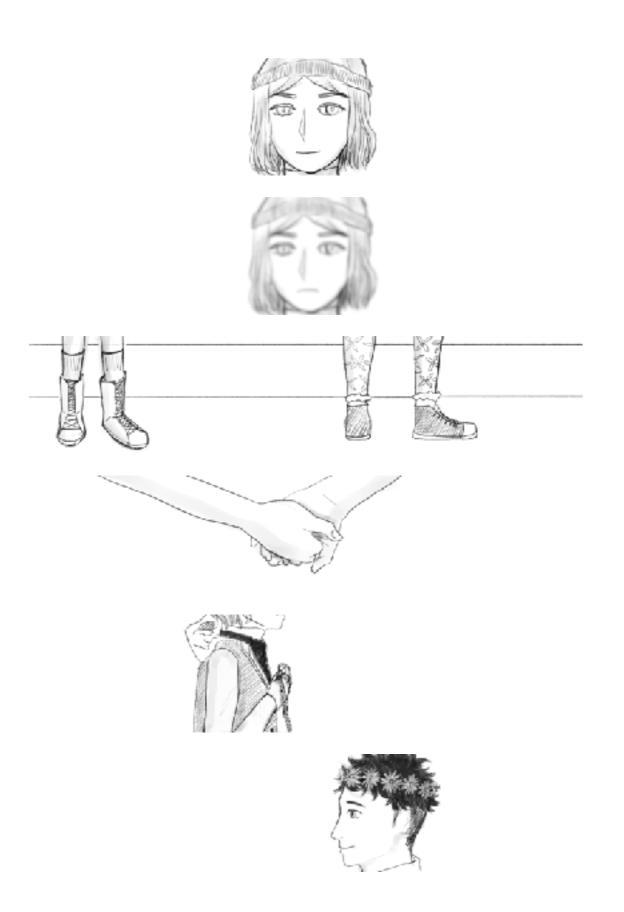








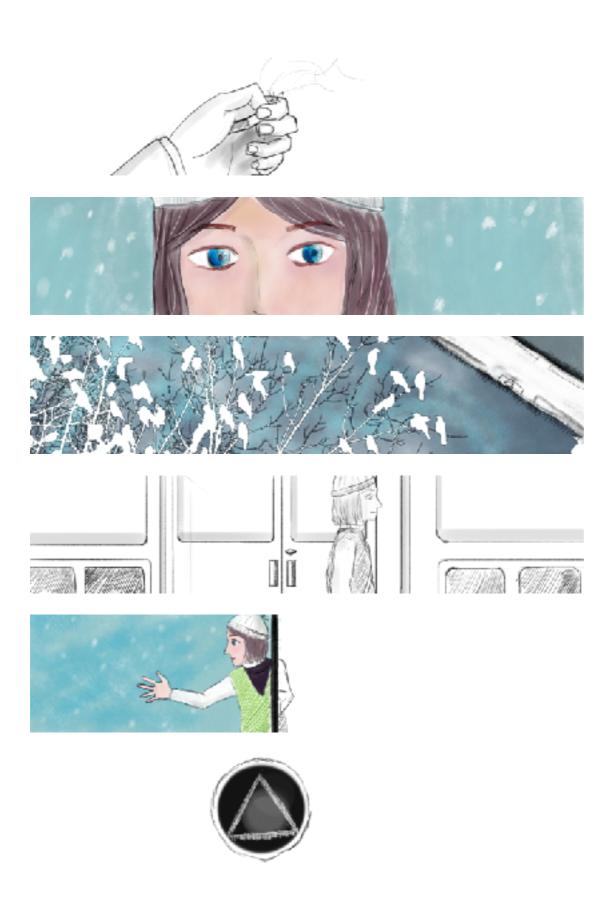


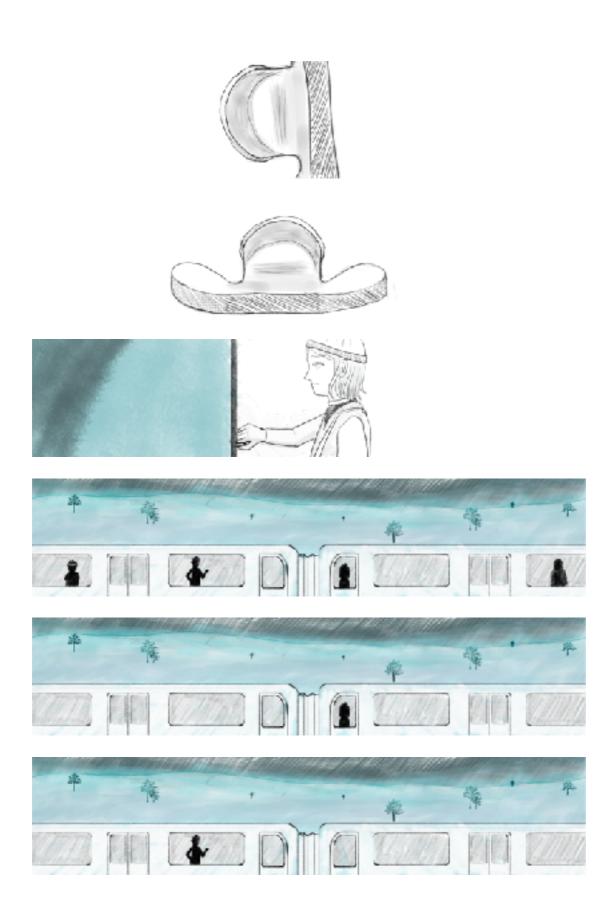


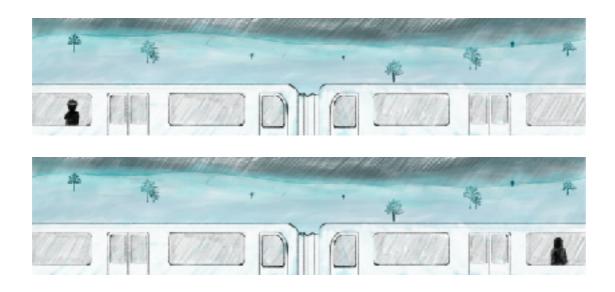












Appendix D: UI images





















Appendix E: Resources

Music:

Farmer, R. (1996) Free Music Archive: Robert Farmer - Lila, Part 1. Available at:

https://freemusicarchive.org/music/Robert Farmer/a-second-fiery-flying-roll-1996/

lila-part-1 (Accessed: 9 September 2021).

Coding Tutorials:

Chris' Tutorials (2018) Open and Close Menus with Buttons or Escape Key | Unity

2018 Game Development - YouTube. Available at: https://www.youtube.com/watch?

v=aN11LnlF89I (Accessed: 9 September 2021).

Jimmy Vegas (2017) Mini Unity Tutorial - How To Create Multiple Choice Options -

YouTube. Available at: https://www.youtube.com/watch?v=uZNsc-jWk9g (Accessed:

9 September 2021).

Code Monkey (2020) Simple Chat Bubble in Unity! (Chat, NPC, Multiplayer) -

YouTube. Available at: https://www.youtube.com/watch?

v=K13WnNL1OYM&t=339s (Accessed: 9 September 2021).

Code Monkey (2019) How to make Text Writing Effect in Unity - YouTube. Available

at: https://www.youtube.com/watch?v=ZVh4nH8Mayg&t=387s (Accessed: 9

September 2021).

Adamant Algorithm (2020) Unity Beginners - How to Loop the Background Image -

YouTube. Available at: https://www.youtube.com/watch?v=U72trwZ7AT8&t=461s

(Accessed: 9 September 2021).

75

Code Monkey (2018) Quick Tip: Referencing Assets through Code | Unity Tutorial - YouTube. Available at: https://www.youtube.com/watch?v=7GcEW6uwO8E (Accessed: 9 September 2021).Jimmy Vegas (2017) Mini Unity Tutorial - How To Create A QTE System - YouTube. Available at: https://www.youtube.com/watch? v=pzr1f85xeMc&t=1168s (Accessed: 9 September 2021).

Code Monkey (2020) Character Controller in Unity 2D! (Move, Dodge, Dash) - YouTube. Available at: https://www.youtube.com/watch?v=Bf_5qIt9Gr8&t=663s (Accessed: 9 September 2021).

Code snippets:

de Paula, B. (2021) GitHub - brunohpaula/DGD2021-Week4. Available at: https://github.com/brunohpaula/DGD2021-Week4 (Accessed: 9 September 2021).

Drew, A. (2021) GitHub - AbelDrew/DM-ProductionWeek7. Available at: https://github.com/AbelDrew/DM-ProductionWeek7 (Accessed: 9 September 2021).