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The Remediation of Nosferatu – Exploring Transmedia Experiences

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ABSTRACT

In this paper we present *The Remediation of Nosferatu*, a location based augmented reality horror adventure. Using the theory of fictional universe elements, we work with diverse material from Nosferatu's horror genre and vampire themes as a case study. In this interdisciplinary research we intertwine traditional storytelling and scriptwriting skills with interaction design methods. For the game setting, we create hybrid spaces merging the fictional universe and the physical environment into one pervasive experience, centering around a variety of augmented reality activities played out at sunset. Focusing on the phenomenological world of 21 participants, we analyse triangulated data by distinguishing between a range of more 'open' and 'closed' styles of interactions. Our study illustrates how Speculative Play may enable non-linear storytelling elements within a transmedia fictional universe. We believe our approach can be more generally useful for designing future rich, enjoyable and meaningful transmedia experiences.

Author Keywords

User Experience Design; Fictional Universe; Transmedia; Open & Closed Qualities of Experiences

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

While much research deals with processes or methods for generating meaningful experiences through technology in general, only a few studies address the quality of transmedia experiences. Transmedia [19, 20 and 21] is a

particular form of entertainment, where a story is told and experienced through a distributed and fragmented interactive system. Transmedia design is an interdisciplinary endeavour, merging more traditional storytelling and scriptwriting with Human-Computer Interaction (HCI) and interaction design. In this paper we empirically investigate emerging experiences within a transmedia fictional universe—*The Remediation of Nosferatu*—styled as a location based augmented reality horror adventure. We used a phenomenological approach [26], focusing on the individuals' meaning-making [29]. We further link emerging experiences to the material configurations (i.e., the design), we provided. The goal of this paper is to deepen knowledge of how to design fulfilling, meaningful and engaging transmedia experiences.

We contribute with this paper an interdisciplinary design approach that merges the theories of Transmedia [19, 20 and 21], Fictional Universe, Trajectories [1, 10], Speculative Play [24] and Experience Design [9, 12, 32 and 16] by focusing on the quality of experiences.

Transmedia, Fictional Universes, Experience, Trajectories, AND Play – the Theoretical Background

In 1999 Marsha Kinder [21] coined the term *Transmedia* to describe the trend to extend TV or movie characters and storyworlds to video games. Henry Jenkins further developed the term into *Transmedia Storytelling* [19], defined as 'a process where integral elements of a fiction get dispersed systematically across multiple delivery channels for the purpose of creating a unified and coordinated entertainment experience. Ideally, each medium makes its own unique contribution to the unfolding of the story.' (See 'Transmedia 202' [20]) Accordingly, transmedia systems (i.e., the material configuration to tell these stories) pose the challenge to deliver a coherent, meaningful experience through several 'sub'-experiences created by distributed and fragmented materials, such as location-based video messages [25], or game-like challenges [15]. The story becomes pivotal for creating the experience. However, the fragmented and interactive nature [9] of those systems limit the designer's/author's control of the story progression. The successful strategy employed to

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address this issue, is to create a 'fictional universe' rather than a storyline. The Fictional Universe acts as a backdrop to emerging stories and as the glue that combines fragments into meaningful experiences, as they unfold through interaction [20].

The idea of a Fictional Universe is not new—it dates back as far as 1516 [23]. Fictional Universes makes use of several intertwined elements, namely genre, theme, setting, existence, concept and conflict [4] to create a rich backdrop. Genre (e.g. horror genre) defines the style of a fictional universe, setting its time and place, existence introduces characters and objects, theme represents the idea or subject of the world (e.g. vampire theme), and concept describes any key events that impact the world and lead to conflict. Within a fictional universe all elements are of equal importance and a designer/author may use any element as her starting point.

What distinguishes a fictional universe approach from linear storytelling is the level of detail and internal consistency. Linear storytelling frameworks have been popular since Aristotle; examples include Hero's Journey [30] or the Dramatic Arc [11] and follow one line of engagement. A fictional universe on the other hand has a multifaceted established continuity (that may enable several interwoven storylines) and internal logic that must be adhered to. The most popular example of a fictional universe, Tolkien's *The Lord of the Rings* [28], illustrates how complex and far-reaching this can be. Tolkien created first the language of the fictional universe, 'Elvish' and then the fictional world itself, what he describes as '*primarily linguistic in inspiration and was begun in order to provide the necessary history for the Elvish tongues*' [27].

We focused on a fictional universe as a basis for our transmedia experience because its elements (genre, theme, setting etc.) enable a logical follow through when designing interactive roles for rich, meaningful transmedia experiences.

Transmedia spans an array of technologies and heavily draws upon interactive systems, which pulls HCI and Interaction Design related theories of experience into focus. For *The Remediation of Nosferatu*, we built upon the notion of experience-oriented or Experience Design [9, 12, 32 and 16] during transmedia fictional universe creation. Specifically, we followed Hassenzahl's [17, p73] notion that '*...experiences are emergent, and in Experience Design, we use functionality, content, presentation and interaction as materials to create and shape experiences.*' (see also [18] for a more process-oriented description of *Experience Design*). Further, we especially focus on *how* people connect with the material and its appropriateness for the chosen fictional universe. Since *Nosferatu* draws upon the horror genre, a genre that often uses surprise or speculation for creating suspense, we further borrowed from Speculative Play [24]. In Speculative Play... '*participants actively figure out how something works—both the*

conceptual and the technological aspects of the work—with testing and debating various theories; often done in collaboration with others/strangers. Speculative Play can occur through verbal, embodied, associative and/ or cooperative play...' [24, p. 8].

In order to enable Speculative Play for *The Remediation of Nosferatu* we cut the original movie into fragments. Then we scouted for locations that would resemble locations in the original movie material. It was important to find suitable locations and to ensure these locations were proximate enough to safeguard the dramaturgy logic, which may have called for sequences of *sub-experiences* in a certain order. Applying elements of Freytag's Dramatic Arc [11], i.e. exposition, rising action, climax, falling action, and dénouement, we located each sub-experience. By repurposing the Dramatic Arc into an emergent location-based dramaturgy centering around a climax area we allowed for several Interactional Trajectories. Interactional Trajectories [1, 10] describe journeys through an experience that passes through Hybrid Structures. Such Hybrid Structures may include '*hybrid spaces, hybrid times, hybrid roles and hybrid ecologies*' [1, p 719]. Speculative play allowed participants to find their own trajectories and in so doing, to construct their own narrative. For designing the *sub-experiences* we applied the theory of Hybrid Spaces [1, 10] to merge the virtual content (i.e. the movie fragments) with a suitable frame within the real environment. We needed to find exact frames that would blur the borders of real and virtual spaces borrowing from pervasive game design [22]. We wanted to instill a feeling of horror and surprise, as if the participant would physically enter into a potentially dangerous situation, as is often the case in the horror genre.

In this paper we detail the design challenges we encountered and the strategies we used to design this transmedia location-based augmented reality horror adventure. We outline *The Remediation of Nosferatu* by illustrating the phenomenological world of one participant to offer insight into how we designed and orchestrated the overall experiences and the involved *sub-experiences*. Finally we outline the results of our thematic analysis and conclude by discussing the role of Speculative Play as well as the suitability of open and closed experiences within a transmedia fictional universe.

THE REMEDIATION OF NOSFERATU

Based on the general notion of experience shaped through the material, trajectories as journeys through hybrid spaces created through interactive technologies, and the specifics of Speculative Play, we created *The Remediation of Nosferatu*, a location-based augmented reality horror adventure (see figure 1). It is a 'remediation' of *Nosferatu*, a German expressionist horror movie from 1922 by F.W. Murnau, featuring Max Schreck as the vampire Count Orlok. Following a court ruling, only one illegal copy of this unauthorized adaptation of Bram Stoker's *Dracula*

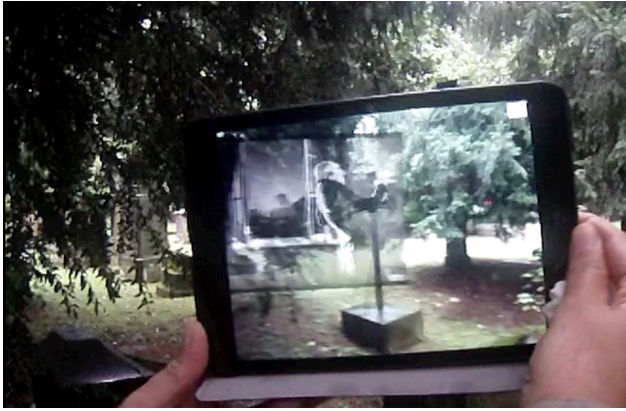


Figure 1. The Remediation of Nosferatu a Location Based Augmented Reality Horror Adventure

survived. Upon rediscovery the movie became regarded as one of the most influential cinematic example of its times. We chose *Nosferatu* as our transmedia content because it is based on a fictional universe that entails many myths and side stories and because its expressionistic quality allows for ambiguity [12] and Speculative Play [24].

Over all, we designed and evaluated 12 single, location-based *sub-experiences*. For designing the *sub-experiences* we cut the original movie into fragments, found suitable locations that resembled the locations in the movie, designed hybrid spaces [1] and arranged them in proximity to these locations. Participants were free to choose their starting point and the order of events (i.e., their trajectory [1]). The overall experience lasted approximately 40 minutes. It ran on a 7.9-inch display tablet, using a customized version of the augmented reality App Zeitfenster [33].

An Illustrative Experience

To provide an in-depth impression of *The Remediation of Nosferatu*, we present a particular experience taken from the empirical exploration of the system. ‘Sam’, our example player, was 26 years old, a passionate cineaste, employed as an architect, who like to play casual games. We met Sam at an urban park. Sam started *The Remediation of Nosferatu* on the tablet provided. He was prompted with a black and white map informing him about mysterious deaths in ancient ‘Stuttgardia’. He was further told that all spots highlighted on the map could be visited in any given order. However, he can only learn more at the exact location and at a particular view. His goal was to find out what happened in ancient ‘Stuttgardia’. Upon reaching the first spot, a bridge over a busy street, (Figure 2), Sam heard music and was prompted to find a certain position and angle illustrated by a particular ‘frame’ on the tablet. The moment the frame and his actual camera-position matched, a semi-transparent video was played back that visually merged with the physical environment. The video showed a woman balancing on the balustrade of the bridge. To ‘Sam’ the scenery felt like a hint from the past, the woman being an



Figure 2. Bridge, an Open Sub-Experience

unsettled ghost asking him for help. Sam then entered the park. Music started to play, and Sam hurried to find the next spot. It was hidden under a tree and featured a carnivorous plant. Sam began to speculate whether a new type of plant may have poisoned the citizens of ancient ‘Stuttgardia’ and rushed to the next location. It featured a group of university professors at the gate of a university building. The professors were reading reports about incoming ships, speculating if ‘the plaque’ may have caused the deaths. Sam was slightly annoyed by this since it did not fit the story he already started to construct. Driven by curiosity, Sam entered an old graveyard that has been converted into a park. The sun had already set, it was getting dark, and Sam hesitated: ‘*Do I really need to go there?*’ He walked across various very old, partly disintegrated graves. To him the old abandoned graveyard looked like a location of a horror movie and he remembered the ‘ghost’ he saw earlier. He found a certain gravestone. Count Orlok aka Nosferatu entered the scene by rising from the grave (Figure 3) and Sam was told that he has 60 seconds to find a cross on a specific grave to stop the vampire from attacking him.

After a brief state of shock, Sam started to laugh. He now realized that the vampire has caused the deaths in ancient ‘Stuttgardia’ and remembered that he had ‘seen’ Count Orlok earlier, lurking under a bridge he passed. Sam started running across the graveyard to find the requested cross, where he met Nosferatu again one last time before Nosferatu dissolved into ether (Figure 4).

Designing The Remediation of Nosferatu

We aimed for an overall experience of curiosity, tension and ‘black-humour’ horror. Table 1 summarizes the design rationale, linking elements of the fictional universe with content, design choices (and specific theoretical constructs). For *The Remediation of Nosferatu*, the fictional universe elements setting, genre and theme played a key role. The horror genre affords speculation and surprise. The vampire horror offers a rich mythical structure, rules, side stories and characters, such as the vampire hunter ‘Van Helsing’.



Figure 3. Nosferatu Rises and Attacks.



Figure 4. Nosferatu Dissolves into Ether

The settings were chosen to ‘physically’ place participants in a fictional universe by matching publicly and physically available objects (e.g., gravestones) or locations (e.g., an old bridge) to the fictional universe. By that, we created hybrid spaces (see [1]) combining virtual and physical environments to merge the fictional universe and the environment into one experience [22]. In addition, temporal aspects became important. Within the vampire genre, day and night standardly play significant roles for certain kinds of activities and we subsequently placed our experience around sunset.

A good part of the interaction with *The Remediation of Nosferatu* was based on the idea of ‘Speculative Play’ [24] where participants are free to access various spots on a map in any sequence. Speculative Play was encouraged by inviting participants to actively figure out how the system worked, choose their order of *sub-experiences* and speculate over their resulting and emergent narrative. Here, Speculative Play may enable non-linear storytelling and ownership of the generated, emergent experience by allowing the participant to not only apply their own meaning making [29] but also to construct their own stories based on the order of *sub-experiences* they choose. Once they had reached a designed sub-experience, participants had to find the exact location of the content and match a frame in order to merge the real with the virtual content. We witnessed a number of different methods to solve this. Some participants, for example, covered the camera to see

Fictional Universe Element	Original Content	Interaction Design Choices
Genre	Expressionist Horror Genre	Create a feeling of tension, curiosity and ‘Black-Humoured’ horror
Theme	Vampire Theme	
Setting	18th Century Germany	Using public physical objects that match setting and existence to create a pervasive experience [22] though hybrid spaces [1].
Existence	Turn of century architecture, park, graveyard, grave stones and crosses	
Concept	Mysterious deaths in ancient Germany	Motivate curiosity and afford Speculative Play [24] to resolve conflict
Conflict	Killer on the lose	

Table 1. RON Experience Design Choices

the content without the real world. Other participants stretched, ran, even got down on their knees or hid in certain contexts. Speculation on events that lead to the climax of the story was one of the main effects we wanted to afford with Speculative Play. We aimed to determine if harnessing the power of Speculative Play as part of constructing a story will ensure participant engagement, or if it may disrupt or break their already constructed narrative. However, in order to advance a story (i.e., to provide some drama and closure to the experience), we positioned the single *sub-experiences* (i.e., locations) in a circle around the ‘climax area’ (the graveyard), see figure 5 where we gave some clear instructions how to interact.

The circular positioning of the sub-experience was organized based on the idea of the Dramatic Arc [11]. The exposition phase positioned at the outer circle was designed to get to know the characters, speculating over events etc. The rising action area was designed for a feeling of urgency. The conflict finally peaked at the climax area, positioned at the center of the circle (the graveyard) where the participant became more important for the story and had to interfere. We placed the content in a real environment so that participants had to physically locate *sub-experiences* in order to advance in the story. However at the same time we wanted participants to find a natural end of the holistic experience at the climax area (i.e. the graveyard). For the non-linear storytelling approach it was necessary to carefully pick a suitable location and match the existing video material with the natural frames available within that location. Speculative Play allowed participants to take various paths. For the alternative walks it was necessary to



Figure 5. Non-Linear Storytelling based on Locations

test all possible paths for narrative logic and flow [5] in order to ensue a rich and meaningful holistic experience.

EMPIRICAL STUDY

Approach

Since we were primarily interested in how our designed experience unfolds and maintains for the experiencer, we took a phenomenological approach [26], focusing on participants' lived experiences.

We ran 21 explorations with volunteer participants (8 female, the average age was 30 (Min=18, Max=62). We provided a time limit of 40 minutes. On average the participants tested the prototype for 33 minutes. We designed and evaluated 12 *sub-experiences* (locations). The participants were free to choose the order of *sub-experiences* and the duration of stay.

To better understand how emerging experiences correspond to design elements, we applied a variety of data collection methods. In retrospective interviews, we probed the lived experience of participants, supported by prompts such as 'How would you describe today's overall experience in your own words?' or 'How immersed did you feel in this particular sub-experience?' To understand each individual usage, such as order of *sub-experiences* (i.e., the trajectory taken), we tracked the movements of each participant using a GPS tracking software. We further filmed and observed experience from a distance in order to note points of interest, emergent themes or exploratory comments. Additionally, we captured each experience using screen capture software on the device used by the participants (see figure 3 and 4).

Data Analysis

We followed the thematic analysis approach to analyze our data, making multiple passes through each data source to categorize observed design issues and effects on participants [6]. After transcribing all interviews we generated an initial code by researching where and how

patterns occurred. Here our main area of interest was meaning making and the phenomenological world of the participants during the overall experience and within each sub-experience. For the purpose of combining codes we mapped existing participant knowledge, using HCI methods such as *experience materials* [17]. Including presentation, content, interaction and functionality that may be related to a participant's phenomenology. After combining codes into over-arching themes that accurately depicted the data, we collected, grouped and added additional research data in a multimedia table (containing video, sound, text and GPS data). Each participant's account was approached individually to maintain an idiographic focus. We constantly compared the patterns emerging from and across these resources to ensure validity of our study through triangulation [31]. For example if a particular player described the overall experience as fragmental or bizarre we looked at the GPS tracking data to look at the order of events the participant took, as well as at the video reports and the post experience survey. We framed our analysis in order to uncover strategies to improve designed experiences. In a further step, we combined the major findings from each participant to summarize the most common findings.

Results

Table 2 illustrates the experience trajectories taken by the 21 participants. Participant 1, for example, started with sub-experience A continued his personal trajectory with location C, D, E and finally visited the climax locations M and N. In addition Table 2 illustrates if the quality of the holistic experiences, and each *sub-experiences* by itself, was perceived as open or closed

Many topics emerged during analysis of our data. The needs perspective [17] for example revealed the overall need for more stimulation with material. Here, 14 out of 21 participants wanted to engage more with the material. For example, IT Student (P 21) suggested '*...I started to think of opportunities to add sensor based objects within the environment maybe because I study imbedded technologies at the moment... e.g. the carnivorous plant seemed to invite for more physical interaction... I don't know... I wanted to search and pluck it and see if I can use it later on...*' Here we found evidence for the theory of own meaning making [29] or relatedness [17]. However we wanted to explore how meaningful or pleasurable the experiences were for the participants. Here the most potent theme emerging from the analysis was a difference between 'open' and 'closed' [8] experiences because it helped us to further understand the differences in perceived quality and subsequently how to design meaningful transmedia experiences in future.

Participants used two contrasting ways to describe the quality of the different *sub-experiences*: (1) more abstract and open type of experiences (highlighted in yellow in Table 2, and (2) more closed or prescribed type of experiences (highlighted in blue in Table 2).

Participant	Profession & Age	Duration	Experience Trajectories												Holistic Experience	Haptic Needs
			A	B	C	D	E	F	G	H	I	J	M	N		
1	Concert Event Manager (42)	28	1		2	3	4						5	6		
2	Graphic Designer (27)	34		1			3			2	4	5		6		*
3	Retired Researcher (62)	44		2				1	3	4		5	7	6		
4	Copywriter in a Marketing Agency (33)	30		4			2	1	3	5		6	8	9		*
5	Lawyer (44)	29	1		2	3	4				5	6	7	8		*
6	Student- UXD (27)	39		1		2	3		4	6	5		7	8		*
7	Student- Media Management (24)	47	7	2		6	5	1		3	4		8	9		*
8	Social Worker (30)	26	1	2			3				4		5	6		
9	Cinematographer (23)	28						1		2		3	4	5		*
10	Student –Sport (31)	34		2			3	1		5	4	5		6		*
11	Media Agency Admin (39)	32	1		2	3					4		5	6		
12	Architect (26)	35						1	2	3	4	5	6	7		*
13	Game Designer (25)	25	1		2	3					4		5	6		*
14	Concept Designer (28)	27	1		3	2			4			5	6	7		
15	Student- Cinematographer (33)	44	6	2	7	8	5	1		3	4		9	10		*
16	Key Account Manager (24)	27	1		2	3					4	5	6	7		
17	Student IT (22)	30		2	3			2			4	5	6	7		*
18	Student Mobile Media (22)	29	1		2	3					4	5	7	6		*
19	Musician (32)	39		4			2	1	3	5		6	7	8		
20	Pupil (18)	33	1		3			2		4				7		*
21	Student- IT (22)	28			2	3		1				4	6	7		*

Table 2. Participants Experience Trajectories

Annotations:

Quality of Experience:

Closed
 Open

* Expressed need for more haptic interactions

Open qualities of experiences were described as *a distant dream* or *a greeting from the past*, and in some cases as *unrelated*, *confusing* or *bizarre*; while closed qualities of experience were described as *clear*, *instructive* or *obvious* and in some cases as *boring*, *forced*, or *too obvious*. Two participants voiced a preference for either more open or closed styles of quality. Participant 5 summarized ‘... *the video that was placed at the window of the university with the professors speculating over the cause of the deaths was the best fit... that felt very real to me... I didn’t know what to make of the woman on the bridge that seemed unrelated...*’

Interestingly, we found that while participants may described the quality of the overall experience as open, participants individual encounter of each sub-experience may have differed from the overall quality. This is also supported by the fact that 19 out of 21 participants described the experience as fragmental.

Sub-Experience A and M were almost unanimously described as closed type of experiences. Here everything necessary to understand was explained. Sub-experience A revolved around the loving relationship of a couple and M was part of the climax, where Nosferatu attacks the player. A was perceived as explanatory and left little room for speculation. M called for a clear action, i.e., finding a specific cross in time to destroy Nosferatu. All participants understood and accepted the sub-experience as if factual, even if it did not fit into the world they constructed earlier.

In contrast, F and N were almost unanimously perceived as open. F featured a woman balancing on a balustrade and N was part of the climax and showed how Nosferatu dissolved after the participant found the right cross. Here the story is not fully explained and works with relations, hints and association that may lead to more diverse interpretations. Open experiences differ, because they lack explanation and clear instructions e.g. having to find out what the involved action should be or working with symbols, metaphors or association. We found various interpretations of the content such as ... *the video’s hovered like a distant memory before me ... ‘...visually beautiful it looked like a distant dream or a greeting from the past...’*, ‘...*the graphics were great. The semi-transparent design was very mythical and a little odd. It made me very curious...*’ ‘...*watching the video felt like a message from the past, an unsettled ghost asking me for help...*’

Speculation (Speculative Play) allowed the participants to choose the order of events and in some cases (P10, P18 and P20) this lead to an experience that lacked or altered the climactic ending. In the case of participant 18, a female student, she experienced Nosferatu dissolving into ether before he rose from the grave, leaving her with an open ending that was much appreciated by the student. ‘*In the end I see how the vampire rises from the grave, that felt like a cliff-hanger to me, I liked the idea of that there is more to*

it and that in the end I didn’t manage to resolve the case’. In the case of participant 20 where the rise of Nosferatu was skipped the overall experience seemed spoiled. ‘...*when I came into the graveyard I was expecting things to happen... but then nothing exiting happened...that was disappointing.*’

Additionally, triangulation of data revealed that if all materials that shape an experience [17], presentation, content, interaction and functionality, were perceived as open, such as in *sub-experience* F and N, the experience was more likely to be perceived as ‘bizarre’ (P 4), ‘strange’ (P 7) or ‘unclear’ (P 19). On the other hand, for others, if all materials were perceived as closed, such as in *sub-experience* A and M, the experience was perceived as ‘wrong’ (P 8), ‘unsuitable’ (P 13) or ‘overly obvious’ (P 15). Table 3 illustrates open and closed themes collected and assigned during data analysis.

	Open	Closed
Positive context	‘Surprising’ ‘Spontaneous’ ‘Ethical’ ‘Mysterious’	‘Clear’ ‘Instructed’ ‘Obvious’
Negative context	‘Unrelated’ ‘Bizarre’ ‘Strange’ ‘Unclear’ ‘Without a purpose’	‘Wrong’ ‘Unsuitable’ ‘Forced’ ‘Unspontaneous’ ‘Overly obvious’

Table 3: Participants Adjectives

However we also found that construing one’s own experience as open or closed depended on the participants themselves. Some *sub-experiences* were perceived as open or closed by a majority of participants such as sub-experience A, F, N and M. Whereas for other experiences (e.g., H), open or closed qualities seemed to be more dependent on the particular participant. P3, for example, described all *sub-experiences* as open while P5 described most *sub-experiences* as closed. While P3 appreciated the freedom of interpretation of a specific abstract experience ‘... *starting with seeing the woman on the balustrade was a great start... very magical and ethereal... I felt as if she wanted to contact me...*’ P5 described the same experience, within the same context of use, as unrelated and out of context. ‘... *and then all of the sudden without an explanation this woman appeared on the balustrade, what was this about?... Strange...I didn’t get it...*’.

As part of the retrospective interview we asked participants to summarise their experiences and participant 21 explained in his retrospective interview ‘... *I generally don’t enjoy explorer type of games. When I play a game I like clear instructions and clear goals. I found the overall experience confusing and somewhat boring... I might not be the right person to ask here since I don’t enjoy explorer games in general.*’ Here participant 21 explained to us that he did

not enjoy the genre of the game and raised the point of player type suitability.

Participant 3 in contrast enjoyed the open quality of the experience and explained in his retrospective interview ‘... I would describe last weeks experience like a journey. One knows where and when to go but is not sure what it will feel like...On my journey I encountered various adventures and two experiences stuck to my mind. I was thinking of the woman on the balustrade and how beautiful the transparent movie was. I also thought about the experience at the university and how typical it was for university professors to sit there, talk and argue while disaster strikes.’

Summary of Findings

All participants found the overall experience to be a holistic one, with most (67%) wanting more haptic styles of experiences (e.g. touching material such as grave stones, crosses or searching and collecting materials such as carnivorous plants). Overall we evaluated 145 *sub-experiences* out of which 41 (28%) were described as closed, 66 (45%) as open and 38 (26%) could not be assigned to open or closed qualities. Most found *sub-experiences* A (91%) and M (94%) to be more closed. A was understood as an explanatory introduction to the fictional universe and M gave some clear instructions to follow. In contrast all participants described the *sub-experiences* F and N as open. Here the participants used abstract terminology to describe the sub-experience (such as ‘a distant memory’, or ‘mythical’), or disliked the experience because of its open quality (using adjectives such as ‘unrelated’, ‘unclear’ or ‘bizarre’) and were more likely to assign own meanings to the content. On average the open type of experience were described as positive by 44%, and as negative by 23% and 33% of the participants used neutral terms to describe the open type of experiences. Here we found that if all materials that shape an experience (content, presentation, interaction and functionality) were perceived as open or closed the particular sub-experience was more likely to be perceived as negative. In summary we found that 74% of the participants described the quality of each sub-experience, as either open or closed and only 26% of the participants reflections could not be assigned to open or closed type of experiences. This suggests that being more aware of open or closed experiences as a potential qualitative dimension seems helpful to improve the design of experiential systems.

DISCUSSION

Enabling-encouraging Speculative Play to allow participants to construct their own stories, their own trajectories, within a transmedia fictional universe raised two interesting issues. First, in our case the content, that is the movie *Nosferatu*, had to allow for fragmentation. Such fragmentation seems to call for novel script writing that looks at a fictional universe as a sandbox where a story may emerge rather than thinking in linear storylines. Second, non-linear storytelling bears some obvious risks one has to

consider, narration may break if the order of events are not suitable or the participant may end in a dead end of the universe if speculation proved incorrect. Here a careful orchestration of *sub-experiences* is necessary in order to ensure flow and dramaturgy.

Many HCI methods and techniques discuss experience design. While some assume that an experience can and should be designed and then narrated through interaction with the designed artefact(s) [e.g., 18] others stress the need for ambiguity. Gaver [12, 13 and 14] for example stresses ambiguity as a resource to build one’s own narratives and meaning: ‘Ambiguity... can be an important factor in crafting interactive design that are engaging and thought-provoking ... ambiguity frees user to react to designs with scepticism or belief, appropriating systems into their own lives though their interpretation ...’ [12, p.240]. Here, experience is understood as an act of appropriation made possible by artefacts, but not designed in and of itself. However in later work Gaver also described the need for balancing *prescriptive* and *emergent* design orientations [14]. One example of a more prescriptive approach, understands experience designers foremost as authors of experience: ‘Only after having outlined the desired emotional and cognitive content of an experience, the action involved, its context and temporal structure, (she) may start designing the ‘product.’ And then, each and every detail (content, functionality, presentation, interaction) has to be scrutinized according to its potential to create or destroy the desired experience...’ [18, p. 68]. In this view, experiences are deliberately designed and inscribed into artefacts as an act of design. The designer seeks to gain control over the participants experience and appropriation [29]. In practice, we used the more ambiguous design approach to add mystery and speculation at the beginning of the experience and the more prescribed design approach to ensure flow and purpose as the experience unfolded additionally we designed each sub experience focusing on the materials that shape an experience [17]. As designers we assumed a role parallel to authors in the context of texts and deploying narratives (e.g., [8]). We work here with two (of the many) different distinguishing schools of thought: authors, who aim for closed experiences, control over meaning, and guide their readers to a single interpretation versus authors, who aim for open and/or ambiguous experiences, multiple interpretations, and emphasize the active and constructive efforts of the readers themselves. Interestingly, we found evidence for both approaches in our phenomenological study. Some *sub-experiences* were experienced as closed, others as quite open. We noted the value of each type of experience is not unequivocal. While open experiences can inspire, they can also confuse, rendering the overall experience potentially meaningless. Closed experiences, while instructive and useful to advance understanding, can at times be uninteresting or too obvious. Gaver [14] also discusses how systems that had prescribed qualities are fundamental to how they are experienced (the

specificity for a location, the limitation of interaction opportunities, balancing ‘drifting’ and ‘controlling’ qualities, etc.) along with a general appreciation that human beings are agents. As such all experiences might be open to degrees of interpretation [8 and 14]. Once the work is out in the world and in the hands of the participants, participants are obviously at liberty to find their own meaning(s) [8].

DESIGN REFLECTIONS

In addition to the empirical data presented we would like to provide an insight into our involved design choices. We used a number of HCI and storytelling approaches to theoretically guide our design efforts. Our base theory for designing the transmedia experience was the idea of a fictional universe and before we focused on the interaction design we assigned the Nosferatu specific information to each element, see table 3 column two. Then we browsed for interaction design choices for each element and found that several interaction design choices would have been possible to integrate the interactive role of the participant within the physical fictional setting we aimed for. We could have picked e.g. a search and destroy game design pattern [2] giving van Helsing a more prominent role within the fictional setting adding an adventure type shooting game to the existing fictional universe. However we wanted to create something less obvious that would suit the horror genre. Many horror movies use surprise and suspense to create tension and that was the underlying experience we wanted to induce. To us it was important to invite for speculation [24] and make the participant curious so s/he could physically enter into a potentially dangerous situation, as is often the case in horror movies. Finally we used the theory of materials that shape an experience to design each sub-experience to fit into the designed transmedia fictional universe setting. Approaching content, presentation, interaction and functionality separately allowed us to, for example, design a closed type of sub-experience, such as having to find a cross within a certain time-frame, within what would otherwise have been a larger more explorative and open type of experience.

In our case study, open or ambiguous meanings appeared most suitable when the aim of the experience was to build and deepen the fictional universe. Musings, reflections and contemplation, require time and thus, slow-paced, less structured interaction. In *The Remediation of Nosferatu* this was the most suitable at the beginning, in the exposition phase, when participants probe the potential meaning and purpose of the experience. Closed experiences in contrast seemed most appropriate to provide logic, explain interactions and focus on a specific task. In our case, the closed experience at the end on the graveyard helped us to increase suspense, to instil a certain urgency requiring a speedier style of interaction, and added closure to the experience.

CONCLUSION

We presented *The Remediation of Nosferatu* a transmedia story and an empirical exploration of experiences emerging through play. Interestingly, we found people contrasted the more open to the more closed experiences to describe the quality of their individual encounters. This revealed a resemblance to the theory of open and closed work by Umberto Eco [8], using open and closed *sub-experiences* as a qualitative dimension when designing overall transmedia experiences and improving the design of experiential systems. For *The Remediation Nosferatu*, the system at hand, open *sub-experiences* were suitable for adding mystery or designing for a distant feeling of immersion, especially at the beginning (exposition) of the experience. Closed *sub-experiences*, in contrast, suggest a more guided approach perhaps seeking more control over the participants experience by suggesting particular paths to follow. In our case study closed *sub-experiences* seemed more suitable to advance the story and especially to design climax.

In summary, we present two contributions in this paper. First our interdisciplinary design approach contributes to future holistic transmedia design by illustrating how Speculative Play may enable non-linear storytelling elements in a transmedia fictional universe. Second, we find designing for more open and closed qualities of transmedia design beneficial and suggest this approach could prove useful more generally for designing future rich, enjoyable and meaningful transmedia experiences.

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REFERENCES

1. Benford, S., Giannachi, G., Koleva, B. and Rodden, T. From interaction to trajectories: designing coherent journeys through user experiences. *In Proc. CHI'09*, ACM Press, 709-718.
2. Björk, S. and Holopainen, J. *Patterns in Game Design*. Charles River Media, Hingham, 2005.
3. Braun, V. and Clarke V Using thematic analysis in psychology. *Qualitative research in psychology* 3.2 (2006): 77-101.
4. Chandler, D. An introduction to genre theory. *The Media and Communications Studies Site*, 1997.
5. Csikszentmihalyi, M, Castulus K. and Baur T. Flow: The psychology of optimal experience. *Australian Occupational Therapy Journal* 51.1, 2004: 3-12.
6. Corbin, J., & Strauss, A. *Basics of qualitative research: techniques and procedures for developing grounded theory* (3rd ed.). Sage, Los Angeles, CA, 2008.

7. Dow, Steven P. Understanding user engagement in immersive and interactive stories. *ProQuest*, 2008.
8. Eco, U. The role of the reader: Explorations in the semiotics of texts. Indiana University Press, 1984.
9. Forlizzi, J. and Battarbee, K. Understanding experience in interactive systems. In *Proc. of the 2004 conference on Designing interactive systems processes, practices, methods, and techniques* ACM Press, 261-268.
10. Fosh, Benford et al. 'See Me, Feel Me, Touch Me, Hear Me': Trajectories and Interpretation in a Sculpture Garden. *Proc. CHI'13* ACM Press..
11. Freytag, G. Die Technik des Dramas [1863]. Gustav Freytag. Dramatische Werke. Technik des Dramas. H. Fikentscher, oJ, 2003.
12. Gaver, W. W., Beaver, J., & Benford, S. Ambiguity as a resource for design. In *Proceedings of the SIGCHI'03 conference on Human factors in computing systems*. ACM Press, 233-240
13. Gaver, W., Boucher, A., Law, A., et al. Threshold devices. *Proc. CHI '08*. 1429-1438.
14. Gaver, W. et al. The prayer companion: openness and specificity, materiality and spirituality. In: *Proceedings of the SIGCHI conference on Human factors in computing systems*. ACM Publication, 2010. S. 2055-2064.
15. Hansen, Derek, et al. Designing reusable alternate reality games. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 2013*. ACM Press
16. Hassenzahl, M. and Tractinsky, N. User experience-a research agenda. *Behaviour & Information Technology*, 2006, 25. Jg., Nr. 2, S. 91-97.
17. Hassenzahl, M. Experience design: Technology for all the right reasons. *Synthesis Lectures on Human-Centered Informatics*, 2010, 3. Jg., Nr. 1, S. 1-95.
18. Hassenzahl, M. et al. Designing moments of meaning and pleasure. Experience design and happiness. *International Journal of Design*, 2013, 7. Jg., Nr. 3, S. 21-31.
19. Jenkins, H. Convergence culture: Where old and new media collide. NYU press, 2006.
20. Jenkins, H. Transmedia 202: Further Reflections, on Confessions of an Aca-Fan: *The Official Weblog of Henry Jenkins*, 2011 Retrieved 18.01.2014 from: http://henryjenkins.org/2011/08/defining_transmedia_further_re.html.
21. Kinder, M. Playing with power in movies, television, and v participants ideo games: from Muppet Babies to Teenage Mutant Ninja Turtles. Univ of California Press, 1993.
22. Montola, M., Stenros, J. and Waern, A. Pervasive games: theory and design. CRC Press, 2009.
23. More, T. Utopia (1516). Scholar Press Ltd., 1966.
24. Morrison, A., Viller, S. and Mitchell, P. Building sensitising terms to understand free-play in open-ended interactive art environments. *Proceedings of the SIGCHI'11, Conference on Human Factors in Computing Systems*. ACM Press, 2335-2344.
25. Oppermann, L et al. Lessons from touring a location-based experience. *Proc. Pervasive '11* ACM Press
26. Smith, J. A., Flowers, P., and Larkin, M. Interpretative phenomenological analysis: Theory, method and research. SAGE Publications Ltd, 2009
27. Tolkien J.R.R foreword to 'the Fellowship of the Ring' George Allen & Unwin, 1959.
28. Tolkien J.R.R. 'The Lord of the Rings' George Allen & Unwin, 1954.
29. Vyas, D., and Van Der Veer, G. C. Experience as meaning: some underlying concepts and implications for design. *Proceedings of the 13th European conference on Cognitive ergonomics: trust and control in complex socio-technical systems*. ACM Press, 2006.
30. Vogler, C. The Writer's journey. Michael Wiese Productions, 1998
31. Yin, R. Case study research: design and methods (4th ed.). Sage, Los Angeles, CA, 2009.
32. Wright, P. and McCarthy, J. Experience-centered design: designers, users, and communities in dialogue. *Synthesis Lectures on Human-Centered Informatics*, 3.1 2010, 1-123
33. Zeitfenster, <http://www.zeitfenster-app.de/> retrieved 18.01