

Postdigital Reading Strategies in Emersive VR Fiction: Empirical Insights

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Abstract

In this article we induce a theory of ambimedial reading as a distinctive postdigital reading strategy from an empirical study with readers of Virtual Reality (VR) fiction. VR is known for its immersive, experiential qualities yet less for its affordances for literary fiction and verbal art. In experimental VR fiction, 360-degree, fully embodied spatial experiences can engender diverse ontological spheres, leaving readers straddling multiple diegetic and extradiegetic layers of storytelling. These ontological ruptures, evoked by what we call ambispatial design, can lend VR fiction an e-mersive quality constructing readers as self-conscious voyeurs rather than granting them an unreflected, immersive experience. To illustrate these emersive effects, we consider participants' discursive responses to reading Randall Okita's VR memoir, *The Book of Distance*. We show how readers attempt to make sense of an unfamiliar postdigital storytelling experience by means of ambimedial responses, in which they attempt to reconcile an unfamiliar medial experience with more familiar ones. Our data shows that emersed readers conceptualize their doubly embodied and hybridized position as a constituent of both the actual world and digital VR world, a phenomenon we refer to as *dual embodied metalepsis*.

Keywords: Medial reading, ambimedial and intermedial reader, VR fiction, *The Book of Distance*, cognitive-empirical reader research, qualitative methods, postdigital sensibilities

1. Introduction

At the dawn of the postdigital age, co-founder of the MIT Media Lab, Nicholas Negroponte, declared that "being digital will be noticed only by its absence, not its presence" (n.p.). A quarter of a century later, the hegemony of the digital, and of generative AI in particular, has become so

pervasive that key elements of literary and textual communication - authorship, reading and writing - have come under existential scrutiny. Simultaneously, the printed book as the long-assumed unmarked medium of literary reading has been replaced by a host of information and communication technologies, which situate reading in the complex, transmedial and multimodal “networks and relationships of literary, cultural and textual production and consumption” (Abblitt, 100). These complexities, which are intrinsically driven by neoliberal forces, demand distinctive postdigital sensibilities (Fleischer), requiring scholars to pay attention to the material qualities of the digital technologies at play. Moreover, researching literary communication in a postdigital paradigm requires us to take into consideration how readers themselves are entangled in multiple intersecting referential frameworks, which are intrinsically intermedial and ontologically hybridized, taking a reflective and critical stance towards dominant and popular discourses of techno-capitalism (Cramer).

According to David Berry and Michael Deiter the term ‘postdigital’ refers to a point in digitized societies in which “the historical distinction between the digital and non-digital becomes increasingly blurred” (2) leading to a state in which the novelty of digital media has worn off and is simply commonplace (cf. Cramer, Taffel). They suggest this postdigital state is a consequence of the fact that “we are now seeing a dramatic change in the way in which sociality is performed and mediated through new distributed digital media technologies” (1) and, in particular, “an epistemological and pragmatic shift in everyday life towards the use of computational systems to support and mediate life itself” (1). From a postdigital perspective, therefore, while materially distinct, our online experiences and related existence(s) are just as real as our offline experience and existence(s) with the distinction between them becoming increasingly less pronounced.

Examining the way in which the postdigital manifests in verbal art, Spencer Jordan defines postdigital storytelling as a form of storytelling, either fictional or nonfictional, that reflects the “hybridisation of both the digital and non-digital domains” (63), engages in an “open and fluid negotiation between the digital and the non-digital” (63), operates “*within* or *across* the digital/non-digital nexus” (63), and in which the “non-digital domain is subordinate to the digital domain” (63). He thus takes the hybridity evident in postdigital theory as a heuristic through which to read experimental writing that is either exclusively or partially digital including hypertext fiction, transmedial fiction, mobile storytelling, print/digital hybrids, while also gesturing to the

postdigital potential of VR in which he sees a “tension between immersion, interactivity and narrativity” (14).

In this article, we examine what we call ambimedial reading in Virtual Reality (VR) fiction as one manifestation of the postdigital. We address the question of what it means to read medially in a postdigital paradigm, how readers of VR fiction in particular process and engage with medial references, and how material, spatial and ontological contingencies are experienced in an experimental work that places the reader both within and outside of the text, thus evoking a reflexive stance vis-a-vis their own role as self-conscious voyeur. To come to terms with this apparent paradox, we leverage the concept of “emersion” as an alternative to “immersion” to emphasise the ways in which readers of VR fiction might construct a persona of themselves that remains conscious of their own stance as outsider to the fictional world. Audiences of emersive VR are thus “not located in a singular and complete virtual space but in a differential space between physical and virtual” (Chang iv) that we refer to as the actual space of the diegesis. Our empirical data gives evidence of how emersed readers see themselves not only dually embodied, between fictional and diegetic space, but also always stay aware of their own physical spaces.

Virtual Reality (VR) fiction is a subform of digital-born, or digital, fiction. Digital fiction (DF) is written specifically for the digital medium and therefore inextricably linked to the affordances of the platforms and technologies they are made for and in. Hence, every analysis of digital fiction and its reading needs to take account of its individual medium-specific affordances (Hayles), which depend on the platforms, codes and protocols chosen by their writers. DF can be purely text-based, but often it blends various semiotic modes and media and various types of text, sound and image, and it typically does so with an experimental and/or disruptive agenda behind it that seeks to critique, transform, modify or replace the commercial technologies of everyday communication. It includes works of hypertext fiction, web-based multimedia fiction (typically produced using HTML5, CSS, JavaScript and historical technologies such as Flash and QuickTime), Interactive Fiction (IF), app-fictions for tablets and smartphones, videogames that have a strong narrative element, social media fiction, AI-based fiction, and narratives created in Augmented and Virtual Reality (AR/VR). Importantly, reader interaction is key to the emergence of storyworld and plot, as the fictional experience emerges with the reader’s execution of a work’s underlying algorithms and data structures. Digital fictions are examples of the broader category of electronic literature, an umbrella term that comprises a multitude of experimental, verbal art forms

across platforms, software applications and aesthetic styles (Rettberg, Tabbi). Unlike more poetically and/or conceptually oriented forms of electronic literature, such as generative, kinetic and hypertext poetry for example, digital fiction offers primarily narrative experiences with a strong emphasis on plot, character, setting and narratorial functions. Digital fiction seeks to explore new, medium-specific and transmedial forms of narrative expression and engagement and therefore simultaneously continues and disrupts the history of prose writing (see Ensslin and Bell).

As a subform of XR (Extended Reality) storytelling, VR storytelling - fictional and non-fictional - allows the construction and experience of alternative and often multiple universes in a highly embodied, spatialised and sensorily immersive way. These experiential qualities are afforded by a combination of medium-specific parameters. Not only do VR environments allow the kind of highly multimodal, spatialised interactive experiences we know from 3D immersive games, they also create the illusion of full, embodied presence. Users wear head-mounted devices such as Oculus Quest/Rift, HTC Vive and Valve Index, which contain a stereoscopic display with separate screens for each eye, 360 degree head-motion-tracking sensors and stereo sound. The head-tracking functionality adapts the user's focus to the in-world surroundings with minimal latency, thus simulating a real-life field of vision. VR equipment typically comes with two controllers, one for each hand, which are represented as the first-person avatar's hands in-world. Users are therefore encouraged to perceive themselves as present and re-embodied in the projected digital space, although, with the exception of the hands, their bodies tend not to be visible.

2. Waves of DF scholarship

In the first wave of theory that accompanied first-generation hypertext fiction, poststructuralist theories with concepts like the death of the author, readerly text, decentered text, rhizomatic writing, fluidity and intertextuality were deployed to conceptualize hypertextual forms, structures, and associated readerly effects. In the first wave of scholarship, readers were also often situated in a binary relationship with their print counterparts (Douglas) with digital writing conceptualized as something that would liberate the reader from what Coover proclaimed was the "tyranny of the line" that had previously constrained readers of print.

Second wave scholarship then followed with systematic toolkits for analyzing individual texts (Bell et al. 2014). It marked a shift towards applying replicable methodologies to individual digital fiction works, with a particular focus on the linguistic, narratological, multimodal, and/or

interactive devices at work in a range of digital fictions (narrative voice and perspective, fictional dialogue, hyperlinks, metalepsis, literary ludicity and user-interface analysis). Because this kind of scholarship often utilizes theoretical models and analytical frameworks from cognitive narratology and/or stylistics, there is an inevitable disciplinary focus on the reader's relationship to the texts and the fictional worlds they construct thus providing new analyses of individual texts and new theoretical understanding about how readers process textual features.

In what Bell et al. (2018) define as the third-wave of digital fiction research, scholars seek to empirically investigate digital fiction reading by collecting and analyzing reader responses to individual texts using both qualitative and quantitative data collection methods. Informed by embodied cognition, cognitive narratology (Bernaerts et al.; Herman) and cognitive stylistics (e.g. Stockwell; Gavins and Steen), third wave research has for looked at a variety of qualitative, discourse-based phenomena, such as how readers process hyperlinks (van der Bom et al.), how they experience, switch between and/or retain specific types of immersion (Bell et al. 2018; Ensslin et al. 2019), how they build parasocial relationships with fictional characters in experimental app fiction (Bell), and how they project themselves into the diegetic world through forms of textual 'you' (Bell et al. 2019). A recent example of quantitative research has been Loi et al.'s study on reader preferences between fictional media from traditional print to digital fiction, and how they are variably driven by eudaimonic and hedonic motivations.

A fourth wave that has been emerging over the past five years is applied digital fiction scholarship (Ensslin et al. 2019). It tends to align itself with principles of Critical Making as a Digital Humanities paradigm, and it seeks to effect social change in the reader groups it focuses on. Prominent examples include Writing New Body Worlds (Wilks et al.), You&CO2 (Rudd et al.), and the Byderhand Project (Greyling et al.). The project presented in this article is firmly anchored in third wave research but partly draws on achievements and also some analyses from our second-wave work. Overall, it is important to note that the above-mentioned waves cross-pollinate, blend with and draw on one another and therefore cannot be seen in separation or in strict chronological order.

3. Researching Medial Reading in Digital and VR Fiction

Reading digital fiction is a diverse phenomenon that includes PC- and console-based reading, tablets and smartphones, as well as augmented, mixed and Virtual Reality experiences.

Each technology comes with its own spatial, situated and material parameters that affect our embodied reading as an element of embodied cognition and practice significantly. Therefore, as we argue, “mediality should be a variable in any study that seeks to determine the effect that a text has on a reader” (Bell and Ensslin 11), and it can be expected that this is true not only for digital-born fiction but for other literary media (Ensslin et al. 2023) as well.

Reading in VR can happen in a variety of ways: firstly, it can involve the deciphering of letters on a mediated page or surface, ranging from notes on postcards and boards, captions in photo albums to entire letters, newspaper articles and official documents. Medium-specific reading of such “traditional” written documents in VR also involves haptic interaction. Readers may be able to touch, pick up, turn around, throw, and shift written documents in the 360-degree space, which approximates the qualities of reading in a physical space yet transforms and defamiliarizes the process at the same time. In a broader, multimodally inclusive sense, VR reading is multi-, inter- and transmedial. Written language is only one of many audiovisual, animated, procedurally interactive, and spatiotemporally organized media embedded and thus intertextually referenced in the work. All these medial sources need to be decoded both individually, in their own medium-specific ways, and as multimodally embedded and embodied semiotic clusters. Finally, reading in VR can happen transmedially, in complementary ways across a variety of media objects and semiotic-sensory modes. Readers may for example be able to read governmental letters through haptic interaction, as described above, whilst being told by a voiced-over narrator how these documents relate to a character’s life and being shown a scene of how exactly this relationship pans out in a specific scene.

In our empirical research (see Bell and Ensslin), we implemented empirical, cognitive reader-response methodology drawing on Bortolussi and Dixon’s psychonarratological distinction between “textual features”, which are “objective and identifiable characteristics of the text” (37) and “reader constructions”, which are “subjective and variable mental processes” as responses to the text (37). In our approach, reader constructions are identified via the analysis of individually- and/or jointly negotiated responses to a text to show how readers have processed features from a digital fiction text in its medium- and site-specific contexts. As far as empirical methods are concerned, we follow Swann and Allington in distinguishing between two paradigms: “experimental” versus “naturalistic” approaches. Methods associated with experimental approaches in literary studies typically include interviews, questionnaires, text comprehension

tasks, Likert scales and eye-tracking. Naturalistic studies, on the other hand, seek maximum ecological validity by presenting texts in their original form, using readers' discussions about texts in their usual environment, and minimising researcher intervention. In the latter, verbal data is thus gathered from (usually in-person) reading groups, online reviews and discussions. Both paradigms can be combined, and both have advantages and disadvantages for researchers, depending on the context.

To account for the vital role of the literary text as key reference point of all reader responses, we adopted the reader response approach advocated by Whiteley and Canning which “gives equal attention to the text and data evidencing the text’s reception ... in order to contribute to a stylistic textual analysis and/or wider discussion of stylistic theory and method ... [and] enable[] the testing and development of stylistic methods and theories” (72-3). Whiteley and Canning’s approach is anchored within print, text-based stylistics and does not pay attention to medial aspects of literary texts and their reception and interaction.” Our work thus expands their approach by taking into account the medial aspects of literary texts and their effects on reception and interaction.

Crucial to this analysis is also the application of a medium-conscious typology of response which seeks to capture the different foci of the participant data. In Peplow et al.’s discourse model of reading, reader responses to print fiction are analyzed with regards to the “ways in which readers in face-to-face reading groups invoke aspects of their own personal history and identity when discussing fictional texts” (62). In so doing, Peplow et al. draw on James Phelan’s rhetorical narratological approach in which he argues that readers develop interests in and respond to three components of a narrative: *mimetic* responses “involve an audience’s interest in the characters as possible people and in the narrative world as like our own” (20) which he has more recently clarified to include a “narrative’s imitations of—or references to—the actual world, including such matters as events following the cause–effect logic of the extratextual world, characters functioning as possible people or being representations of actual people, time and space following the known laws of physics, and so on” (Clark and Phelan 202). This component thus focuses on the extent to which a text corresponds to the actual world and/or is believable. It includes “evolving judgements and emotions, our desires, hopes, expectations, satisfactions, and disappointments” (Phelan and Rabinowitz 7) about the characters and the storyworld. *Thematic* responses “involve an interest in the ideational function of the characters and in the cultural, ideological, philosophical, or ethical issues being addressed in the narrative” (Phelan 7). They thus relate to the reader’s interpretation

of what the text is about thematically and/or what it means. Lastly, *synthetic* responses “involve an audience’s interest in and attention to the characters and to the larger narrative as artificial constructs” (20) and thus relate to the way that a narrative is constructed including the narrative devices that are utilized in a text. Importantly, as Peplow et al. note, “these three forms of reading are not mutually exclusive, and readers can move between them” (64). Thus, different responses can be provoked to a greater or lesser degree, depending on the type of text being read, and all three responses can be generated by the same text.

Applying Phelan’s framework to their corpus of reader response data gathered from naturalistic reading group discussions, Peplow et al. find empirical evidence of all three kinds of audience response, thus operationalizing Phelan’s theoretical concepts in the context of reader response research. While the focus of their analysis means that mimetic reading dominates in Peplow et al.’s participant data, they note that “the interactive nature of reading group discourse” (88) affects the “talk produced by groups” (88) who each have “preferred ways of reading texts” (88) so that “the form of reading ... that predominates may well depend on the reading group being analysed and the text being discussed” (88). Implicitly, therefore, the type of text that is used in a reading group discussion has a significant bearing on what members of that reading group will likely focus on.

In further articulating Phelan’s framework, Phelan and Rabinowitz explicitly note that genre in particular likely affects the responses that are generated by a narrative suggesting that “so-called realist fiction ... [is] dominated by mimetic interests; ... allegories and political polemics ... stress the thematic; ... the *nouveau roman* and much postmodern metafiction put priority on the synthetic” (7). They thus hypothesize that texts belonging to a particular genre will stimulate a particular response in readers. However, neither Phelan nor Peplow et al. theorize or analyze the effect that medium might have on reader responses.

In our theory of medial reading, we add medial responses as a new category to Phelan’s and Peplow’s typology. Medial reading accounts for an audience’s interest in, awareness of and/or attention to the medium in which a text is produced and received. This includes the medium-specific affordances inherent in the technologies used and their site-specific, embodied implications for reader-player interaction. Medial responses are related to but distinct from synthetic readings of texts (Phelan), which tend to focus on the textual devices employed in a work. Medial readings instead relate to devices that are afforded by and distinctive of the medium in

which the text is written. As with Phelan's and Peplow et al.'s frameworks, however, medial responses are not necessarily experienced in isolation from other kinds of response. Rather, the different response types inform and shape one another.

In what follows, we analyze responses to VR fiction, paying attention to the ways in which readers attempt to make sense of this unfamiliar postdigital storytelling experience. We show how readers use ambimedial responses (Bell and Ensslin) in which they attempt to reconcile an unfamiliar medial experience with more familiar media experiences, as well as the way in which they conceptualize their doubly embodied and hybridized position as a constituent of both the actual world and digital VR world, explaining this in terms of *dual embodied metalepsis* (Bell and Ensslin).

4. *The Book of Distance*

We took great care to identify a VR fiction that matched our criteria for Digital Fiction: featuring a strong experimental-narrative component with complex characters and affording literary activities such as reading remediated, written documents (books, letters, newspapers) and listening to voice-over narration. Eventually we settled on *The Book of Distance*, an award-winning, Canadian virtual reality documentary, directed by Randall Okita and produced by the National Film Board of Canada. The work is a 360-degree interactive, animated, embodied storytelling experience that uses conventions of stagecraft, cartoon, traditional Japanese art and many other media. Using the two controllers, readers use their diegetic hands to read, grab, move, tap and turn objects and documents, and they can walk around in the storyworld within the physical limits set by the Quest Guardian. The world itself contains a mixture of 2D and 3D elements, only the latter of which are interactive. The plot mostly runs on rails, with short interactive interludes that pause the ongoing action. Those interactive scenes contain visual cues: pink dots floating above interactive objects that readers need to interact with to move the plot forward.

Diegetically, readers are placed in the biographical context of Okita's grandfather Yonezo Okita's, who left his native Hiroshima just before World War 2 to start a family and build a small strawberry farm in Vancouver, BC. During the War, he was separated from his family and kept in an internment camp with many other Japanese Canadians under the suspicion of espionage. The intradiegetic story is set between different historical chronotopes (Bakhtin; Punday) displayed on

banners in the background of key scenes or as dates in written documents. They begin with “Hiroshima, 1933”, when Yonezo left his family home, and proceed to 1942, when the Canadian government began to forcibly relocate and intern over 22,000 Japanese Canadian citizens from British Columbia, i.e. over 90% of the total Japanese Canadian population, in the name of national security, and the following years, which saw the gradual governmental appropriation and re-selling of all property owned by Japanese-Canadians. A key chronotopic moment is the detonation of the nuclear bomb on Hiroshima on “August 6th, 1945”, which killed Yonezo’s sister - a scene that is staged in abstract, slow-motion form, showing the scenery of the family living room dissolve into fragments and all personal documents being blown away. By contrast, the time of the telling, or diegetic layer, of the narrative is set in the chronotope of “Calgary, 2019”. It appears at the very beginning of the plot, at which point an expository conversation between Randall and his father takes place. This chronotope marks the time during which the work was researched and developed.

The main characters of the work include Randall, who appears in the work as narrator and stage director, his father, his grandmother, his grandfather Yonezo (young and grown up), and Yonezo’s sister Humiko. In this fictionalized form, Randall mediates between different historical periods, different spaces, and different generations. Importantly, he also establishes a metaleptic connection to the reader-in-the-diegetic-space, or narratee. An unusual aesthetic are the faceless faces of all characters, which have an elliptical function and remind us that Randall had to reconstruct most of his grandfather’s memoirs through what he calls “acts of imagination”. This aesthetic choice also allows readers to project the lives of other individuals into the narrative, including their own memories and associations.

After an introductory, tutorial-like scene, in which the reader learns the controls while leafing through a photo album and playing a short horseshoe-throwing game, the narrative proper opens with a conversation between Randall and his father, who acts as a narrator-interlocutor to evoke the memories of Yonezo which the work revolves around. The father also occurs throughout the flashbacks as a child with his sister, thus filling a similar double-role as Randall, except the father’s metaleptic transgressions happen between the diegetic and the intradiegetic levels, whilst Randall bridges the gap between diegesis (the world of the telling) and extradiegesis (the actual world of the reader and the flesh-and-blood author) in his direct addresses to the reader. Crucially, these frequent addresses occur within the virtual-theatrical space Randall occupies, as a stage manager and onlooker to the fictionalized account of his family history. They therefore work to

position the reader from that vantage point within the storyworld. By contrast, many of the work's interactive scenes involve the reader taking a role within the diegetic level: they photograph family scenes; help Yonezo to move rocks; and pack a suitcase. Like Randall's address therefore, these scenes place the reader within the digital storyworld but as a participant as opposed to an onlooker. Overall, the reader is placed within the storyworld not only visually but also interactively and must move to and among different narrative levels within it. Theoretically, the distinction between the storyworld and the reader's actual world should be minimized by these textual features with them feeling fully embodied in the VR space. Our reader response research sought to understand whether this hypothesis accurately reflects their experience and in what follows, we link our findings to the postdigital in terms of the reader's experience of a digital/non-digital hybridized experience.

5. Our Empirical Research

Our empirical study took place from March 2021 to June 2022 at the University of Bergen (Norway) and was conducted with 15 participants who were all students and staff from the Digital Culture, Media Arts and Education, and Game Studies programmes. Age and gender demographics were not recorded, but the age span was roughly between 22 and 60 years old. All participants were fluent speakers of English and were purposively sampled in that they had to have at least some level of familiarity with digital fiction and VR. This was important to reduce the novelty effects digital fiction and specifically VR experiences tend to have on first-time users. The participants were first introduced to the project as a whole, followed by a brief introduction of the work. Participants completed a media exposure questionnaire and then embarked on a full playthrough of *The Book of Distance*, uninterrupted by the researchers. This naturalistic setting was feasible because the work follows a linear path which readers only briefly pause in short, interactive scenes. Following each playthrough, the researchers then conducted a structured interview containing questions about participants' feelings towards the story as a whole and towards specific characters, and about who they felt they were in the story¹. They were also geared towards eliciting responses to the material VR experience. To minimize priming, we avoided using any related technical terms throughout. The interviews were video-recorded, AI-transcribed, and

¹For a full list of interview questions, see Bell and Ensslin.

anonymized, followed by thematic coding in NVivo.² The codes relevant to this study were spatial and intermedial references as well as references to the role of VR in the experience.

The overall results of the qualitative data analysis can be illustrated in the relation to a so-called Chalkline Scene (Ensslin and Ceuterick; Bell and Ensslin). Immediately preceding Yonezo's crossing of the Canadian border, Randall draws a chalk line right in front of the reader in-world, almost pushing them aside to mark a boundary between different ontological realities: not-Canada and Canada, before and after Yonezo's emigration, but also between different diegetic layers or ontological realms constructed by the narrative. In this process, readers become acutely aware of their role as onlookers, despite the fact that the reader's first-person avatar physically follows Yonezo across the border and even has to show their passport to the customs officer before stepping through the gate.

This ambispatial design breaks the projected storyworld-on-stage into different ontological spaces, which correlate with the work's intradiegetic and diegetic layers. An aesthetic effect of this formal arrangement is that, throughout the plot, readers never lose their ontological (and titular) distance to Yonezo's world and his suffering. This effect runs counter to what one might expect from a work that allows direct interaction with elements of the intradiegetic world, such as rocks and seeds in the family's strawberry field and the afore-mentioned customs office. It transforms the expectation of immersion into an e-mersive experience. Instead of feeling transported into the ontological space of the storyworld, readers find themselves constructed as voyeuristic patrons in a virtual theater space, an orientation that prevents them from adopting or even approximating the identity of Yonezo or any of the other characters.

In all, we found that readers of *The Book of Distance* responded to the text in three ways: (1) through ambimedial responses (Bell and Ensslin) and intermedial processing, which relates to sense-making in terms of or through comparison with other media; (2) in relation to ambient contingencies, i.e. the environmental, situational and personal embeddedness of each reader and each reading; and (3) in terms of ambi-spatial orientation, which is a direct effect of ambispatial design as outlined above. These responses reflect hitherto unexplored aspects of presence in VR that directly affects the reader's relationship with the characters and the story as a whole (see Ensslin and Ceuterick) but also provides insight into what we might call postdigital reading

² The full dataset is available on request.

practices that reflect readers' relative (un)familiarity with a new form of digital technology as well as their overall doubly-situated and thus hybridized position in VR in general.

5.1 Ambimedial responses and intermedial processing

In response to our questions about the nature of the VR reading experience in general, we observed a greater-than-expected variety of references to other media. Our dataset contains over 140 instances in which participants referred to different kinds of media and fictional genres as they attempted to make sense of the experience. Perhaps not surprisingly, those who had more than cursory experience with VR named other VR works in a comparative manner including *Traveling While Black (TWB)*, *Beat Saber*, *Clouds Over Sidra*, and *Queerskins: A Love Story*. Strikingly, however, they most often described their experience in relation to print media (25%), followed by film and documentary (19%), performance art and theater (18%), games and interactive narrative (13%), fine arts and photography (12%), museum and exhibition (5%), radio and music (4%), and finally oral storytelling and telephone (4%). The most frequently mentioned print references were the book at the beginning of the work, books read by Japanese authors that participants felt reminded of, but also negative mentions by participants who would have preferred the same biographical story in book form. Other frequently mentioned artifacts in the print category were governmental documents and letters, as well as cartoons and visual novels, evoked by the visual style of the work. A notable outlier was Ole³, who explained that the “two dimensionality of [the work] is very much [...] like a pop-up book that I control”. Leaving aside references to other VR works, participant responses can be grouped into broad media categories as shown in Figure 1.

³ Participant names have been pseudonymized.

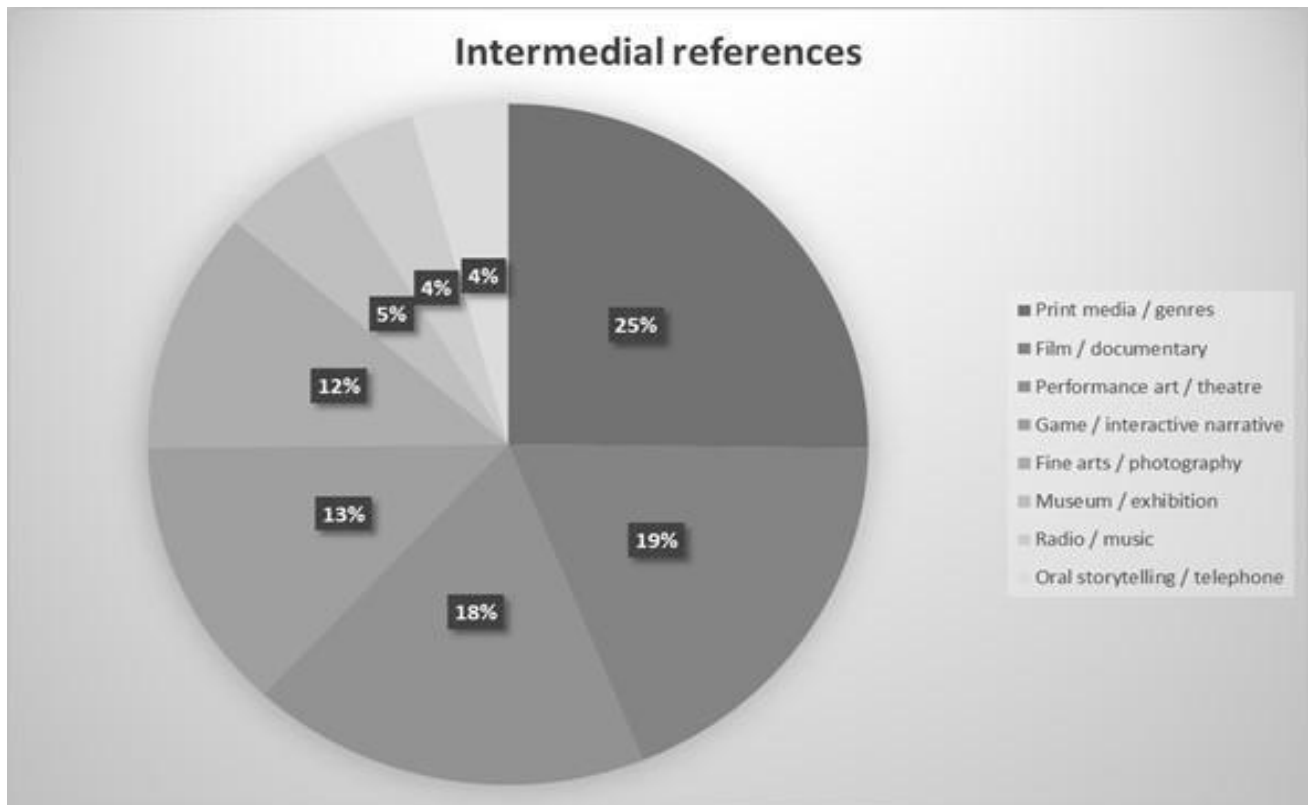


Figure 1: Intermedial references in participant responses

Many participants who referred to filmic media likened the linear, on-the-rails experience of *The Book of Distance* to watching a movie without having agency to shape the plot, or without having an opportunity to co-experience. An important difference to cinematic viewing was the above-mentioned and titular sense of “distance” created by the work through both schematic rather than realistic character design, and through metonymic representation of the reader (arms-only) in the projected space.

References to performance arts contained words like “theater,” “stage,” “(costume) drama,” “roleplay,” “pantomime” and “opera”. Theater-lover Matthew explained that the work “put me in the seat, standing up but it was a red velvet theatre seat. So that’s where I was” (215-216). Closest to the authorial label of “magic theater” came Paul, who explained that “it was like a theater production. I mean, it felt like that to me, especially in the beginning [...] he was like this magician, you know, like, here’s a, here’s now this thing” (256-259). Paul also referred to the paint brush as a “magic wand”.

Other strong associations were to museums and other exhibition spaces (like the Jewish Museum in Berlin) and even radio. One participant (Ole) he referred to as “illustrated radio” because of the “very linear” narrative with “presentational moments within this, you know, the audio track is the anchor. And then I have these graphics that illustrate what's happening. So yeah, I would call it illustrated radio” (Ole, 357-364).

Throughout the data, we thus see evidence of what we define as “ambimedial response” (Bell and Ensslin). The prefix “ambi-” in this neologism combines meanings of “ambivalent” and “ambient” in the sense of how readers’ diverse inter-, trans- and multi-medial references reflect an attempt to reconcile an unfamiliar medial experience with more familiar media experiences; but also how their responses demonstrate the embedded and embodied nature of their reading experience.

Ambimedial responses can be stimulated by any medial experience and the new category can therefore be incorporated into our overall medium-conscious typology of response. In this particular VR context, however, we can see references to other media as representing a form of postdigital reading in which readers try to make sense of this digital experience by making reference to non-digital media. The result is a dialogue between and hybridisation of digital and nondigital domains from the reader’s perspective in which, rather than the “non-digital domain [being] subordinate to the digital domain” (Jordan 63), the non-digital is instead privileged as a schema for understanding the digital.

5.2 Ambient Contingencies

Ambient contingencies relate to the environmental, situational and personal embeddedness of each reader and each reading in a text. Ambient contingencies that strongly shaped the VR reading experience as a whole for readers included the physical constraints of the VR equipment, and in particular the spatial boundaries that can be transgressed and amplify the physical set-up of the room around the viewer (furniture etc.). More specifically, some participants like Paul in the following excerpt reported that they were always aware that they were doubly embodied, and that the VR equipment actually increased their awareness of their surroundings rather than being pulled into the virtual world 100%:

There are certain conventions that I was already aware of in terms of the hands, and that you would grip something and then move it ... And those ... conventions ..., it’s like

everything is like sort of exaggerated. And I think to some degree that exaggeration ... pulls me out of it a little bit as an experience, because I'm aware of that exaggerated quality of my own movement. And also my like, very hesitant, ... way of moving around, and not wanting to ... trip on something. (Paul, 204–213)

These medial responses show how the hardware interrupted the “open and fluid negotiation between the digital and the non-digital” (Jordan 63) that Jordan sees as exemplifying postdigital storytelling and, also contradicts the claim that the VR space will fully remove the distractions of the physical world (cf. Pianzola and Bálint).

The interactive elements of the VR fiction overall received rather mixed responses: most readers struggled with the controls – especially the camera click and the horseshoe minigame at the beginning. Some found the interaction unnecessary and disruptive. Others enjoyed having them, with some of them emphasizing they liked the camera and paint brush controls that reinforced their ontological onlooker status in the fictional world, but that they were confused by actions where they “helped the characters” intradiegetically, such as laying the table or sowing seeds in the field.

Finally, in line with existing empirical research on readers' ability to show affective responses to narratives (e.g. Koopman), participants' day-to-day relationships with diverse media technologies generally impacted their ability to engage with the narrative, and their medial responses expressed those relationships in the ways they evaluated the quality of the experience as a whole. For example, Julie, a professional photographer, loved being able to take photographs in-world; Julie and Thomas, who are fond of Japanese culture, literature and art, responded well to the artwork; however, participants with strong technical experience in making digital media artefacts (Matthew and Stephen) commented most critically on the work's perceived glitches.

5.3 Ambi-spatial Orientation and Emersive Reading

The data shows that the work's ambispatial design overwhelmingly made the participants develop a feeling of “absence-in-presence” (Ensslin and Ceuterick), exemplified in the following data excerpts⁴:

⁴ The quotations are followed by participant pseudonyms and line numbers from the dataset.

- 1) “I was the person who wasn’t there.” (Kate, 288)
- 2) “You’re supposed to be there but also supposed to be not there.” (Kate, 66)
- 3) “And it was weird, because you just feel like you kind of both there and not there.” (Judith, 47-48)
- 4) “[...] like I’m in the same space, but there’s a distance.” (Carl, 36-37)
- 5) “I couldn’t act, I couldn’t [...] I wasn’t there.” (Matthew, 112-113)
- 6) “I’m a part of the space because I’m there. And I’m looking and listening and everything and even interacting a little bit, but it’s not like I’m a part of this story.” (Vera, 66-69)
- 7) “I felt during maybe the first half, I felt like an invader into the story. It was just I felt a little displacement. Like I was just not supposed to be there kind of. But then when they were thrown thrown out of the their house that they had strawberry farm I felt very sad for them and, and more in the story I guess [...] I was part of it, and I wasn’t” (Claire, 12-17; 33)
- 8) “I was not present there as my personality [...] it felt like a blind kind of presence [...] I felt more present as a social actor here in this room as a person undergoing an experiment and people being around me than I felt present there as someone.” (Edward, 199-223)

In what we can define as ontological responses, quotes 1) to 8) all encode feelings of simultaneous presence and absence in the storyworld. The story’s spatial design thus seems to leave the reader oscillating between intradiegesis - the space where Randall’s family’s memories unfold - and diegesis - the level of narrative communication between narrator and narratee. Judith in 3) finds this “weird”; Matthew in 5) accounts for this experience as the inability to act or affect the unfolding events; Vera notes she could interact “a little bit” in 6). The reader’s dual position invokes a metafictional level of reflection in 2) (“supposed to be”), where Kate projects the ontological clash as authorial intent into her experience.

The spatio-ontological paradox of absence-in-presence suggests that presence is not necessarily felt as diegetic presence but as some kind of metafictional condition that places readers in an imagined space between intra- and extradiegesis: the interlocutive space of the narration proper. In cognitive-narratological terms we might call this a form of *dual embodied metalepsis* in the sense of a transgression of or oscillation between ontological realms: (1) the world of Yonezo (2) that of the narrator Randall (on stage) vis-a-vis the reader-as-fictionalized audience in a

specifically constructed, diegetic-theatrical space; and (3) the reader's own physical world within which the VR experience is set.

Semiotically speaking, dual embodied metalepsis is caused by the effects of what we call *medium-specific spatial double deixis*. Participants in the study constructed their situated identity in-world as both intradiegetic and diegetic (“both there and not there”, Judith), which reconfirms their perceived sense of dual embodiment. As 7) shows, this perception of space can also shift from a sense of “displacement” to one of proximity (“more in the story”), and back again, as Claire explains in the coda, “I was part of it, and I wasn’t.” That spatial double-deixis can reach in the opposite direction, from the diegetic into the reader's extratextual space, is shown by Edward in 8). He “felt [...] a blind kind of presence” that was overridden by his awareness of being “a social actor” in the physical world of the experiment. In cases where readers felt that their attention was wandering between extratextual, diegetic *and* intradiegetic space, then, we can even refer to *medium-specific spatial triple-deixis*.

Overall, such conceptualisations of space show ways in which readers are operating “*within* or *across* the digital/non-digital nexus” (Jordan 63) in *The Book of Distance*. They are aware of their doubly- or even triply-embodied identity but this does not seem to preclude engagement with the narrative. As Claire's emotional response in 7) shows, some readers were deeply moved by the story even though they struggled to reconcile their ontological and subjective position. These effects of diegetically multiversal spatial VR design are all part of what Chang refers to as an Emersive VR experience, which combines multisensory VR embodiment and reflexive VR storytelling into an effect that allows readers to “emerge” as critical thinkers from an otherwise immersive experience. *The Book of Distance* quite literally employs techniques of *distance* design to stage multiple diegetic worlds in a virtual form of interactive theater that leaves readers hovering between the “velvet” (Matthew, 216) of their implicated seats and the stage itself. This stage, however, creates an illusion of “being there” intradiegetically with the characters. Instead, it keeps readers firmly within the grips of the interfaced, diegetic narrator, thus augmenting their self-understanding as powerless onlookers.

6. Conclusion

As a fully embodied, 360-degree immersive environment that can simulate natural and human made environments in radically variable degrees of realism and abstraction, VR has only just entered the territory of narrative experimentation. It is not surprising therefore that readers may need to (re)orientate themselves medially, ontologically, and emotionally in order to make sense of this new, postdigital form of narrative media and that associated semiotic and narratological theories need to be adjusted to capture those marked in the sense of unconventional experiences.

As we have shown in this article, reading in VR goes way beyond reading remediated documents in a re-embodied way, or between semiotic modes and respatialized multimedia. In this postdigital context, we also read ambi-medially, taking into account the ambient contingencies that make up our readerly situatedness; we read intermedially, trying to make sense of the experimental unknown through cross-references to our own media experiences but also by creating new, hitherto unrealizable concepts like illustrated radio or controllable, walkable pop-up book.

Finally, specific aesthetic designs like the chalk line in *The Book of Distance* on a projected theatrical stage can evoke feelings of subjective and ontological distance rather than closeness. In particular, it can draw readers' attention to the postdigital illusion of full immersion in digital media and evoke a variety of diegetic layers and ontological spheres that re-embodiment readers in multiple metaleptic shifts and directions, thus evoking paradoxical effects like feelings of absence-in-presence. They thus add important notions of ambivalence and ambiguity in situating and orienting the reader. These effects can help us qualify and debunk essentialist theories of VR as being inherently immersive or empathic, which have been part of the popular hype around XR technologies. In a postdigital literary context, these essentializing rhetorics need to be exposed and qualified by linking them with the empirical complexities and embodied entanglements of actual reading experiences (Abblitt). Our work contributes to this critical counter-strategy in that we have shown that experimental works of VR fiction can play with spatial design and embodiment in ways that complement and relativize the immersive qualities of VR with its emersive, illusion-breaking and awareness-raising affordances (Chang). Moreover, while VR narratives can be spatiotemporally, emotionally, ludically, and narratively immersive (Ryan), VR's current materiality in the form of clunky hardware can also detract from the experience overall. We thus observe the "tension between immersion, interactivity, and narrativity" (14) in *The Book of*

Distance that Jordan suggests exemplifies the postdigital potential of VR. However, it is vital that each work is considered on its own basis so as to avoid essentializing all VR experiences in the same light and missing the thematic message of each work. As we have shown, experimental, literary VR can create new forms of implicature suggesting, through spatial methods of re-embodiment, that the concept of emersion can be a productive technique of distance design in VR fiction, thus exposing readers' voyeurist stance and debunking any attempt at complacent empathy.

Acknowledgements

We would like to thank Dr. Maud Ceuterick and Aner Panislamovic, as well as all participants who contributed to this study at the University of Bergen, without whom this paper would not have been possible. Further thanks goes to Prof. Dr. Jill Walker-Rettberg for providing infrastructural support, and to the Institute of Literary, Linguistic and Aesthetic Studies at the University of Bergen for funding this project.

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