Chapter 19
Storytelling in Virtual Museums: Engaging A Multitude of Voices

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Abstract This chapter explores the integration of affective storytelling in virtual museum (VM) experience. The use of Information and Communication Technologies (ICT) affects the way people create, communicate and learn, opens novel opportunities and provides new means for museums to create narratives, express their points and provide quality experiences. Museums' integration of new media, empowers people to construct their own understandings within an open-ended framework. ICT permeate cultural life, not only by introducing new forms of creative expression and meanings for art, but also by enriching, transforming and enhancing the museum experience. ICT in museums can empower curators to disseminate their ideas and facilitate understandings of the complexities regarding museum exhibits and thus develop aesthetic perception, sensitivities and creativity. In this chapter, the function and cultural significance of storytelling as such is addressed, before venturing into discussing digital storytelling vis-à-vis cultural heritage organizations' practices. Furthermore, the potential of digital storytelling as fulcrum for rethinking museums as affective spaces in-dialogue with their audiences is delineated.

19.1 Introduction

Museums are public and social spaces. Museums, since the advent of New Museology in the second half of 20th century, seek to adapt to a wider call for audiences' empowerment, involvement and acknowledgment of visitors' individuality. Postmodern theoretical approaches further entrenched distrust to master narratives (be them ideological, epistemological or otherwise) leading to a tendency to afford, celebrate and promulgate multiple viewpoints and voices. The inclusion of a multitude of voices, narratives, personal stories not only introduces a participatory twist to museums, but heralds a new paradigm in which museums become sites for shared

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and dialogic meaning-making, rather than repositories of predetermined meanings to be relegated.

In the world of marketing, cultural organisations, such as museums, have realized that the brand and the brandname are not enough. Cultural consumers, museum visitors want stories. Life is about stories and people love stories. So, museums have become storytellers. They transformed their cultural products by attaching additional features, such as storytelling and digital storytelling, that combine educational and entertainment aspects, so as to make them more appealing and easier to understand. The museum exhibits are not important *per se*, but because of the stories they can tell, that trigger visitors' imagination and can thereby create unforgettable memories. These stories can reveal human presence behind the objects, make sense of museum exhibits by understanding an exhibit's function and meaning, and help visitors draw links between past and the present. Contemporary museum experience can be enhanced by providing tools for different visitor categories to help them create their own interpretations and share them with others.

The digitization of museums offers the possibility of a parallel virtual doppelganger of the original collections. However, this useful, yet limited in scope use of ICT, becomes sidelined, as the true potential of digital technologies in re-inventing museums' role becomes gradually realized. Virtual Museums (VMs) and emerging technologies, such as Virtual or Augmented Reality (VR/AR) have encouraged a transformation in terms of how museums connect to their audiences, how they engage them and what degree of agency they bestow to them. The countless possibilities ICT offer to cultural organizations have generated *lines of flight* into new methodological approaches favoring investment in affective, multimodal and immersive experiences, personalized interactivity and even co-authorship of the narratives framing their exhibitions. The passive museum, which presupposes and constructs a passive visitor, gives way to a new conceptualization of the user, since "the reader or critic shifts from the role of consumer to that of producer" (Eagleton 2008).

Storytelling is an age-old way to reproduce and pass on cultural content and norms dating back to the dawn of civilization. Religions undertook to promulgate their narratives, through language as well as visual means. Religion in 19th century Britain relegated to some extent the role of the moral and cultural arbiter to the newly emerged concept of museum, as mass industrialization led to a 'rationalization' of social discourses thereby creating a vacuum to be filled. The modernist era of grand narratives, as mentioned, receded, thus allowing for a *rhizomatic* symbiosis of a multitude of 'subjective' stories, intertwining to give a kaleidoscopic spectrum of personal voices, meanings, interpretations. Museums followed suit by introducing visitor-generated content, artists' interpretative interventions, and digital extensions into the domain of the virtual, which facilitate the circulation of affects, stories, ideas to an unprecedented degree. Interactive Digital Narratives, as cultural form, gathered pace and in the late 90s 'coalesced into a recognizable media practice' (Murray 2018) weaving themselves into the fabric of museums' digital resources. VMs utilize the potential of (interactive) storytelling through new tools, not as means to have their stories heard beyond their walls but all the more, in order to listen, incorporate and encourage the voices of their audiences to enter into a fruitful dialogue with them.

The following section presents the structure, stages and characteristics of multi-modal digital storytelling, outlining practical, as well as theoretical considerations. This leads to an investigation of the underpinnings, implications and conundrums related with participatory, affective digital narratives as voices-in-dialogue within the context of institutional practices, which increasingly relegate agency to their visitors. The interrelation between personal narratives, interpretative meaning-making and the construction of knowledge is outlined. Lastly, a case is made for the value of fostering inclusive polyphonies, ambivalence and polysemy in VMs.

19.2 Terms

19.2.1 A Short Story of Storytelling

Storytelling is one of the oldest existing forms of art, it is about sharing a story linking people in time and it plays a central role in all cultures. The ancient drawings in the cave walls of Lascaux around 30,000 years ago, can be considered as one of the most ancient storyboards and show that people wanted to communicate and deliver stories to others. It is an act of communication of events or happenings, real or imaginary. A story can be a blend of legends, facts, myths, beliefs, feelings and emotions. In Homeric epics, Odyssey and Iliad heroes tell stories about their lives and at the same time they deliver historical events. Storytelling can also be considered as the oldest form of teaching and concurrently, the first and most essential form of human learning, since stories are more easily remembered than raw facts, because they contain an underlying structure and can catch the attention of the listener and be linked with prior experiences.

Storytelling is based on a story and define a story structure, a narrative. It is the production of a narrative that communicates experiences and it can use words, sounds, gestures and expressions. According to the National Storytelling Network '*Storytelling is the interactive art of using words and actions to reveal the elements and images of a story while encouraging the listener's imagination*' (https://storynet.org/what-is-storytelling/). Storytelling is important for people, because it helps them to understand and organise their thoughts in a convincing way. Stories help visitors to understand and empathise, and museum to communicate its messages. There are three types of storytelling: "direct" storytelling (the museum tells about itself)—"indirect" storytelling (visitors tell about their experience); —"participatory" storytelling (virtuous mix of direct and indirect) (http://www.svegliamuseo.com/en/raccontare-il-museo-storytelling/). Museums can establish direct communication with the visitors, in which museum is the communicator and the visitor the receiver and *vice versa*, providing the visitor with the opportunity to actively participate in the story. Museum can have a conversation with the visitors, who can share their experiences and personal views.

Storytelling allows the democratization of knowledge and promotes the social integration, since the visitors can learn about their own heritage and reinforce the sense of belonging to a community and at the same time, learn about and understand cultural diversity and become acquainted to other ways of thinking. Technological advances that have emerged as areas of crucial interest, are making it possible to use sophisticated tools to generate VMs and deliver digital stories and information in a number of ways for experience emotions' enhancement, knowledge construction and meaning making (Sylaiou et al. 2020).

19.2.2 Digital Storytelling

During the 90s, the use of computers opened a new field called digital storytelling, a combination of the art of telling stories and digital multimedia. Digital Storytelling has been developed as a systematized methodology and widely spread, firstly by the Centre for Digital Storytelling (CDS) (https://www.storycenter.org) in Berkeley, California, founded in 1998. Moreover, the International Conference on Interactive Digital Storytelling (ICIDS) was created (http://icids.org/). According to the CDS, a digital story is a collection of audio, video, images, text, all put together to form a story on a screen that help individuals rediscover how to listen to each other and share first person stories and its goal is to inform or instruct on a particular topic (http://storycenter.org/about-us/).

The narrative of the museum exhibition involves interactive components and is linked with digital content, like images, sounds and videos, to produce a multimedia experience that allows the active participation of the museum visitor. Nowadays, ICT provide tools, such as digital storytelling, that deliver complex and interactive information in VMs, permitting onsite and online experiences and start conversation with the visitors. Museums can provide meaning to the ways that people interact with technology, use various content delivery methods, such as Web browsers, tablets, smartphones, provide interactive storytelling experiences not only for individuals, but also for groups and use multiple layers to present a story (Wyman et al. 2011).

Storytelling in VMs can describe relationships between exhibits and contribute to visitors' engagement via interactivity and the use of dramatic elements, as well as through the personalization of the information delivered, since the user can decide which parts of the story to explore. It is attractive and engaging to a variety of audiences, since stories can evoke emotion and contribute to learning. VMs are often considered as places of learning associated with the presentation of facts. However, they are also places, where curiosity is invoked through culturally rich and memorable museum experiences that can lead to deeper understanding and learning.

People that watch stories perceive themselves as participants: *scans of their brains show it, not as a spectator, but as a participant in the action* (https://www.museumnext.com/insight/digital_storytelling_in_museums/), a fact that sheds new light on the concepts of *mimesis*, *poiesis* and *praxis* (Ancient Greek: μίμησις, imitation; ποίησις, making; πράξις, doing, acting), philosophical terms

used by Aristotle. Nicholas Davey (Macleod and Holdridge 2006) posits that 'If the roots of modern theory are traced back to the ancient Greek conception of *theoria* ($\theta\varepsilon\omega\rho\acute{\iota}\alpha$, contemplation) and *theoros* ($\theta\varepsilon\omega\rho\acute{o}\varsigma$, participant), a path to rearticulating theory as a mode of participation in practice is opened' [ibid., p. 23]. The importance of the *engaged participant* becomes foregrounded in this conceptualization of *theoros* and can inform the reimagining of VMs users' role, as active participants in negotiating meanings in museums.

19.3 Rethinking Museums Through Storytelling

As Saroj Ghose explains in 'Rethinking Museums: The Emerging Face of Storytelling' (http://www.maltwood.uvic.ca/cam/publications/other_publications/Text _of_Rethinking_Museums.pdf) the very concept of introducing storytelling in museums emanates from a paradigm shift according to which museums were reimagined as activity-oriented places and not as passive repositories of collections. He mentions the Deutsches Museum in Munich in the 1930s as probably the first example of a museum, which encouraged hands-on interactive approaches, thus introducing the museum that does things rather than has things. Ghose posits that technology functioned as catalyst in rethinking museums' role towards visitors' active participation, and the fact that Deutsches Museum was according to him a forerunner in this direction, relates to its technical orientation showcasing and promoting technological advancement, in terms of content and intent. Today, as Ghose notes, ubiquitous technological advances support the proliferation of such practices in cultural heritage organizations, which increasingly invest in storytelling as the benefits are 'manifold', ranging from making museums more attractive, effective and efficient by providing context and coherence to their collections: Storytelling presents 'a particular episode of history, partially with artefacts and largely through personal experience so that the episode is presented in its complete form' [ibid.].

Danks et al. (2007) explain that even in storytelling 'determined' by the museum, 'Digital technologies allow more sophisticated nonlinear stories; allowing visitors to interact with the story at different points in time'. They refer to the example of the ART-E-FACT project 'which introduced MR interactive storytelling with virtual characters, positioned next to real art pieces in an exhibition, discussing art, while prompting visitors for their opinions and questions (Spierling and Iurgel 2003). Danks et al. (2007) developed (and tested) the Interactive Storytelling Exhibition Project, which combined 'both interactive television storytelling and gaming technologies to immerse museum visitors with artefacts on exhibition, engaging the user into physical space using virtual stories'. Their imaginative approach engaged users who found the experience unanimously enjoyable, as well as informative and inspiring. Their game-based approach, which involved narratives throughout, is illustrated by their exclamation that in their project, game drives narrative and narrative drives game. This is in line with General Learning Outcomes (GLOs) that underpin the aims of museum education in the UK. GLOs emphasize, apart from the targets of skills,

understanding and knowledge, aims related to emotion and enjoyment as equally important and indispensable for efficient meaning-making (Hooper-Greenhill 2004; Graham 2013; Falk and Dierking 2000). This fact draws attention to the importance of emotions as fulcrums for engaged learning especially in immersive museum experiences.

This shift towards storytelling brought about the question of what stories will be shared and whose voice will be prevalent. Wyman et al. (2011) note that 'The museum's approach to storytelling has evolved. What was once primarily a voice of authority speaking to the public through exhibition display and publications has dramatically turned, in many places, into a multifaceted experience that invites conversation and interaction with visitors.' Fisher et al. (2008) discuss the integration of visitor-contributed narratives into the narratives of art museums, within both curatorial and educational programs. They present the 'Art of *Storytelling* Project' in which the construction of narratives by visitors in relations to exhibits created strong bonds between the institutions and their users, as they felt that their trace has been inscribed in the corpus of the museum.

Hein's book (2006) with the telling title *Public Art: Thinking Museums Differently,* outlines a reconceptualization of the museum, according to which *concurrent stories* could emerge from visitors' interpretative or emotive accounts of their encounter with artworks. This paradigm shift could not only expand into VMs but, in them, could find a prime framework. Hein refers to Julian Spalding, former director of the Glasgow Museums and Art Galleries, who 'holds that museums should not tell one history, but rather facilitate many concurrent stories. In his book The Poetic Museum, he proposes that the museum be something like a self-generated poetry anthology, permissively equipped with stimulating artifactual props' [ibid., p. 110].

19.4 Interactive and Participatory Storytelling in VMs

19.4.1 Parts of Storytelling

Digital storytelling in VMs can be constructed similarly to a theatrical production. In his essay *Poetics* (c. 335 BCE), Aristotle writes that a story shall imitate a whole action with a beginning, a middle and an end, and the events shall follow each other (http://classics.mit.edu/Aristotle/poetics.mb.txt). The parts of a good storytelling, as outlined by him, like the *mythos* or *plot* ($μῦθος$, the imitation of the action, the storyline), the *character* ($\tilde{ἦ}θος$, the actors), the *thought*, the *diction* ($λέξις$, the expression of the meaning in words), the *melody* ($μελοποιία$), the *spectacle* ($ὄψις$), have been translated into some rules for storytelling in User Experience (https://www.interaction-design.org/literature/article/aristotle-on-storytelling-in-user-experience) that can also be used for the needs of a VM creation. Storytelling techniques have been also explored by (Freytag 1863), which introduces the standard model of the narrative plot (Callaway et al. 2012), the dramatic arc that is divided in:

exposition (with important background information to the audience), *rising action* (series of events that lead to build up the climax), *climax* (the turning point of the story), *falling action,* and *dénouement* (the resolution, the conclusion of the story with a sense of catharsis).

A more contemporary story structure as Atasoy and Martens note (2011) can be detected in Field's Paradigm, (Duarte 2010) a three-act structure, that is a simplified and compressed version of Freytag's five-act structure. Three-act structures consist of: Set-up, Confrontation, and Resolution. According to Field, what moves a beginning to the middle and the middle to an end are called plot points which are definitive moments where an event happens that changes the direction of the story (http://classics.mit.edu/Aristotle/poetics.mb.txt; https://www.interaction-design.org/literature/article/aristotle-on-storytelling-in-user -experience).

As Atasoy and Martens explain, (2011) Freeman, interpreted the three-act structure as an energy curve, called Aristotle's Plot Curve, that visually communicates the relationship between time (horizontally) and dramatic intensity (vertically).

Moreover, 'Glebas[1] took a step further and interpreted dramatic intensity as emotional involvement. In his interpretation, the vertical axis depicts how much the audience is involved or 'lost' in the story' (Atasoy and Martens 2011).

The Aristotle's formula comprising of seven elements is presented, in order to convey the subtle balance between structural elements as well as affective ones such as the emotional impact of melody. This illustrates the complex interdependence of sensuous, emotional, thematic and content-related aspects of a multimodal narrative.

19.4.2 Key Stages In Creating Multimodal Storytelling-Based Resources

Interacting with digital storytelling applications may lead to confusion and the need for some support in a museum space. All the more, engaging in digital storytelling as (co) producer of multimodal resources is a daunting task, exciting as may be, and for non-experts (e.g. museum casual visitors) there is need for step-by-step guidance (Bán and Nagy 2016). A rough outline of the steps involved in Digital Storytelling follows: The first step is to identify the scope, the main idea and the gist of a personal story, in a creative, open ended and brainstorm-like process. The story should be outlined bearing in mind, what it 'wants' to achieve.

A supporting context in the shape of a team of prospective storytellers with the guidance of an experienced professional as trainer is highly desirable if not necessary. The task of trainers in such case is complex (Bán and Nagy 2016). In the course of developing and dramatizing the stories, they may often have to address sensitive, difficult or psychologically taxing situations, and in the meantime, they also have to

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[1]Glebas, F. Directing the story: professional storytelling and storyboarding techniques for live action and animation. Focal Press, 2008.

maintain group cohesion and coordinate processes of group dynamics. The merit of having support also relates to the organizational phase that follows later on, which involves a compilation of relevant resources (visual or other) and supporting the multimodal story with a clear workflow blueprint and time framework. The group can also be invaluable as a peer-review matrix, providing feedback that could inform the course of the storytelling foray.

Scripting is the first stage towards giving shape to the actual contents of a digital narrative; and is highly important—as is the case with the following storyboard phase that also addresses the visual/aural aspect and overall composition of different modes. Scripting, the creation of the account as text, fine-tunes the point of view, the register, purpose and affective potential of the story ironing out issues of pace, economy (i.e., creation of succinct and to the point narrations) and content.

As Bán and Nagy (2016) stipulate 'In the script it is best to think in simple, short sentences, taking care of using expressions and idioms characteristic of the storyteller and avoiding phrases which are strange to their personality. It is important for the storyteller to feel that at the end the story is their own'.

Boase 2013 presents a study focusing on the benefits of digital storytelling shedding light on the scope of favoring scripted narrative over spontaneous ones: 'Comparing the pros and cons of a free-spoken narrative to one that is scripted before being spoken, Nygren and Blom (2001) conclude that one of the positive experiences of using prepared narratives is that the 'empirical material is more structured, as well as more reflective, than the transcripts from interviews. The higher degree of reflection implies that the story is more 'understood' by the narrator. Thus, the material can be assumed to say much about the narrator's self-conception, something that is important for research on identity, life-stories etc.'

This outlining of scripted accounts' benefits, in effect conveys what these scripts should try to achieve in order to be successful: namely, a thoroughly elaborated outcome of reflexive procedure that is in fact an effort to work on one's notion of self. Understanding, organizing and presenting their own way of thinking/feeling is akin to a meta-process of reconstructing their world-views and sharing them. Boase (2013) refers to the philosopher Hannah Arendt, who posits that narratives are a fundamentally communicative form, because, as she sees it, a story 'amplifies the circle of selfhood into an enlarged mentality' and because all narrative is written with the anticipated communication with others in mind (Kearney 1998).

Storyboard gives shape to how diverse modalities will work together, how the (visual) structure will progress and become finalized offering a platform for amendments, testing solutions in an increasing level of fidelity to the final product.

The storyboard stage is in effect the design phase of the storytelling project. As such, it is fairly pertinent to artistic practice in the sense that orchestrating how different modalities will work together, as well as honing the aesthetic qualities of the multimodal narrative is in essence, an effort to balance content and form in order to achieve a meaningful and affective end product akin to a multimedia artwork. So, the next step after the 'scenario' is established in the form of scrip, is to illustrate and delineate, with the use of visuals, a storyboard. There are several templates that can be followed; however, they all converge to the same basic principle of aligning

voiceover, i.e. parts of the account in written text with the respective imagery that will appear in the video, along with notation of probable effects, transitions and if applicable, the soundtrack or soundscape that accompanies the narration. A simple template can be described as follows: '*This is a simple two-column table, one column of which has the text divided according to a certain rhythm—usually sentence by sentence—paired with the appropriate photos in the other. The storyboard makes the proportion of pictures versus the text in the story visible*' (Bán and Nagy 2016).

The narrative is thus presented visually as well, following the elaboration on the written script. Storyboarding as a technique is extensively used in Human Computer Interaction design (Truong et al. 2006). Storyboards present the difficulty and challenge that the author's motivation, emotion and outlook in relation to an issue, subject or situation have to be clearly encapsulated and represented (Rubin and Chisnell 2008).

As is the case with every assemblage of modes, everything affects the potential to affect the senses and concomitantly the intellect, so the tonality of the voice (itself a mode which influences how the story is perceived or interpreted) the quality of recording, existence or lack of ambient noise/sound, all are part of the overall message conveyed. Moreover, this is the first proper technical stage and put in simple terms, 'Both the technical quality and the "subjective feel" of the recorded voice are crucial for the success of digital storytelling' (Bán and Nagy 2016). The same principle applies to the visuals that will be processed and edited.

At all stages, the quality of imagery, appropriateness and awareness of how image, sound (recorded narration of other), interrelate and become mutually enhancing is crucial. Pacing, the rhythm, moments of intensity and accentuations along with parts of subdued, subtle feel to them, silences even, play a major role in affecting how storytelling works. Use of adequate software is another consideration, as the affordances of each application should be taken into consideration before making pertinent choices, bearing in mind the characteristics that are desirable and apposite for the digital storytelling project at hand. Putting it all together and making it work, is a continual procedure of trying out possibilities, sharing them with others, in a reflexive cycle that leads to the final stage of how actually this is going to be shared, projected into the social domain, or into a cultural heritage context. The last stage brings about a need to consider issues of authorship, copyright and dissemination.

Furthermore, ethics come into the equation, especially when the story narrated involves others, touches upon sensitive issues, or is altogether the story of someone else either in the form of interview, or as an account about a non-present person. This is also a lateral indication of the differing ontologies of storytelling that pertain to the self, i.e. stories about oneself, or even story as the (construct of) self.

Moreover, differentiation in register and meaning accrues, when an account is akin to an interview, or is in a discursive format—in which case the account is co-authored. Such forms of storytelling entail an encounter with the 'other'. Nevertheless, dialogic approaches can be the optimal approach for a series of instances or situations.

Taking a step further, even critique of, or contemplation on the very concept of narrative form, as bearer of meaning or truth, may be the scope of digital storytelling. Vertical Features Remake (1978), a film by Peter Greenaway, can be an example

(albeit an artwork), that nevertheless, addresses and to an extent explores the very conventions underpinning of narration and storytelling. As it hovers between reality and fiction, it offers an imaginative form of reflexive critique that mockingly mimics documentary filmic accounts.

19.5 Discussion of Theoretical Implications

19.5.1 Engaging Stories as an Enabling Factor for Meaning-Making

Sylaiou et al. (2017) in their study investigate the educational impact of diverse technologies in online VMs. In relation to the implications and value of narrative in the form e.g. of videos presenting first-person accounts in VMs, they explain that '…storytelling is inserted into the visitor's experience to offer a personal view and foster engagement'. Engagement is the key point and therefore pertinent research and approaches gravitate towards the inclusion of interactivity and all the more, co-authorship of the narratives that increasingly support (or even comprise) the contents of VMs. Glassner (2004) defined interactive storytelling as a two-way experience, where "the audience member actually affects the story itself". Riznic et al. (2012) explain the motives behind the use of digital storytelling with elements of interactivity in a compelling VM environment whose design and affective potential has been put to the test in their study: "Digital storytelling is narrative entertainment that reaches the audience via digital technology and media". Miller (2008) states that digital storytelling techniques can make a dry or difficult subject more alive and engaging to the viewers. This was exactly our aim when introducing digital storytelling in a VM application (ibid.).

Giaccardi (2006) presents in his study the VM of the Collective Memory of Lombardia (MUVI). MUVI relies principally on the public's contribution of stories, photographs, even spoken accounts recounted on a 'radio' platform especially designed to encourage storytelling. It is an early example of collective storytelling in VMs and employed a necessary processing and filtering process (often involving local volunteers) to digitize and foreground the most effective photographic documentation framing the participants' accounts for the preservation of the fleeting memories of Lombardia. According to Giaccardi (2006) MUVI 'shows how the collection and preservation of physical artifacts can be connected to expressions of social creativity by means of processes of participation and collective storytelling that are sustained and empowered by the convergence of different media and information technologies…MUVI is a "relational museum," that is, a museum that promotes knowledge not as a body of facts reliable at any time and any place, but as a more complex reality in which multiple narratives play an important role.'

As Giaccardi (2006) posits, virtuality in museums is not a facile process of digitally replicating artefacts, but a whole new opportunity to create frameworks that encourage engaged participation and relation, co-construction of meanings and interpretations, thereby bestowing agency to the bearers (and seekers) of a community's collective memory: 'Virtuality does not mean merely to reproduce preexisting objects, but also to actualize new ones. Virtuality can be used to invent new methods of producing meaning, and hence technologies capable of activating and sustaining emotional mechanisms, triggering new relationships, and engendering new knowledge' [ibid.].

19.5.2 Narratives and the Construction of Knowledge: A Troubled Relation

Bakhtin, a prominent author who exerts considerable influence on contemporary theorists, investigated narratives and introduced the concept of Chronotope. According to Bakhtin, fictional narratives are based on specific genre-dependent perception of a time-space continuum. Bakhtin's multifaceted research opens up a discussion on the extent to which (modern) history and other social sciences are structured in the image of fiction. That is, non-fictional discourses related to narratives e.g. history, art history, are constructed on a logic emanating from (and even resulting in) fiction. This seemingly innocuous affair means that sense of reality itself is conforming to fictional terms. A key objection to the fictional narratives typically based on the convention of 'decisive moments' is that they affect the perception of reality itself. Changes in 'real life' happen slowly, brew under the surface and are brought about, not as result of 'fateful moments' but as the effect of multiple factors interrelating in ways which are hard to map out. Stories can be inspiring, spectacular and emotive. However, the issue discussed here is how to avoid a distortion of the logic behind the evolution of situations so that it matches a sensationalist urge for fascination.

The suspension of disbelief that support every form of narrative (especially those involving visual communication) should by no means entail suspension of critical and contextual thinking. Conversely, addressing the complexity socio-cultural processes should not result to jettisoning the affective and engaging potential of the narratives. This is a challenge that, if answered properly, can offer informed, pleasurable and thought-provoking uses of narratives mediated by ICT.

A characteristic example of the emerging technological possibilities in the field is the work of Casillo et al. (2016) who present a study aiming at 'the realization of a dynamic storytelling engine that can allow the dynamic supply of narrative contents, not necessarily predetermined and pertinent to the needs and the dynamic behaviors of the users'. In their paper an array of related studies in digital storytelling outside the linear paradigm is also presented. As Casillo et al. (2016) explain, digital storytelling exists in many forms and encompasses multiple fields; in particular, there are the following typologies: linear, non-linear, adaptive, social/collaborative, mobile and game.

An indication of the richness of forms that storytelling can take, is the foregrounding of non-language-based ways of conveying a story: As Doulamis et al. (2017) note, 'during dancing performances, motion gestures are used to communicate a storyline'. In their paper they presented the concept of the Terpsichore project, in which technological means are proposed as ways to capture and render in 4D choreographies as elements of intangible heritage that can also tell a story.

The relationship between storytelling as somewhat subjective representation of meaning on the one hand and knowledge proper as an objectively constructed body of factual information or demonstrable skills, on the other, can be seen as a binary opposition. What eschews such a conceptualization is the fact that representation of meaning is what all symbolic systems, language withstanding, actually do: all forms of language-based knowing, scientific or otherwise, emanate from and are based on the intricacies of how representations of meaning are perceived, decoded and interpreted something which in turn, entails an element of subjectivity—especially evident in the field of humanities. This is not an effort to relativize meaning-making and knowing, but quite conversely, given the multitude of forms storytelling can take, language-based or even movement/gesture-based, at this point, the interrelation between knowledge and multimodal narration as representation of meaning, becomes the focal point. With reference to the relation between Intangible Cultural Heritage (ICH) that relates to forms of storytelling (language-based or not), and knowledge, the connection is twofold: ICH *encompasses knowledge* in its many forms, while the analysis, codification and the semantics of storytelling entail the need for the production of further knowledge in the field, particularly when digitization is involved, and all the more when non-language based representation of meaning is concerned—as is the case with folkloric choreographies which incorporate narrational aspects.

As Doulamis et al. (2017) who present their research, precisely in this field, note, citing UNESCO,[2] ICH content means "the practices, representations, expressions, *knowledge*, skills—as well as the instruments, objects, artefacts and cultural spaces associated therewith" (emphasis added). Moreover, they outline their elaborate process of capturing, modelling/rendering and most importantly deciphering in terms of semantic content the movements, gestures, trajectories involved in the choreographies which according to them pertain to storytelling, albeit through different modes:

> During dancing performances, motion gestures are used to communicate a storyline in an *aesthetically pleasing manner. Although, humans automatically perceive and understand such gestures, from the point of view of computer science these gestures have to be analyzed under an appropriate framework with appropriate features, such as repetitive patterns, motion trajectories and motion inclusions, in order to extract their semantics.* (Doulamis 2017)

Doulamis et al. developed such framework through Terpsichore project, and their relevance to the moot point of whether knowledge construction and symbolic representation through forms of storytelling are indeed inextricably related, is answered in

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[2]UNESCO, Text of the Convention for the Safeguarding of the Intangible Cultural Heritage: Article 2—Definitions at https://ich.unesco.org/en/convention.

two ways: storytelling within, as well as without language encompasses knowledge. Most importantly, the effort to render such representations in digital form entails the necessary production of further knowledge in the field. Rendering these multi-modal narrative-related resources in ways that do not truncate their meanings, and in interoperable formats that allow for future interaction with them on pertinent online platforms/libraries (e.g. the EU digital library EUROPEANA), or in VMs, allows for re-interpretations and possibly as a next step, given that such operability is afforded in the future, input from other users.

19.5.3 Who Is Authorized to Tell the Stories? Towards a Polyphony-in-Dialogue

There is a major issue on cultural heritage organizations' *mode of address*: who is authorized to tell the stories, whose voice is legitimized i.e., who has the agency to speak. The institutional authority of the museum as the arbiter of what is deemed valid, significant and even true, is questioned within a developing discussion that foregrounds dialogic, participatory and inclusive approaches valorizing the multiple voices of the public. Technology, not as a panacea, but as an aid, renders the possibility of visitors' co-authoring of the narratives framing exhibitions, collections and artefacts, practically feasible, thus removing an obstacle which conveniently bolstered the exclusiveness of agency to institutions.

The solution to the conundrum of how a narrative can include a multitude of voices, may be traced back to Bakhtin once again: Bakhtin introduced the notion of dialogism focusing on 'Polyphonic Novel' that according to Allen 'fights against any view of the world, which would valorize on 'official' point-of-view, one ideological position, and thus one discourse, above all others'. A Polyphonic narrative has 'no objective narratorial voice to guide us through the vast array of voices, interpretations, world-views, opinions and responses' (Allen 2000, p. 24). Bakhtin's theory of dialogism (Bakhtin 1990) and *heteroglossia* relate to the interplay of different aspects registers and aspects of language. The 'official', institutional language as the given, is referred to as Langue, while the living language the Parole. *Langue* as the closed system of language and *Parole*, as individual utterances, form a binary opposition dating back to Saussure. Langue is the conceptualization of language as a machine organised around a fixed syntax whilst *Parole* refers to how *Langue* is actualized, lived and used by people.

Terry Eagleton argues that "Bakhtin shifted attention from the abstract system of langue to the concrete utterances of individuals in particular social contexts" and that "language was seen as inherently 'dialogic'…" (Eagleton 2008, p. 101). What Eagleton, a prominent 'public intellectual', underlines here, is that the language of institutions and the multitude of individual voices are inextricably interrelated. Language *is* a heteroglossia, a double-voiced dialogue between the established and the emerging voices. The importance for this paper here, is that a model based on the

dialogue between institutional and visitors' voices can form the basis of storytelling in VMs.

Dissonance and mental conflict are not what dialogic is about; Kristeva in her explanation of Bakthin dialogism posits: *text belongs to both writing subject and addressee* (Kristeva 1980, p. 66). In her discussion on intertextuality she argues that "signifying practice is never simple and unified. It is the result of multiple origins or drives and hence, it does not produce a simple uniform meaning" (McAfee 2004, p. 26). Ambivalence and polysemy may be the result of this lack of uniform meaning; however, this is a welcomed outcome.

Gabriel and Connell (2010) present their study in the potential of Collaborative storytelling and quote Watson (2000) who pioneered 'ethnographic fiction science' (chiming with Djerassi's term 'science-in-fiction'). Watson investigates elements of storytelling in social sciences drawing 'legitimacy from Czarniawska's extended and persuasive arguments that virtually all theory of organizations, including that which is based on claims of literal truth, has a narrative character' (Gabriel and Connell 2010; Czarniawska 1999; Czarniawska 2004). What transpires here is that organizations construct truths in the way fiction is created.

Boase (2013) refers to the hermeneutical philosopher Paul Ricoeur also saw narrative-making as a process of socialisation, because by giving our story and receiving those of others, we 'renarrate' ourselves and increase our understanding of others (Kearney 1998). For Ricoeur, there is a parallel between narrative imagining and 'the practical wisdom of moral judgement' and building on Aristotle he believes that narrative is particularly well-suited to ethics because it deals with the singularity of human experience (Boase 2013; Kearney 1995).

Quesenbery and Brooks (2010) note that stories are not to be perceived as a form of broadcasting, in which case a given account is simply disseminated, but they should be seen mostly as conversations. Papagiannakis et al. (2018) suggest that Museums can act as primus inter pares (first among equals) and create a direct communication with the visitors, in which museum is the communicator and the visitor is the receiver and vice versa, providing the visitor the opportunity to actively participate in the story. Museums can have a conversation with the visitor, which can share her/his experiences and personal views. To this end, recent AR/VR commercial h/w technological advances enable the use of sophisticated tools to deliver VM stories and information in a number of ways for experience enhancement, knowledge construction, and meaning making (Sylaiou et al. 2020).

Moreover, in the same vain, Quesenbery and Brooks (2010) posit that 'Stories…are as much a part of the audience as of the storyteller. They come to life in the imaginations of the audience members, whether it is one person or hundreds of people' (Quesenbery and Brooks 2010, p. 24). In this respect stories function in the same way that artworks do: they are not meaningful per se, as unalterable hoardings of meaning, but conversely their value relates to their ability to actualize meaning-making at the level of the viewer or beholder. As Addison explains: '*the art work is not a repository of meaning but a site for meaning-making*' (Addison 1999, p. 36), this evidently applies to how storytelling, in its manifold modalities, operates, which in last analysis, oftentimes takes the form of an artwork proper.

Nicholas Addison is a prevalent theorist and practitioner in the field of Art and Design Education, and has done extensive research in the *volatile space* between art, semantics, meaning-making and learning. The relation between art education and digital storytelling might not be salient, or even obvious, but as new methodologies and technologies emerge, the two fields converge if not conflate, something that bear particular interest for the roles and uses VMs may acquire. Chung (2006) posits that:

> With Internet technologies, digital storytelling makes it possible for individuals to produce their own knowledge…In arts classrooms, the processes of making a digital story propel students to move beyond simply making art for its own sake, because for a story to make sense, it must entail certain contextual meanings to which the audience can relate. Incorporating digital storytelling into arts education is a powerful way to integrate school subjects, teach life issues, and create postmodern works of art that are inspiring to the digital generation.

The last sentence albeit not being the most pertinent to how digital storytelling relates to contextual inferences at the level of user thus fostering active engagement, it nevertheless underlines the confluence of art and digital multimodal narratives, as well as their relevance to the 'digital generation's' sensibilities—both issues bearing considerable importance in relation to how VMs could or should incorporate digital storytelling as dialogic platforms fostering bonds with audiences.

It is characteristic that multimodal storytelling forms the backbone of students' art sketchbooks a form of narrating though artistic/visual/textual means the process of forming/informing stances, influences and personal research in the visual arts. These influences come from the users' interaction with artworks oftentimes seen at VMs. Art sketchbooks are primarily used as means for reflexive meaning-making by advanced, arts-orientated secondary students, on the basis of which assessment on arts-related skills and understandings takes place, and are often showcased by their makers as online narratives through videos posted mostly on YouTube.

In these instances, a lengthy storytelling process recounting how these multimodal accounts progressed provides both an afterlife to these elaborate art sketchbooks (which themselves have narrative form), and another layer of narrational explanation/interpretation shared and open to feedback. To the extent that such assemblages relate to VMs' impact they could well become embedded into virtual/online museums as resources and instances of arts-based input that essentially falls under the definition of digital storytelling privileging the visual.

As Chung (2006) notes, citing Meadows (2003) digital stories can be described as "short, personal multimedia tales told from the heart." She then relates these multimodal accounts to the manifold benefits as well as to their societal aspect: 'The application of digital storytelling to arts education is an interdisciplinary and inquiry-based pedagogy with a hands-on project that integrates the arts, education, local communities, technology, and storytelling'. Addison, highlights that fact that besides the dialogic element pertaining to a wider community, such narratives in the form of art sketchbook which are often shown in video under the economy of a personal account, or could well morph into digitized multimodal storytelling proper, and even most importantly these also entail a formative dialogue with the maker's very self: The sketchbook/diary could be argued as a site for self-reflexivity, an opportunity for an aesthetic working on the self that enables the student to achieve

'the perfect supremacy of oneself over oneself' (Foucault 1992, p. 31), a process in which the critical and productive are blissfully indivisible (Addison 2007).

Most forms of digital storytelling relate to the authors' self, in an autobiographical manner. Nevertheless, revisiting one's (life) story is akin to reinventing one's self in a reflexive way. Writing or drawing the diary of the self, redefines and thereby enriches the self. This is inevitable as the self essentially is a diary, a form of self-written palimpsest. Freeman asserts that 'the self is indistinguishable from the life story it constructs for itself…' (Ellis and Bochner 2003, p. 220) after (Dafiotis 2011).

Lambert (2013), p. 127, in his book Digital Storytelling: Capturing Lives, Creating Communities draw attention to the Storytelling as reflective practice:

> You become present, and step into a zone of awareness…Digital Storytelling is a form of reflective practice. This reanimation of the image artifact as part of the edit makes you feel as if you thinking about people, places, and objects in new ways. The plasticity of images, music, voice, the very playfulness of arranging and re-arranging meaning by visual sequence and juxtaposition, the entire process becomes regenerative for many people.

What is suggested here is that art sketchbook, revisited as a (digital) form of storytelling, offers a new possibility for meaningful and apposite inclusion of such methods in VMs: In specific, encounters with artworks can be framed with digital storytelling, and become embedded in VMs and thereby be open to users' input and redefinition. These multimedia/multimodal responses could well weave into the fabric of the virtual exhibitions in an effort to create more responsive, inclusive and dialogic cultural online platforms that aim at making audiences, quite literally speaking, part of the story. The polyphony in dialogue envisaged in this paper in such case, does not only include the voices of many, but the many forms voices can take. That is to say foregrounding also the praxis and the artistic production in the form of multilayered, personal accounts 'from the heart'. These may tell the tale of how their makers engaged with artworks, which (re) shaped their practices as reflexive practitioners who may thereby inform and enrich the energies, dialogues as well as artworks that permeate online museums, as an additional arts-based possibility for audience engagement.

Another twist is being introduced by Kahl et al. (2017) and refers to the emerging possibility of engaging audiences by means of a narrative framework that goes across museums. In specific, based on a network of museums in the Rhine-Waal region of Germany and the Netherlands, they present their research on 'the concept of a continuation network, i.e. we are creating concepts, techniques and software to integrate several museums within a narrative and experience framework, where a satisfactory UX [User Experience] within a museum leads to the desire to continue the experience within another museum' [ibid.]. Motivation of young/adolescents to visit museums here is the key quest, but the use of storytelling that in effect create a space of dialogue amongst them, by connecting their narratives, in order to generate a keen interest in a commonly shared space of cultural organizations. So (virtual) museums that 'talk to' or have something to say to each other, apparently mobilize and encourage youngsters to go and listen, and moreover, given an appropriate framework as several researchers indicate, could well become part of this discursive space themselves. This appears to be a key element in order to sustain interest

as users experience that is not restricted to a certain node/VM but rather pertains to a constellational network of institutions, sites, museums evidently creates space and appropriate conditions for a new digital generation to become involved and stay engaged.

19.6 Conclusions

This text calls for the inclusion of polyphony-in-dialogue between users and institutions, establishing a fruitful and engaging symbiosis beyond arbitrary authoritarian narrative constructs—in denial of their provenance from fiction. This polyphony might result in cacophony if not properly framed in theoretical as well as in methodological (practical/technological) terms. Digital storytelling interfaces might be designed for example in a layered manner, allowing for a workable, flexible and personalized manner. Thereby they can adapt to the profile of users and cater for different needs and degrees of visitors' interest, involvement and commitment. Difficult heritage artefacts, such as e.g. relics of 'liberatory' anti-colonial struggles in the London War Museum, could afford the voices of those involved from both sides. Thus, they can provoke thinking in a participatory and reflexive way, without simply juxtaposing conflicting outlooks.

As Zengin notes (2016), 'In Bakhtin's theory of dialogism, the central idea is that every word "is directly, blatantly, oriented toward a future answer-word: it provokes an answer, anticipates it and structures itself in the answer's direction" (Bakhtin 1990, p. 280)'. Texts, narratives, storytelling in VMs aim at engaging audiences, principally referring to artworks and artefacts. After all, this is what artworks especially in contemporary art do: they pose or even embody a question or an *aporia*, leaving the space for interpretation open to multiple voices: Today's public artists incline to replace answers with questions. They seek to advance debate and discussion. Their art is left open-ended and invites participation. Its orientation is toward process and change rather than material stability. Since its borders are indefinite, so is its authorship (Hein 2006, p. 76). The same could be the case with narratives and storytelling in VMs as Hein suggests [ibid.] as they incorporate the technological means for the materialization of open-ended platforms that encourage *dialogic* encounters with artworks mediated by, and resulting in storytelling. Storytelling in VMs can foreground these radical ambivalences and the meaning that 'never fully arrives' underlining and enriching dialogic interpretations beyond the explanatory paradigm, convenient as may be.

Last but not least Kuhn (1970) has shown that the production of systematic theoretical or 'scientific' knowledge always takes place and indeed requires a knowledge-producing community of some sort no matter how flexible and loosely structured it may be (Usher 2001, p. 51). The role this paper envisages for VM visitors is for them to become an empowered knowledge-producing community. Visitors can collaboratively construct narratives using VM storytelling platforms, partaking in equal terms in the production of their personal truths, akin to the way in which art produces them.

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