



## Research article

## The explosion of digital storytelling. Creator's perspective and creative processes on new narrative forms

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## ABSTRACT

Networked digital narratives are developed in a society marked by distrust in meta-narratives, liquidity and tension between Mass Media and New Media. This research aims to delve into these narratives from the creators' perspective, analyzing new formats, authors and creative processes that are put into practice. For that purpose, the applied methodology combines in-depth interviews with creators with discourse analysis, and arts based research with the technique of the research journal. The results reveal an overflow of the classical conception of narrative, a trend towards convergence, and the dominance of visual and sequential creative thinking over alphabetical-continuous thinking. It also shows a series of clues for the creation of digital narratives: interactivity, hypermedia, transmedia, virtuality and connectivity. Finally, we highlight that creators do not have preestablished guidelines and follow the procedure of trial and error for the construction of their narratives.

## 1. Introduction

Digital narratives are immersed in a new media environment that maintains a close relationship with the construction and comprehension of contemporary society. The emergence of a new generation of media based on an innovative model founded on the networks and the collaboration of their users "is defying our knowledge on the old mass communication media" (Scolari, 2008). At this time of media disruption, digital storytelling is characterized "by the fact of giving to contents a paced and exciting narrative structure, but especially for the richness and variety of stimuli and content that allow to involve an extremely wide audience" (Clarizia et al., 2018).

This research aims to delve into these narratives, from the creation perspective, analyzing new formats, authors and creative processes that are put into practice by applying a qualitative methodology. For that purpose, the applied methodology combines in-depth interviews with discourse analysis, and arts based research with the technique of the research journal. The intention is to collect a first-hand testimony of the phenomenon.

## 1.1. Context

A reshaping of identity and collective expression is taking place. Audiovisual and multimedia gain importance over the word in an everyday and globally-connected digital environment, in which "people who have never done so before are telling personal stories through digital forms" (Couldry, 2008). Manovich (2005) highlights the numerical nature (digitalization), the modularity, the automation, the variability and the trans-codification of this media system. The role of code and software, in their hybridization with pre-existing cultural conventions, has taken on a fundamental value. Transformations in the communication processes are especially evident in the changes occurring in the narratives and readings. Martín-Barbero (2008) summarizes them as "a disconcerting architecture of languages –sound, spoken, text, visual, digital-constructed on interfaces between words and images, sounds, colors, volumes, shapes and sometimes rhythms and tones". For Madianou and Miller (2012), the mediations are expanding. The definition of the narrative act becomes complex. It is both a concurrent and an atomized phenomenon, evolving and mutating continuously, at an accelerated pace.

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## 1.2. Background

### 1.2.1. Transversal nature of networked digital narratives

Some authors have tried to define and categorize the nature of networked digital formats within this changing environment, focusing on its capacities for interaction and immersion, sequentiality, participation, spatiality and comprehensiveness, as well as the regulation of an invisible code (algorithms) that adds a reactive nature with the environment and an interactive one with the user (Murray, 1999; Ryan, 2004). The bits facilitate its rewriting and modularity. There are multiple sensorial and semiotic channels combined with the capacities of a network connecting machines and people in virtual spaces. Under these dynamics, centrality, margins, hierarchy and linearity as traditional conceptual systems are confronted with multi-linearity, nodes, links and networks: “Intertextuality, Multivocality, Rhizome, Nonlinear model of the Network” (Landow, 2006).

Interactivity and its degrees (Giannetti, 2002; Silva, 2005), hypermedia and the possibility of “branching or performing presentations which respond to user actions, systems of prearranged words and pictures” according to Nelson (2003), transmedia logic (Jenkins, 2003; Scolari, 2013; Pratter, 2011; Dena, 2014), connectivity in a network environment (Siemens, 2006; Castells, 2001) or virtuality (Levy, 1999; Guizzi et al., 2020) offer a metamorphosis, one that is both technological and conceptual, for the narrative phenomenon.

The elements typified by narratology (Genette, 1980) spill over into a new conceptualization of the narrative that transcends circumscription for the representation of events by the narrator. The widespread use of smartphone applications is changing how users and creative professionals represent, experience and share everyday life (Marsha and Schleser, 2014). Space and place are redefined in the ubiquity and co-presence of smartphones. Alongside this, tools such as virtual and augmented reality, pervasive devices and haptic responses with a capacity to improve media experiences through senses in the user's skin (Israr et al., 2014) make it difficult to characterize networked digital narratives as a comprehensive, generic and encompassing phenomenon.

### 1.2.2. New formats, new ways of (story)telling

The outburst of stories and the pluralization of interpretations that Martín-Barbero (2008) invokes are now applicable to connected digital creativity. Contemporary storytellers have a whole new set of channels and tools at their disposal. Some of them have already been widely addressed by the international scientific community.

This is the case of the IF (Interactive Fiction), thanks to the work of authors such as Aarseth (2007), Murray (1999), Sloane (1991) or Montfort (2003) who managed to elevate the consideration of an object of study that, as Montfort (2003) remarks, “was for a long time, almost entirely neglected in academic discussion”.

Youtube is another example. In its long history (for a digital format), it has established itself as “the largest user-driven video content provider in the world” (Wattenhofer et al., 2012). In addition to storytelling, consuming, following and subscribing to other YouTubers, the creators of this community model comment, participate and produce (Berrocal et al., 2014).

Video games represent another one of the most traditional forms of digital narrative. From academia, influences and appropriations have been emphasized: Manovich (2005) highlights cinematography, Laurel (2014), dramaturgy, and Murray (1999) storytelling. However, some established researchers claim their independence from other disciplines “It should exist as an independent structure, because it cannot be reduced to any of the above”, Aarseth argues (2001), with a shared criterion with authors such as Juul (2003). Game Studies, as noted by Fernández-Vara (2019), have a long academic tradition, with prominent figures such as Huizinga (1955) or Piaget (1945).

Another formula that has been highlighted in recent years is the interactive documentary. Here, embodied interactivity is key, in the words of Gaudenzi (2009), “not only uses a digital support[...] but it also

demands some embodied interactivity from the user-participant (in other words a participation that is more than the mental act of interpretation)”.

Lastly, digital literature is worth noting. The definition offered by the Electronic Literature Organization defines it as “a work with an important literary aspect that takes advantage of the capabilities and contexts provided by the stand-alone or networked computer” (ELO, 2016). Hayles (2008) interprets it as “creative artworks that interrogate the histories, contexts, and production of literature, including as well the verbal art of literature proper”.

In this context of exponential proliferation and uncertainty in the realm of the connected digital narrative, our research proposal focuses on creation, placing authors at the core of the study and conferring a major role to the ways of telling described here.

### 1.3. Previous works

Digital storytelling is being approached from different perspectives in scientific literature. Beyond the conceptualization of the phenomenon in the connected digital world (Lugmayr et al., 2017), we observe a whole pragmatic line of real application of its advantages, as we observed in Casillo et al. (2016) and Casillo et al. (2016).

In addition, we find lines of conceptual development from different disciplines, such as business storytelling [Ramzy (2007), and Mañas-Viniegra (2017)]. There is also a consolidated ramification linked to media literacy and the use of storytelling to enhance learning, as we see in Yang and Wu (2012); Vu et al. (2019) and Scott (2019). This perspective has been consolidated in recent years with Dynamic Literacies and the explicit inclusion of storytelling as a form of literacy.

The study of the creative process of storytelling is much more limited. There are antecedents such as Pratter (2011) or Spurgeon (2015) that put the focus on creativity and participation from a holistic point of view. The differential of the research that we present here is, precisely, to focus on the adoption of the point of view of the authors of digital storytelling to know their dynamics and processes from their subjectivity. This perspective will allow us to describe the processes and techniques used in creative work, not from external analysis, but rather from the appreciations and considerations from creators' own experience and vision.

## 2. Methodology

The object of this research is to delve into the knowledge of networked digital narratives from the perspective of their creators, analysing new formats, authors and creative processes. More specifically, this study aims to:

1. Analyze convergence and divergence between formats that have emerged after the networked digital disruption
2. Understand the characteristics of different networked digital formats, and define their key features.
3. Determine the binomial author-user role in networked digital narratives.
4. Understand the creative processes conducted by their creators.

For this, and following a qualitative methodology, a series of in-depth filmed interviews were conducted, especially due to this recourse's ability to clarify the subjective human experience (Corbetta, 2007). The interviews focused on the authors' perspective, their creative work and on their thoughts regarding their own projects. Together with these interviews, and in order to understand the creative perspective, a participatory action-research within the framework of *Arts Based Research* (ABR) was implemented in a chained articulation (where the results of a technique are used in the application of the next one). The use of ABR fulfills a triple objective.

1. To verify the validity of gathered data during the in-depth interview phase related to creation.

2. To apply the knowledge acquired in the interviews and create a meta-reflection from the creation practice.
3. To add a differential perspective that generates new questions and reflections, providing the study with “very different ways of seeing, imagining, understanding, articulating, and inquiring, which leads to better questioning and more robust inquiring practices” (O'Donoghue, 2011).

To determine the sample, we followed some basic criteria. Interviews were conducted with creators that are known for their work as avant-garde narrators (awards and social impact) in Spain (as shown in Table 1).

### 2.1. Coding and data analysis procedures

The coding and analysis process for the 5 in-depth interviews followed the next steps: 1. Transcription. 2. Assignment of categories and sub-categories. 3. Data input on Atlas.ti. 4. Coding verification and consolidation in the program based on categorization and revision of relevance relative to the number of appearances. 5. Highlighting of significant phrases and paragraphs. 6. Construction of a conditional-causal concept map on the basis of the conceptualization. 7. Interpretation and analysis of the data obtained. Final coding is described on Table 2.

After the consolidation of the coding and the marking of sentences and paragraphs of interest, the following concept map was constructed (Figure 1) showing the relations and interactions between key concepts and highlights obtained.

The next research stage focuses on participatory action-research within the framework of Arts Based Research. To this end, a digital platform was created based on the connected digital narrative (meta-narrative), hosted in the domain [www.contadoresdelcaos.com](http://www.contadoresdelcaos.com). The platform was built using Klynt, an interactive storytelling editor that, in addition to enabling the hypermedia editing of materials, allows the generation of a conceptual scheme and real-time visualization of the interactions and relationships between sequences. The interactive hypermedia structure obtained at the end of the project is a virtual mirror of the concept map. Figure 2 shows the structure of the platform through the Klynt interface.

In order to systematize the creative process a research journal was employed. The journal combines image/video/hypermedia with textual comments. The annotations were collected on Klynt itself, and then transferred to Atlas.ti for systematization. In the annotations heading, the date, author of the comment and concept (based on coding) were

specified. In this case, significant sentences were highlighted based on the pre-established codebook. These were collected in a process that was synthesized for the purposes of this research, as reflected in Table 3.

In order to clarify the methodology followed and facilitate its understanding, Figure 3 is presented below, showing schematically the entire research process.

## 3. Results

After the research, we obtained a series of results in different key aspects of networked digital storytelling, which we list below.

### 3.1. The digital avant-garde narrative: processes of fusion and fission

Networked digital narratives' formats become less rigid and stable. From a creation viewpoint, we can observe a series of common characteristics in networked digital narratives that allow us to speak about fusion (convergence) processes. These commonalities are their relation to the Aristotelian canon, the nature of their code, or their cognitive processing, among others. Table 4 shows some of the common aspects extracted from the creator's statements.

Simultaneously, the network digital disruption has led to a pluralization of narrative acts, leading to an exponential multiplication of projects, formats and meta-media. These are fission processes that will sometimes lead to unique proposals that do not fit any of the already existing taxonomies of the *New Media*. Table 5 shows each proposal's unique characteristics, emphasizing the essential qualities of their idiosyncrasies:

Taking into account the results of research related to fusion processes, we are in a position to glimpse the creation of a total converging narrative work, a perfect equilibrium between immersion, interactivity and narrativity, surpassing real life in its narrative disposition and containing a synthesis of all the types of forms and contents (Ryan, 1999). However, as indicated by the fission processes themselves, this total work would be just one of the possible permutations of the narrative act.

### 3.2. Characteristics of networked digital formats

#### - Digital literature

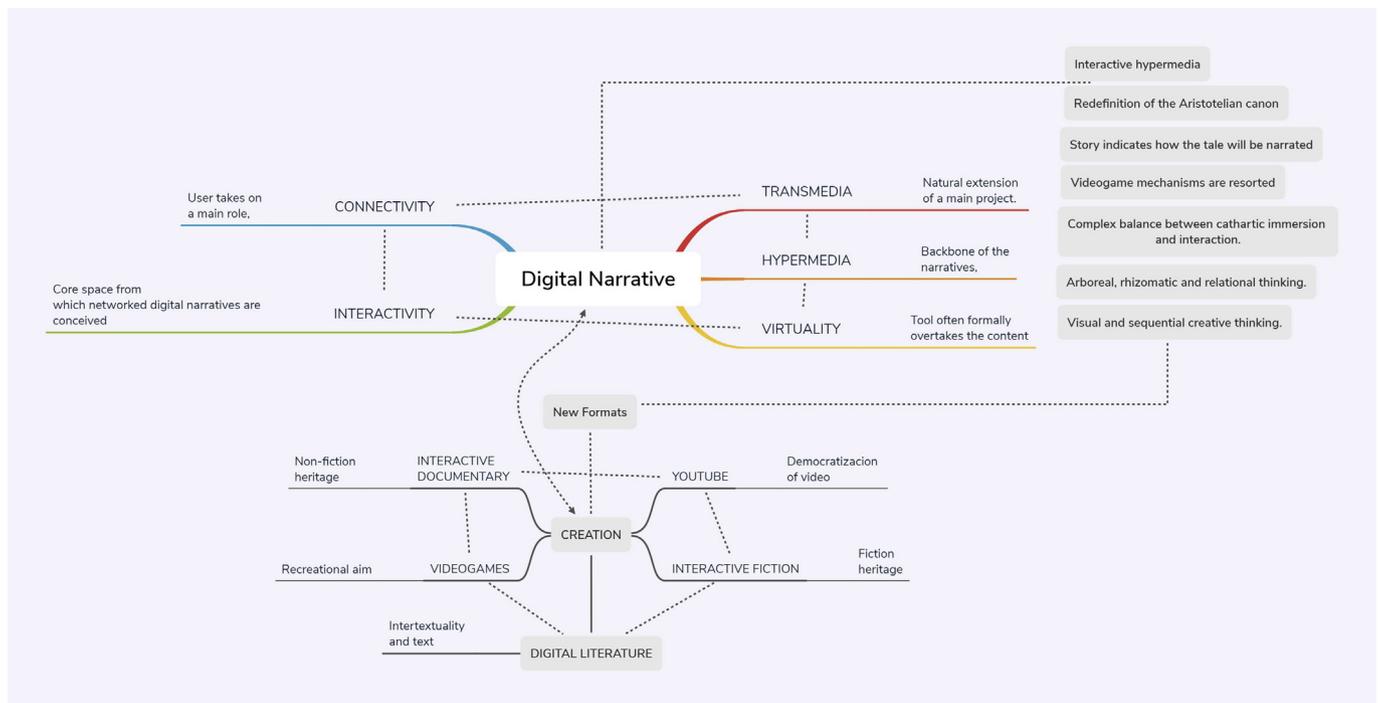
The comments by David G. Forés about his work “IPoe” from *Iclassics* (<http://iclassicscollection.com/en/project/ipoe1/>) reveal a series of characteristics that could be considered universal. In digital literature,

**Table 1.** Sample of networked digital narrative creators.

Name and company	Key creation	Year	Format	Impact/awards
David G. Forés iClassics Code: DF	Ipoe	2016 (update)	Digital literature	Publishing Innovation Award (PIA) “Editor's Choice” by Apple Inc. in iTunes AppStore. Top #1 in the sales ranking AppStore & Google Play in many countries.
Miriam Hernanz Lab RTVE Code: MH	El caso	2016	Interactive fiction	Cssdesignawards Lovie awards (LAB) VR awards (LAB) Porquet award (LAB)
Arturo Monedero Delirium Studios Code: AM	The deliriums of Von Sottendorf and his square mind	2015	Videogame	Best game AZPLAY Best console game National Industry Prize GAMESLAB The Public's Favourite National Industry Award GAMESLAB Indie Cade
Arnau Gifreu Come In Doc Code: AG	Come In Doc	2016	Interactive Documentary	Publication in MIT Open Documentary LAB IDFA doclab database Horizon Interactive Awards Gold winner Interactive media awards Best in class – education
Ana Lázaro Estalot La Morgue de Aracnophobia Code: AL	La Morgue de Aracnophobia	2014 - ...	Youtuber	29K in Youtube 14.2K TW Designer, Illustrator

**Table 2.** Interview content coding.

Main	Subcategories	
Digital Narrative	ND	
Author status	AU	
New idiosyncrasy of the user	US	
Creation	Participation	PT
	Formats	FMT
	YouTube	YT
	Interactive Documentary	DI
	Interactive fiction	FI
	Videogame	VJ
	Digital Literature	LD
Common elements between formats	FMC	
Differential elements between formats	FMD	
Digital potential employed in the creation process	PD	
	Interactivity	IT
	Transmedia	TM
	Hypermedia	HM
	Connectivity	CN
	Virtuality	VR
The narrative canon	CA	
Creative processes	PC	
Content	CO	
Form	FM	
Cognitive processes	PCO	



**Figure 1.** Conditional-causal matrix of results obtained (conceptual map).

the code precedes the alphabet, the screen (or new peripherals) substitutes paper and ink, the letter converges in multimedia, hypertext and interactivity. Technologically, there is a break with the traditional linearity and dramatic curvature. It emerges starting from the written word, establishing a direct and unbreakable relationship with intertextuality between digital codes, digitized codes and the original narrative.

**- Interactive fiction**

In “Corto interactivo de El Caso” (“Interactive short of El Caso newspaper”) (<http://lab.rtve.es/el-caso/>), a transmedia layer is added to the series created by Television Española, adding a tale in which the user takes on the role of a rookie journalist in his or her first day of work in the

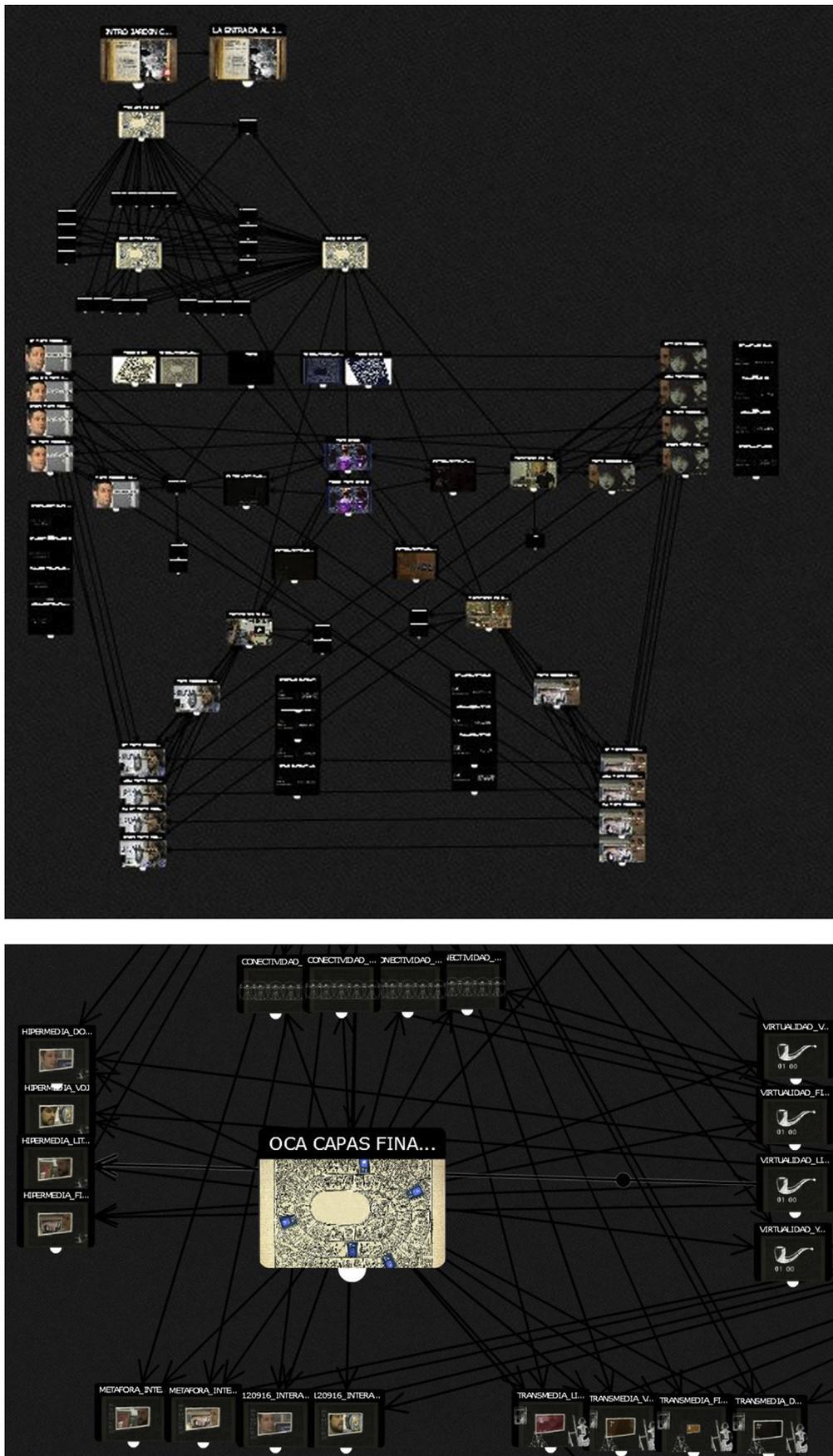
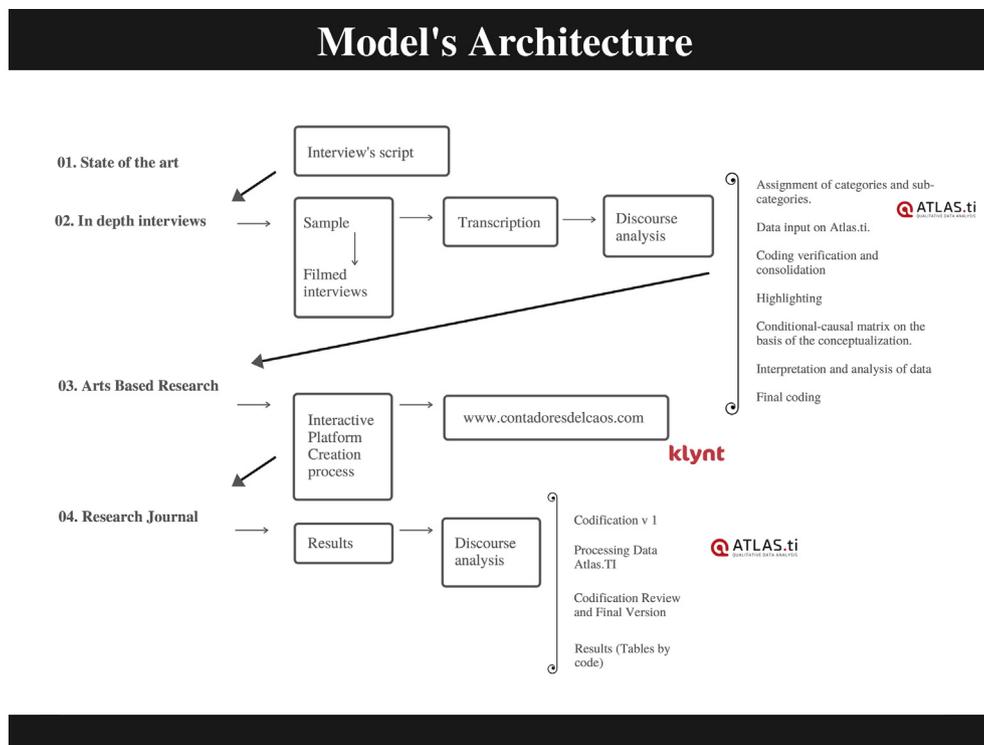


Figure 2. Project's internal architecture and interactive relationships (Klynt's interface).

**Table 3.** Research journal extracts cross-referenced with codes.

Main	Highlighted notes	Code
Author Status	The author is continuously thinking about how the user will act, and how his or her journey will be.	AU_IS. 120516. 1.
New idiosyncrasy of the user	Keeping the users in mind implies, besides thinking about them, working with them to improve the experience.	US_IS. 240616. 1.
Creation	Complexity of the construction of the dramatic fluidity without linearity	CR_IS. 200616. 1.
Formats	The formats' mimesis is postponed to a later phase due to time constraints.	FMT_IS. 300716. 1.
Common elements between formats	Double code: one binary and the one resulting from the meta coding of the combination of hypermedia and interactivity.	FMC_IS. 010716. 1.
Differential elements between formats	Each format maintains its idiosyncrasy within the meta-narrative.	FMD_IS. 280716. 1.
Digital potential employed in the creation process.	The 5 keys are not only mechanical or conceptual. They conceal a combination order with a clear creative potential linked to a communicative, dramatic and aesthetic component.	PD_IS. 030816. 1.
The narrative canon	Beginning, middle and end give way to a non-linear rhizomatic creation, without pre-established paths with cathartic purposes.	CA_IS. 200616. 1.
Creative processes	Trial-error method.	PC IS. 170516.1.
Content	Form and content are combined to reinforce the narrative purpose.	CO_IS. 200616. 1.
Form	Synaesthetic creation procedure.	FM_IS. 010716. 1.
Cognitive processes	Relational and arboreal thought for hypermedia interactive construction becomes valuable.	PCO_IS. 220516. 1.



**Figure 3.** Research process (Model's Architecture).

**Table 4.** Synergies in key aspects of networked digital narratives.

Regarding	Fusion
The canon	<ul style="list-style-type: none"> <li>• Redefinition of the Aristotelian canon in new dramatic tempos and rhythms.</li> </ul>
Digital potential	<ul style="list-style-type: none"> <li>• Interactive hypermedia.</li> </ul>
The content	<ul style="list-style-type: none"> <li>• It is the story what indicates how the tale will be narrated</li> </ul>
The form	<ul style="list-style-type: none"> <li>• Game mechanisms are resorted tofor storytelling.</li> <li>• Difficulty to find the balance between cathartic immersion and interaction.</li> </ul>
Cognitive processing	<ul style="list-style-type: none"> <li>• Arboreal, rhizomatic and relational thinking.</li> <li>• Visual and sequential creative thinking.</li> </ul>
Diffusion	<ul style="list-style-type: none"> <li>• In terms of impact, the <i>Mass media</i> still predominate (except in the case of videogames).</li> <li>• Their co-habitation is sought in order to increase the reach of the stories through transmedia vectors.</li> </ul>

**Table 5.** Main characteristics of the analysed formats.

Format	Defining characteristics	Registration code Atlas.ti
Digital literature	Intertextuality with literature Protagonism of text	DF_ID.03.
		DF_ID.04.
Interactive fiction	The tale is placed in the territory of fiction. Heritage (script, mise en scene, dramatic development) of television series and films.	MH_ID. 01
		MH_ID.04
Videogame	Creative freedom starting with the code. Container of Universes. Playability, mechanics and learning curves. Recreational aim.	AM_ID.01
		AM_ID.02
		AM_ID.03
		AM_ID.04
Interactive documentary	The narrative starts from the territory of non-fiction. Heritage from the documentary and link with the avant-garde (aesthetic-formal experimentation)	AG_ID.01
		AG_ID.03
YouTube	Democratization of the audiovisual creation-diffusion. Model of community (subscriptions, comments, likes, share)	AL_ID.02
		AL_ID.03

editorial office of “El Caso” newspaper. The experience is personalized using a subjective camera, with a script oriented towards immersion into the fictional world of the series, through a set of strategies. This model of interactivity could be catalogued as diegetic digital interactivity, in which intervention by the user is presented as a requisite for the development of the narrative discourse. Thus, is shaped as a decision-making process that culminate in alternative diegetic realities.

#### - Videogame

“Los Delirios de Von Sottendorf y su mente cuadrículada” (The deliriums of Von Sottendorf and his square mind) (<http://www.deliriumstudios.com/los-delirios-de-von-sottendorff-y-su-mente-cuadrículada/>) not only counts with references from films, dramaturgy and storytelling...it is also a great container and remixer of all of them. Together with the mise-en-scene, the arsenal of codes that the medium provides and the story, the third original dimension of the videogame should be noted: the mechanics and the playability. In the game, the protagonist's craziness (dramatic issue) is reflected on the mechanics through the introduction of an interactive grid that represents, in a denotative manner, the rooms in a mansion, and in a connotative manner, the disorganized mind of the Baron.

#### - Interactive documentary

- “Come/In/Doc” (<http://www.comeindoc.com/>) is placed within the category of the interactive metadocumentary. In it, the user occupies the main role in the presentation and structuration of the content. It has been designed according to the story and its aim, with a clear conscience of why the project is not linear. The topics addressed by Come/In/Doc frame a series of aspects around which the current interactive documentary orbits, such as new active subjectivities and the relocation of the user, collaborative aim, opening to participation and the extension of the project beyond its boundaries.

#### - YouTube

In the “Morgue de Aracnephobia” (= [www.youtube.com/watch?v5heOUKcArsk](http://www.youtube.com/watch?v5heOUKcArsk)), the audiovisual pieces are made by Aracne, who creates her own scripts and makes decisions on what is to be published. In the videos by Aracne, the author confirms the search for convergence with her followers through direct inquiry and discussion. Its relationship is consecrated through the tangible interaction in the shape of comments, likes and shares. Processes of collective intelligence (Lévy, 2004) and participative culture (Jenkins, 2008) are shaped. In the community culture proposed by YouTube, Aracne acquires a multiple role, in which besides telling a story, she consumes, follows and subscribes to other content creators, commenting, participating and creating thus new contents.

### 3.3. The 5 key features of networked digital formats

Despite working in different ways of expression and communication, the study reveals a consensus on those technological and conceptual qualities that are more determinant when creating a networked digital narrative. Simultaneously, they show a clear tendency towards superposition, complementarity and hybridization.

#### - Interactivity

The study demonstrates that despite the banalization undergone by the concept (Aparici and Silva, 2012), the communication between man and machine/software is the core space from which networked digital narratives are conceived. Thus, without the physical intervention of the user, the stories do not evolve, do not occur. Interactivity, more than the mechanical action, can incorporate emotional, dramatic, cathartic values and aims, such as in “The deliriums of Von Sottendorf and his square mind”. It also makes possible the creation of layers of depth and knowledge.

#### - Hypermedia

Research suggests that hypermedia compose the backbone of the narratives, defining its structure and form. The codes fuse and intertwine themselves with the ultimate aim of better telling the story. The fluidity of the narrative will highly depend on the structure of its inner cartography. The user's advances within the story are predefined, with the paths consolidating between the possible choices through interactivity.

#### - Transmedia

The creators recognize this key, referenced by García-Marín and Aparici (2020), Jenkins and Ford (2015) and Scolari (2013). Its implementation is produced as a natural extension of a main project. It usually starts with a main product from which different modalities are deployed. Full awareness and a strategic development of a transmedia project would require the individualized conception of each format from the start. Therefore, the design and the comprehensive transmedia execution for intermediate-scale projects, would significantly raise their costs, making them difficult to bear.

#### - Virtuality

Within digital mediation, virtuality is defined as a representation or creation based on binary codes with the interface, application and design as keys (Sherman and Craig, 2019). The interface and the hardware are very significant, as they delimit or expand the narrative experience from its construction. At present, the new wave of innovative devices, such as

the virtual reality devices or the re-activation of Augmented Reality offer revolutionary possibilities in terms of immersion, empathy and delving into the knowledge. The study, however, shows a certain distrust towards these devices, since the authors consider that the tool often formally overtakes the content, limiting the narratives and each format's own expressive qualities.

#### - Connectivity

The integration of connectivity in narratives causes a double mutation: the role of the user is reshaped, and the process of reception and use of the stories is altered. The user takes on a main role, being able to grow, enrich and extend the life of the stories, in the diegesis as well as in the real world. The challenge is to find formulas that can make the user feel as an active protagonist, thereby succeeding in making the user feel as the story being his or her own. Contemporary narrative structures offer the possibility of linking with elements that are external to the narrative, nodes that reside in non-human applications and that are activated to the discretion of the author thanks to technology. It would be a procedure analogous to the one presented by Siemens (2006) in the characterization of Connectivism as a learning theory (also in Teixeira and Martini, 2020).

### 3.4. Reshaping the relationship between the user and the author

The constancy of the vertical model of authorship is diluted, creating dynamic narrative pacts between users and creators according to the project aim. The status of the Author-User binomial changes, displaying in practice the notion of *Death of the author* by Barthes (1968). The user journey, the emotional path that the user will experience with the work, plays a major role in the design and construction of the tale. A tendency towards the increase of the demand for participation by the receiver is observed. At this juncture, the author must meet the aim for which the story is told, despite the fact that the user's behaviour is not predictable due to his/her random elections as well as to his/her variable degree of participation. Beyond the technical possibilities, authors raise questions about the need and aim integrating participation and co-creation in their works. At this point, discrepancies among creators arise, mainly related to the nature of their projects.

Different authors and the research journal coincide in the fact that the objective is to articulate a creative, collaborative community that is emotionally involved. Despite this implication, the author, more or less explicitly, maintains the control of the work, defining the architecture of the narration and its multi-variables through the code. The authors are still the ones who assign a specific role for the user in terms of participation. As it occurs with the *Mass Media*, the uni-personal authorship is generally substituted by multidisciplinary teams in charge of specific tasks in the project's development, with programmers and code developers attaining a primary role.

### 3.5. The creative processes

The *modus operandi* in the creative processes conducted by the authors are related to the heterogeneous use of the keys described in this article. They are not just heterogeneous within different authors and formats, but also in the creation of the projects developed by a single author. Their application is mainly based on the instinct of those responsible of the projects and their development teams, through the trial-error method. There is not a predefined roadmap, although the authors agree in affirming that know-how accumulates. This provides them with greater agility in the development of projects, in the overcoming of already-known problems, as well as in the establishment of protocols and processes that ease the creation, production and diffusion. Against the idea of chaos and heterogeneity, the notion of laboratory fits more precisely in the defining of the creative process in networked digital narratives. Trials and errors become thus consolidated as central procedures in the construction of stories, in shape and content.

A tendency is confirmed by the creators in the use of the story (the content) as the starting point to develop the form used for its communication, along with a distrust towards technological impositions.

The in-depth analysis of research shows a more complex relationship between form and content that points to a progressive approach between the two spheres. It was observed that authors develop the *how*, the way the story is told, not only as a conditioning element, but as a system of signs that contains signifiers that point towards meanings. The form is taken into consideration for content creation according to the objectives of the narrative. A division into different ramifications of the cathartic finality is perceived, making the objectives of the networked digital narrative more complex in nature. There is also a propensity, to a greater or lesser degree, towards the symbiosis of form and content with the ultimate aim of enhancing the objectives.

## 4. Discussion and conclusions

The objective of delving into the knowledge of networked digital narratives from the perspective of their creation has allowed us to verify their state, in a contemporary society that is characterized by liquidity (Bauman, 1999) and by the generalized mistrust in the meta-narratives of modernity (Lyotard, 1987). In the scope of New Media, we follow the works that are focused on the particular attributes of phenomena associated to networked digital narratives: language (Manovich, 2005), digital literature (Murray, 1999), digital textuality (Ryan, 2004), ergodic literature (Aarseth, 2007), drama in computers (Laurel, 2014), hypertext (Landow, 2006) or the transmedia narrative (Scolari, 2013; Dena, 2014), but maintaining the perspective of the creators in different digital formats as the main source of knowledge. Recently, Halverson (2018) addressed digital creation from the point of view of authorship but limiting his research to a single author who conducted his activity in multiple media platforms.

This study reveals that the classical conception of narrative has been surpassed and that there is a need to expand the corpus set forth by the narratology for the structural study of stories. We are in agreement with Ryan (2004) in that the narrative is not limited to the representation of past events by the narrator, and with the generalized notion pointed out by Clark et al. (2015) that the "Narrative exchange takes distinctive forms in the digital age". Our research demonstrates that we find ourselves facing a greater epistemological disruption: the digital narratives redefine the Aristotelian canon, since they are articulated on interactive hypermedia language. The linear cognitive processing gives way to rhizomatic, arboreal and relational reasoning, one in that the visual creative and sequential thinking gains importance against alphabetical-continuous thinking.

In relation to the features of the different networked digital formats, it was observed that there is an atomization occurring in the narratives. We have named them fusion and fission logics. Despite their generic coincidences, each modality shows a differential character that defines them as containers, as revealed by Montfort (2003) in relation to IF or Aarseth (2001), Juul (2003) and Fernández-Vara (2019) on videogames, initiating ad hoc epistemological research and frameworks for these areas. Thus, in the digital literature, we find intertextuality with regular literature. In interactive fiction, its hereditary nature with respect to the cinema and the television series. In the videogame, its entertaining aim, the playability, the mechanics and the learning curve. The non-fiction would be the guiding principle of the interactive documentary. And as for YouTube, we highlight the democratization of the video and the unique model of community through the parameters established by the software.

With respect to the principle of fusion, there is a series of keys for the creation of networked digital narratives. This is the case of interactivity, which is employed to provide digital inputs to the user after his or her participation, but also to provide cognitive and emotional responses and to offer layers of depth in the stories. Hypermedia also plays a great role, acting as the backbone of the stories, defining their structure and form,

coinciding with the approach proposed by Nelson (2003). Together with interactivity, it constitutes the substrate of the connected digital languages and its signs. Another of these keys is the transmedia, although its inception as a comprehensive strategy is far from the budget levels with which the creators interviewed work with, as it means high costs for their consecution. Another fundamental pillar is virtuality, which is commonly used through the interfaces, utilizing the screen as a peripheral element. Although this last element creates a certain mistrust towards the hardware that overtakes the content, in detriment of the full potential that could be harnessed in a vision like Laurel's (2014) using interfaces as metaphors that could "extend, amplify, and enrich our own capacities to think, feel, and act". And, lastly, connectivity, causing the redefinition of the user's role, altering thus the process of reception and consumption of stories. The narratives are linked to people and with spaces that are external to their own formats, in a procedure that is analogous to the Theory of learning of connectivism (Siemens, 2006), offering a path towards the open work. Although the focus of our study was placed on the creative practice, the taxonomy of these key features offers certain similarities with the transversal attributes of the digital narrative and the qualities of the creations in the New Media environment proposed by authors such as Scolari (2008) or Ryan (2004).

The data collected show us the new role of the user, as he or she, along with his or her experience (the user's journey), is placed in the middle of the creator's concerns. In line with what was pointed by Ocak (2014) in relation to the new media documentary, these new stories transform "the cultural form of watching a film". The opening towards the new active subjectivities implies a challenge that is very often transformed into frustration, since it is not easy to create live communities that are emotionally implicated and that empower the stories. In a more specific manner, it was verified that the author still maintains power over the narrative, preconceiving the experiences and predetermining user's actions, defining from the basis of the code the boundaries and possible developments of the narrative action.

With all these potentialities, creators do not have preestablished guidelines and follow the procedure of trial and error as their *modus operandi*. The validity of their creations is agreed upon with the user through narrative pacts, with the particularity of dynamism and the multi-shaped character of the creator-narrative-user agreement. At this point, we find ourselves in a context that is similar to the *perpetual beta* defined by O'Reilly (2005) for open source.

The search for the symbiosis between form and content is used to enhance not only the story, but the aim for which it is told. The catharsis has been imbued with multiple permutations. We agree in this perspective with the reflection on the multivariant narratives by Ryan (2004).

We conclude that the continuous and constant emergence of new cultural and social demands, and the technological alterations, place us in "The explosion of storytelling and the pluralization of narrative acts". It is impossible to address the narrative in the new media with the traditional parameters of narratology. In line with what was stipulated by Lashley et al. (2017), we hereby determine that there are many manifestations of the digital narrative. In addition, they do not behave as a unique and stable phenomenon, so that an *ad infinitum* review of the conclusions established in this work could be hoped for.

With all the above, this investigation allows us to form the basis of a line of research based on the authors, moving away from the most traditional external analytical reviews to know the phenomenon from the inside; from first-hand knowledge acquired from praxis and experience. Thus, the conclusions presented here on digital keys, the author-user relationship, new media forms and the creative process are obtained from real creators, and contrasted through the ABR and the construction of the metanarrative platform (available at <http://www.contadoresdelcaos.com/>).

The most evident constraint of the research comes from the limitation of the sample, both in the numerical aspect (the number of people interviewed) and in the modal aspect, as new formats of great social consolidation such as narratives through Instagram or Tik-Tok are left out

of the study. At the same time, the interpretation of the creative process developed in the ABR through the research journal is limited. It would be necessary to consider more complex options in order to record the knowledge obtained from the application of the arts in research.

Finally, we dare to propose some future lines of research: the inclusion of a greater variety of narrative modalities in the corpus (Podcast, Micro-poetry in social media, *twovel*, Digital art, cyberjournalism, Instagram stories, tik-tok...), research of networked digital language (hypermedia, interactive) in semiotic terms, delving in line with O'Halloran et al. (2011) or Kress and Van Leeuwen (2006), the comparative analysis of users from different nationalities, and lastly the development of the narrative potentials of this language through creative labour. The benefits of this kind of practice have already been sketched out by studies conducted by Smeda et al. (2014) and Yang and Wu (2012), and put into practice in the present study in the platform Contadores del Caos (Storytellers of Chaos; <http://www.contadoresdelcaos.com/>). This last point is somewhat unusual in academic spheres, but it is indispensable to reach the true knowledge on networked digital narratives.

## Declarations

### Author contribution statement

M. Fandos-Igado: Contributed reagents, materials, analysis tools or data; Wrote the paper.

I. Sanchez-Lopez: Conceived and designed the experiments; Analyzed and interpreted the data.

A. Pérez-Rodríguez: Performed the experiments.

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### Competing interest statement

The authors declare no conflict of interest.

### Additional information

No additional information is available for this paper.

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