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# Visualisations and narratives in digital media: An Introduction

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## Abstract

The digital media have undergone an unprecedented transformation in recent years by exploiting the combined communicative potential of interaction and visualisation, generating, in this way, new narrative forms and journalistic stories. But this is not something that can be analysed in isolation. Understanding the digital media requires addressing the study of interactive texts and the platforms of the digital ecosystem from different perspectives.

The digital media today have highly permeable boundaries, the guidelines that define them being subject to constant modification: their texts are dynamic and constantly changing, their systems operate, thanks to artificial intelligence, as just another actor that analyses, collects and manages information. The space separating senders and receivers of messages has become fuzzy and interwoven. For this reason, the study of digital journalism has to assume this unremitting transformation as simply one more element in the debate about the media, and accept it as a characteristic of the digital culture that defines the field of communication.

## Keywords

Digital journalism, visualisations, interactive narratives, SEO, journalism, journalistic innovation.

## Título

**Visualizaciones y narrativas en los medios digitales: presentación.**

## Resumen

*En los últimos años los medios digitales han vivido una transformación sin precedentes al vincular el potencial comunicativo de la interacción y la visualización. Se han generado, con ello, nuevas formas narrativas y relatos periodísticos. Pero no se trata de un aspecto que pueda analizarse de forma aislada. La comprensión del medio digital exige abordar el estudio de los textos interactivos, el medio digital y su ecosistema desde distintas perspectivas.*

*El medio digital muestra una gran permeabilidad en sus fronteras, modifica constantemente las pautas que lo definen: los textos resultan dinámicos y mutables, los sistemas actúan, por medio de la inteligencia artificial, como un actor más que analiza, recoge y gestiona información. El espacio entre emisores y receptores en muchas ocasiones se entremezcla. Es por ello que la investigación del periodismo digital asume la transformación constante como un elemento más de debate sobre los medios, y la acepta como una característica de la cultura digital que define el ámbito de la comunicación.*

## Palabras clave

*Ciberperiodismo, visualizaciones, narrativas interactivas, SEO, periodismo, innovación periodística.*

## 1. Introduction

The digital media have undergone an unprecedented transformation in recent years by exploiting the combined communicative potential of interaction and visualisation (i.e. infographics and other formats), generating, in this way, new narrative forms and journalistic stories. But this is not something that can be analysed in isolation. As the research carried out over the last three years in the framework of the project *Interactive storytelling and digital visibility in interactive documentary and structured journalism* (funded by the Spanish Ministry of Science, Innovation and Universities – RTI2018-095714-B-C21, MICINN/ERDF) shows, understanding the digital media requires addressing the study of interactive texts and the platforms of the digital ecosystem from different perspectives.

Conducting this project has required a broad vision of the complexity of the media of contemporary communication, in which, as we have often found ourselves verifying, the lines between what have traditionally been separate areas and functions have become significantly blurred. The digital media today have highly permeable boundaries, the guidelines that define them being subject to constant modification: their texts are dynamic and constantly changing, their systems operate, thanks to artificial intelligence, as just another actor that analyses, collects and manages information. The space between senders and receivers of messages has become fuzzy and interwoven. For this reason, the study of digital journalism has to assume this unremitting transformation as simply one more element in the debate about the media, and accept it as a characteristic of the digital culture that defines the field of communication.

The monograph we present here brings together some of the results obtained from the studies carried out as part of this research project. It seeks to shed light on the “changes in communication patterns, social relations, collective and individual behaviour associated with the digitisation of society and culture”, the main directive of the research challenge that it specifically addresses (Challenge number 6 – “Social sciences and humanities and science with and for society”).

The chapters of this monograph include contributions that help understand how changes in our news consumption habits have led to the transformation of the media and how these changes in the media have, in turn, modified the ways in which users and audiences interact with them and with their content. The observations recorded while undertaking case studies, the development of analytical tools, and the exploration of experimental methodologies allow us to trace a broad panorama of new narratives in the digital media.

The first two chapters design and build analytical tools. Their authors have turned their attention to specific aspects of digital communication – namely interactivity and content curation – and have developed research methodologies for their in-depth analysis.

It is widely accepted that the digital media can be distinguished from the traditional media primarily in terms of the interactivity they offer. The centrality of interaction is such that it is a fundamental determinant of the development of digital products, the provision of access to information and the creation of meaning in reading. Interactivity has established itself as an indispensable concept for understanding a medium characterised by the constant exchange of inputs and outputs between the agents and actors that participate in it. These are exchanges that in themselves serve to define the medium: information that is stored, processed, and interacted with, and procedures that feed into each other to provide a system that allows the user to experience and participate in the information and to be part of it.

Santos, Lopezosa, and Codina design a protocol, in **chapter 2**, for analysing interactivity in the digital press, focusing their study on aspects related to the user experience and their options for interaction with the content that the news media offer. Comparative analyses serve to test and validate a methodological tool that makes it possible to observe the relationship that the medium seeks to forge with its users, the possibilities the audience itself has of generating materials, the community's resources, the relationship established between the users and, finally, the possibilities for personalising content. The definitions provided of each parameter, combined with the choice of examples of good practices, facilitate the adoption of the tool and ensure its good use for future research.

If interactivity is a foundational element of digital journalism, the practice of content curation in the media can be considered an activity still in its implementation phase and one that finds itself in an incipient stage of development. It responds to two joint needs detected by the media: the professional filtering and selection of content, on the one hand, and the personalisation of information, on the other. In a context characterised by the exponential growth of digital content, content curation can be considered the professionalisation of the activity of selecting the most relevant content for a given audience, sharing it with that audience in the best way possible, and endowing it with added value.

Guallar, Pedraza-Jiménez, and Pérez-Montoro present the Curation Analysis System or CAS, a parameterised method for analysing media content curation in **chapter 3**. The system is based around a series of parameters and indicators that allow the two distinct dimensions of content curation to be assessed: those related to curation and those concerning the content itself. For each parameter included in the CAS, the authors offer a definition, a detailed explanation of its meaning, the procedure to be followed for its correct application, and examples of good practices extracted from the newsletters of the digital media in different countries.

The CAS is the first system of its kind to be proposed in the academic literature for the evaluation of content curation in digital media. The system does much more than simply describe this process of curation, as it also enables the analyst to identify the specific components of journalistic curatorial practice, to undertake assessments of quality, and to create derived products, including, for example, rankings and comparative studies.

One of the main challenges facing the news media is getting audiences to access their content. This issue, which might appear trivial from the perspective of analogue journalism, is fundamental in the digital sphere. How can end users be guaranteed access to the most relevant information for them in an environment characterised by the hyper-saturation of information and this in a context in which the virtual immateriality of the digital world makes the visibility of texts and messages even more difficult? Two actors acquire particular relevance here: first, search engines and their ability to select and ascertain the results that best suit the needs of users and, second, SEO positioning strategies, the actions carried out by the media to give visibility to their content and to ensure this content finds its potential user.

In **chapter 4**, Escandell-Poveda, Iglesias-García, and Papi-Gálvez explore the historical evolution of search engines in seeking to understand the dominant role that they play in today's digital ecosystem. Clearly, the development of the digital media, the emergence of the Internet and the subsequent exponential growth of the World Wide Web brought with them the intrinsic need for systems that might facilitate the management, filtering and retrieval of information and content. Search engines quickly became the tools that linked indexes, web pages and multimedia content with user needs, as they established themselves as the main interface and gateway to digital information. As the authors conclude, learning about the origins and gestation of search engines allows us to understand how web visibility and audience attraction have evolved, establishing themselves today as essential qualities for any medium that wishes to stand out in the ocean of information and resources that the web has become over the decades that make up its history.

Indeed, the need for web visibility has meant that the digital news media are obliged to optimise their search engine performance, given that a large part of the traffic received by the online media comes from the searches that users make with these tools, with Google playing a dominant role here. It is for this reason that, for more than ten years, the news media have begun to implement positioning strategies and practices, known as SEO or actions of search engine optimisation, a set of techniques and procedures applied to websites that helps increase their chances of appearing among the main search results and, with it, of having greater visibility and attracting more readers.

However, SEO strategies differ from one news media outlet to another. Not all the premises of SEO are equally useful for all media, in all environments and areas, nor are they common to all types of users. In **chapter 5**, Lopezosa, Trillo-Domínguez, Cabrera, and Codina present an example of the implementation of SEO practices, in this case as carried out by the *Grupo Joly*, a leading press publishing house in Andalusia, on the *Diario de Sevilla*, its flagship newspaper.

The study confirms how SEO has gone from being the specialised task of computer technicians and engineers to occupy a central position in the process of preparing and labelling journalistic content. It also shows how the quantitative concerns – that is, of achieving greater visibility than the competition – have undergone a qualitative reorientation. In this

respect, SEO practices have had a significant impact both on journalists' work guidelines and on the format of the information itself. In short, SEO has become a strategic factor for the transformation of companies, guaranteeing their survival in the digital ecosystem. The good results obtained by the *Diario de Sevilla* allow lessons to be learnt about the different roles that SEO specialists and journalists can adopt to ensure the optimum implementation of SEO guidelines without these being allowed to affect the quality of the newspaper's content.

The processes of audience participation facilitated by social networks and the digital ecosystem as a whole have allowed the development of works of communication and documentation that are characterised by their aim to generate social impact. The *webdoc* has found in its exploitation of transmedia strategies the context in which to propose and experiment with new forms of horizontal communication. In these works, presented by Freixa, Soler-Adillon, and Sora in **chapter 6**, the interrelationship between the virtual and the local intersects and feeds back into each other.

Clearly, the online interactive documentary has facilitated the promotion of projects in which participation and interaction between all those involved is essential: authors, community and audience. These are works designed to generate shared spaces for the documentation and exchange of stories which, thanks to the projects, become acts of collective memory for the communities with which they work. The projects serve to activate whole communities via the social networks, the role of which is critical for their development. The three examples analysed in the study each use transmedia strategies in their own unique fashion to organise and establish communication and to channel the contribution of their content, an essential element for the creation and success of the three projects.

Structured journalism has highlighted the importance of the media archive and the need to improve the archiving of information in newsrooms in order to exploit its potential for reuse in the creation of future content. Similarly, media archives and the persistence of citizen stories play an important role in the interactive documentary. The critical reading and the appropriation of the archive become key elements in the constitution of the stories that each individual needs to generate their own life narratives.

The digitisation of traditional media allows us to access once more those analogue audiovisual materials that had become invisible because of their technological obsolescence. Trawling through the archives – both public and private or personal – facilitates critical inquiry. What is shown, what is deemed worth recording, the methods used to do so and the stories themselves are reactivated and enter into dialogue with the gaze and perception of the present day.

In **chapter 7**, Obradors explores different methodologies of *art-practice-as-research* as a source of knowledge. Her work focuses on the family album, which she removes from its private sphere to convert into audiovisual media. As the author stresses – in keeping with the

UNESCO recommendation – amateur audiovisual records and family home films need to be protected and conserved because they form part of our collective cultural heritage. Indeed, it is thanks to them that we can restore part of our history, these records serving as a testimony to a particular age and its customs.

Family albums, be they in the form of home cinema or video recordings, despite an apparent uniformity, can be differentiated according to the expertise of their authors, reflecting the varying degrees of amateurism of the filmmaker. The editing of the film can be considered a fundamental differential, an indication that the author seeks to intervene not only in the recording of events but also in the construction of their narrative. The narrative consciousness of these amateur works means they can be assimilated with other formats of social and historical documents found in public archives. Yet, the editing of these films is also one of the elements that leads us to examine afresh some of the attributes associated with personal archives, that is, their stamp of verisimilitude and authenticity, which are now called into question.

Indeed, the credibility and veracity of multimedia images and journalistic messages has become a major research topic in recent years. Despite being a problem that has been associated with the news media since their very origins, the emergence of the phenomenon of media disinformation and fake news has done much to disrupt the information ecosystem. The infinite possibilities for manipulation afforded by digital technologies oblige those involved in information processes to establish mechanisms that can validate and verify their sources and content. In **chapter 8** of this monograph, Vállez and Boté introduce us to the concept of *deepfakes*, the modification of audiovisual content to generate false content which, to all intents and purposes, appears to be true. *Deepfakes* require the combination of artificial intelligence technologies with the manipulation of image, sound and video in their efforts to mislead, and are typified by the way in which they present content in a decontextualized manner in terms of form, place and time.

In their study, the authors present the characteristics of these synthetic media technologies and their potential for poisoning the work of the news media, and they identify the resources that have been developed to combat them. They also examine the concerns that their existence raises both in relation to the degree of tolerance shown by audiences for these products depending on the uses to which they are put – that is, for entertainment, in film production, or for information purposes – and in relation to other aspects, including respect for the privacy of third parties and their ability to manipulate. As the authors warn, it is becoming increasingly necessary for steps to be taken “to ensure that in all areas, not only in the academic arena and schools, that people are made aware of the need to prevent the development and use of *deepfakes*” and they insist that “digital and media literacy campaigns are now more essential than ever in our rapidly changing digital world”.

The research on digital narratives and visualisations undertaken in 2019 within the framework of the research project *Interactive storytelling and digital visibility in interactive documentary and structured journalism* was heavily conditioned by the outbreak of the Covid-19 virus at the end of 2019 and the declaration of the global pandemic in March 2020. Many of the studies initiated had to be adapted to the new scenario, while others had to be put on hold. However, the possibility of monitoring and analysing the impact of the pandemic on the news media appeared as a pressing research opportunity.

The results of this research effort have already been presented at a number of conferences and published in academic journals (Freixa & Redondo; 2022; Freixa, Pérez-Montoro, Guallar, & Codina, 2021; Freixa & Redondo, 2021; Lopezosa et al., 2021; Pérez-Montoro, 2021; Váñez & Pérez-Montoro, 2020). To round off this monograph, in **chapter 9**, we wanted to incorporate the in-depth review that Pérez-Montoro has undertaken of the visualisations that the main news media employed during the early months of the pandemic and which serve as a good demonstration of their enormous communicative potential.

The great uncertainty and confusion generated by the Covid-19 pandemic, as well as the urgent need to provide the population with accurate, readily comprehensible information about the events that were unfolding, led the news media, governments and medical institutions to seek out the best way to transmit complex data to citizens. Once more, data visualisations allowed the creation of effective visual narratives that could be disseminated massively on social networks and which facilitated the establishment of an audiovisual narrative of the pandemic. The combination of image and graphics made the number of deaths and the ratios of infected cases by age and gender groups intelligible, they highlighted the effectiveness of vaccines and permitted transnational comparisons.

We wish to end this preface by thanking all the researchers who have participated in the project *Interactive storytelling and digital visibility in interactive documentary and structured journalism* for ensuring that, despite the outbreak of the Covid-19 pandemic, we were able to meet all our research targets, as the work in this monograph bears witness.

We believe that this monograph is also a way of boosting the social impact of the research carried out, making our results available to a wider audience thanks to its distribution via an open access licence. While some of the results have been communicated in academic publications in the form of journal articles or papers delivered at conferences, we believe that the synthesis presented in this format will make our results much more accessible to audiences that are not only academic, but which also comprise professionals, decision makers and, in general, any citizen interested in the questions we pose.

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