When Documentaries Meet New Media:

Interactive Documentary Projects as Real-Time Engagement

and Co-Creation Practices in China and the West

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Abstract

New media and digital technologies open up numerous possibilities to document different versions of reality, which makes it essential to examine how they transform the logic behind the creation and production of documentaries in digital cultures. The goal of this study is to investigate the integration between the traditional documentary and new media: the interactive documentary, in the context of the different sociocultural and technological environments of China and the West. Accordingly, a comparative study on the evolution and integration of these two fields was carried out. The documentary genre brings with it a method of classification and various modes of representing reality, while new media provide new approaches to interactivity as well as the production and distribution of interactive documentaries. In this context, the study examines the differences and characteristics of interactive documentaries in China and the West. Interactive documentaries grow and change as a continuously evolving system, engaging the roles of the author and the user, such that their roles are mixed for better co-expression and the reshaping of their shared environment. In addition, an analytical approach based on the types of interactivity was adopted to explore this new form of documentary both to deduce how the stories about our shared world can be told and to understand the impact of interactive documentaries on the construction of our versions of the reality as well as our role in it.

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Introduction

More than a century after the advent of cinema in 1895, as filmmakers looked for new approaches to deal with reality and tell their versions of it, a dramatic shift took place in the documentary genre.

Digital code and the progress of Web 2.0 have questioned the basis for new innovations in the documentary production process and the way in which versions of the events occurring in our world can be documented. How would the interactivity of the entire creation process and the distribution affect the form of documentaries and the process of their production? How would digital interactions and new media implement new ways of representing several perspectives on reality?

In fact, the fascination of the documentary form lies not in its attempts at depicting the one version of reality in which the director is interested but instead, in the fact that the directors can employ various ways to interact with it, such as negotiating with different versions of reality through recording and editing, both of which allow for newer approaches to thinking and thus, influence the view on reality itself. As Grierson described, the documentary is "a creative treatment of actuality" in itself and it does not place much focus on what reality is but rather, on the ways in which it engages with us and the ways we build our world (Rotha, 1952, p. 70). These different ways make our comprehension of reality a dynamic and ever-changing perspective that offers numerous variations and potential opportunities to Grierson's definition.

Moreover, as Nichols (2017) suggested, the documentary focuses on telling stories of our shared world (p. 10). So, what happens when the former audience becomes the agent (users, co-creators, contributors, participants) in this process? The documentary can unfold through interactions with its users, who are potentially involved in the co-creation of the content of the project. In this position, the user plays a crucial role in the production process. This means that the user's version of reality is being applied to storytelling in the documentary and that the role of the user has taken on a new twist. In the context of new media, a new dynamic relationship has emerged between the documentary, the author (filmmaker) and the user.

If we take up Marshall McLuhan's (1994) argument that media is not neutral, in the sense that it provides a specific type of information structure that builds the final documentary project and that the users are placed in certain roles, then moving to the online digitised society could have some cultural, political, economic and aesthetic implications. Specifically, the study in this thesis is concerned with the shifts that are visible in interactive documentaries, a particular type of digital media.

Scope of the Research

The goal of this thesis is to observe the progress of the integration between two separate fields, the dynamic development of documentary types and forms and the advancement of digital technologies and new media, as well as their active growth and the cooperation between the different media.

Despite the fact that documentaries started long before the arrival of new media, these two fields have now moved to an inspiring area of convergence. With the technology and infrastructure of the Internet, they were brought together in such a way that information, navigation and interaction between users are more accessible than ever before. All these have resulted in the appearance of new documentary forms and the production of new logic, such as web documentaries, Virtual Reality (VR) documentaries and vertical screen documentaries.

Moreover, because of the accelerating implementation of 5G broadband, the advancement of Web 2.0 and the growing use of mobile devices over the previous decade, the Internet has begun to take over as a virtual production platform for documentary filmmakers. A smartphone enables the user to not only access information while on the go but also send images, videos and texts at any time from wherever the user is. Documentaries are no longer produced only by specialists or professional groups; their content can also be created anywhere by a user who is not especially skilled. Many individuals think of new media as an alternative to cinema and video in this accessible online cultural and digital environment. To date, video and cinema are considered to be the traditional media of documentary production. Nevertheless, new media technologies and platforms push the author (filmmaker) to explore with interactivity, shifting documentary forms from linear to non-linear, from director-produced to co-created and from cinema-based to new media-based. This is a hybrid form that has emerged in the context of new media. In this research, this hybrid form will be referred to as the interactive documentary project.

As with any emerging form, the absence of clear definitions and classifications will confuse our understanding of this form and also make it particularly difficult to map this field. Terms such as new media documentary, digital/web documentary, VR/ Artificial intelligence (AI) documentary, micro-documentary, transmedia/multimedia documentary, cross-platform documentary and interactive documentary are always used without their distinctions being clearly understood. Looking more closely at these terms would reveal that the forms and content they encompass are distinct from one another as they differ in terms of interactivity, user engagement and the logic of the narrative designed by the authors. The study attempts to depict this new form – the interactive documentary – within its blurred and perpetually changing contexts.

In this study, interactive documentaries are not seen as static finite products but as continuously evolving systems that present different versions of reality within fluid contexts. While the purpose of the documentary has changed from representing reality to representing how

reality is negotiated (Bruzzi, 2006, p. 4), interactive documentary projects go even further: the negotiation process in such documentaries represents that the user is directly involved in building the depicted world. Interactive documentary projects are complicated, with transformative and cultural influences. The user is considered to be a part of the project – not just externally but also internally. Authors, interactive documentary projects and users are all interconnected and interdependent in such projects.

This author-project-user relationship generates a new dimension of the documentary genre. This is at the heart of interactive documentary projects; the bringing together of dialogic relationships and engaging with different types of interactivity. The projects are concerned with different levels of user engagement and the social meanings and values that emerge in the interactivity of the project. Being participants in the dynamic relationship established between audio-visual documentary and digital interactivity paves the way for an opportunity to see whether this integration will be achieved and whether this emerging form will be fully consolidated and developed. The convergence between audio-visuals and new media has been studied by several scholars, with the important questions being how far it can progress and what modes of interaction are applied during such a convergence.

The focus of this study is limited to examining projects involving interactive non-fiction documentaries in China and the West. These interactive documentary projects demonstrate the authors and the users' understanding of the reality of their world, where at least one approach to interacting with the project is through non-linear navigation (the user must make choices to progress through the project). Moreover, all of these projects are located on the Internet, including mobile Internet.

Figure 1

Scope of the Research
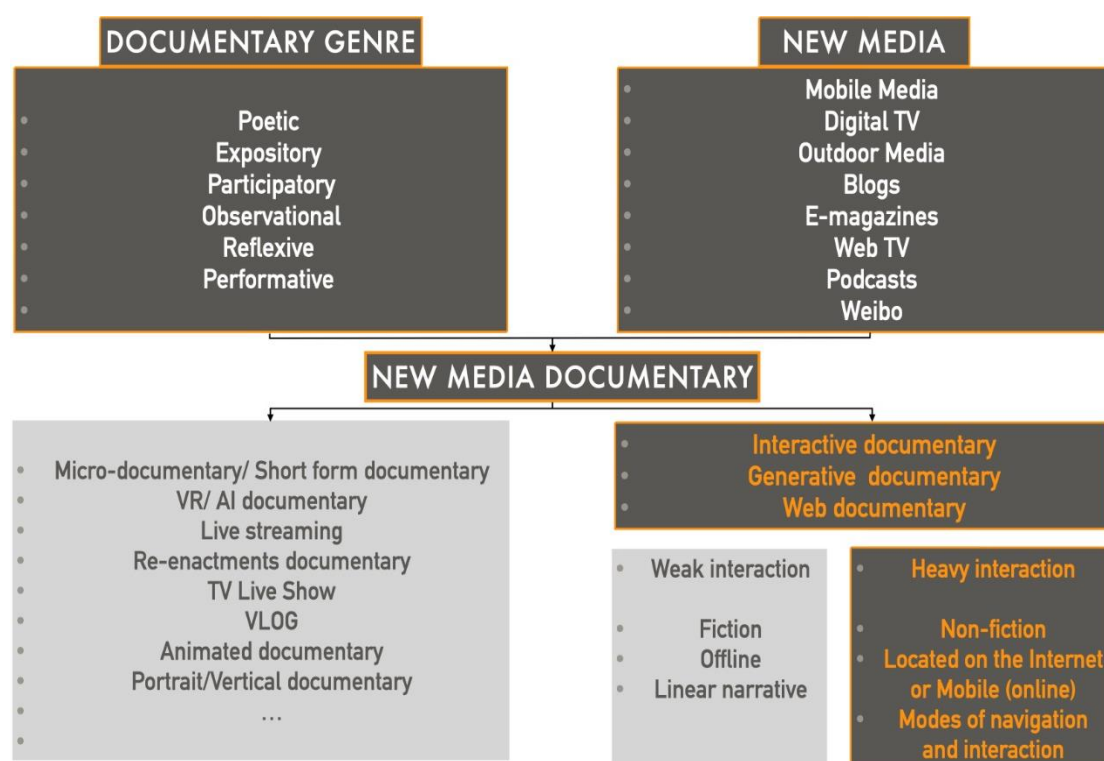
Objectives

The central purpose of the thesis is to examine the current state of the development of interactive documentary projects in China and the West. It argues for the adoption of an analytical approach based on the types of interactivity for this new form of documentary, both for exploring existing Chinese and Western projects and for providing insights into their production and design.

Interactive documentary projects are not simple evolutions of traditional linear documentaries through new media technology (Gaudenzi, 2013, p. 20; Gifreu-Castells, 2011, p. 381). The aim of this form is to allow the user to directly explore and participate in building the depicted world that is now available to be co-created; thus, the interactive documentary project brings the user into a dialogic relationship, where the user influences the project through different levels of engagement. For example, with selective interactivity, the current approaches involve a gradual abandonment of linear storytelling in favour of more branching scenarios, where users can choose which path to take on the journey and travel to different endpoints. Thus, the different types of interactivity adopted by the Chinese and Western interactive documentary projects are examined to deduce how the stories about our shared world can be told and how a new approach to representing reality can be implemented based on different sociocultural and political contexts.

From a theoretical viewpoint, the study aims to focus on the substantial impact arising from user-generated content and cultural communication projects, particularly those that are of an informative documentary nature, with different types of interactivity. Furthermore, utilising the opportunities provided by Internet technologies, the proposal for a theoretical study about a different type of interactivity that is aimed at telling stories characterised by an increasing level of interaction with the user is planned.

The overall goal of this thesis is to analyse the development landscape and characteristics of this hybrid documentary form that has emerged – the interactive documentary– based on the different sociocultural and technological contexts of China and the West and to discuss the classification, concepts and types of interactivity, which then leads us to examine how we can make documentaries, what are the appropriate forms of interactivity to adopt in different cultural contexts and where they might go in the future.

In addition, the multi-disciplinary nature of interactive documentary projects gives rise to a dialogue between thinking and making, with the idea of building the infrastructure (types of interactivity, navigation systems, production and distribution platforms, reception devices) for this form of documentary. This new author-project-user dynamic relationship brings a broader implication to the project, which includes its contributions to the media ecosystem of China and the West and the associated consequences for the related creative industries.

Methodology

The main approach of the thesis is built on a comparative study of the evolution and integration of the two audio-visual fields of traditional documentary and new media within the cultural and social contexts of China and the West. The main theoretical and practical aspects of the convergence between these two fields (Table 1 and Table 2) are analysed and explored with the analysis of theoretical literature and the study of practical projects in these two fields, which forms the theoretical basis of the central studies.

In terms of the documentary genre, based on the different historical evolutions of Chinese and Western traditional documentaries, the analysis focuses on the works of certain well-known authors, including Western authors such as Grierson and Hardy (1971), Renov (1993) and Nichols (1991, 1994) and Chinese authors such as Fang (2003), Shan (2001, 2005), He (2005) and Zhang, T. (2000, 2018, 2020). Important contributions by other authors are also consulted, including those by Barnouw (1993), Bruzzi (2006), Winston (2019), Ren (1997) and Ouyang (2004). The main focus here is placed on a mix of four Chinese and Western authors – Nichols, Renov, Suliu and Tongdao – as they categorise different modes and types of traditional documentaries that provide a foundation for comparing the different modes of interaction in the interactive documentary projects later on. Furthermore, despite the complexities in arriving at a classification of documentaries, their classifications are widely recognised. The examination of Chinese and Western traditional documentaries provides us with a better understanding and analysis of the approaches to filming and production as well as the classifications and historical developments of Chinese and Western documentaries. As a result, the differences that exist in terms of types and modes of representation between Chinese and Western traditional documentaries can be outlined.

The analysis of new media relies on the theoretical discourse on new media, media integration and new media technologies and platforms in the context of different media environments in China and the West. The Western and Chinese authors included in the focus of the analysis are McLuhan (1994), Kittler (1999), Manovich (2002, 2013), Kuang (2014, 2018), Qi (2019, 2020), Huang (2020a, 2020b) and Tang (2020). The interactive video production platforms and software from the West and China are particularly highlighted, such as the Interactive Video Platform (IVP) and IVP plug-in (launched by iQIYI), the XingTu platform (published by Tencent Video), the Youku Interactive Content Platform (released by Youku) from China and Klynt, Korsakow and RacontR from the West. Furthermore, interactive projects collected through different Internet platforms are examined, which include projects dealing with mobile communication and interactive technologies, such as *"AI Xiaoming talks about the Two Sessions"* (2019). They are of great help in analysing the existing projects that involve interactions pertaining to location, user-generated content and choice-making.

By integrating documentaries into a new media environment, a new form of documentary has emerged, which is equipped with the feature of interaction. Thus, the analysis is based on

the definition and classification of the existing interactive documentary projects in China and the West. The Western authors Aarseth (1994, 1997), Nash (2012), Gaudenzi (2013), Gifreu-Castells (2011, 2019) and Galloway et al. (2007) and Chinese authors such as Wang (2015) and Hou et al. (2018) analyse the different modes of interaction in interactive documentary projects and contribute relevant ideas about what modes of interaction can be adopted for projects in different cultural conditions. As a result, these projects lead to a new approach to representing reality, which is explored by assessing the level of user engagement and the ways in which such representations are navigated. Moreover, the examined projects are all from online platforms (including those for mobile devices), such as the Bilibili video platform, MIT Docubase, i-Docs and DocLab (Table 3).

In order to better understand the features and types of interactivity in Chinese and Western interactive documentary projects, the examples chosen were based on the following requirements:

1. The project must work with new media technology in terms of interaction (the user has to participate based on at least one certain type of physical action), which requires an active user instead of a passive audience. User participation and selection must be fundamental requirements for progressing in the project's story.
2. The project should present different versions of reality by recording the situations with a specific approach (which characterises documentaries in particular).
3. Any interactive documentary project must contain at least one type of interactivity. The user should be required to make specific contributions to the project, such as sharing their comments in real-time or uploading their recorded micro-videos which are related to the project's topic.

The purpose of examining these examples is to answer the question of how the user can be given more freedom of expression and action so that they can present different versions of reality and collectively shape the environment they share. In other words, interactive documentary projects aim to encourage the user to engage with the content using different levels of engagement (participation in the project's activities, co-creation of the project) or different types of interactivity (selective interactivity, social interactivity). All of these fundamentally transform the role of the user and shape a part of their reality according to their contributions to the content of the project.

Table 1

Chinese and Western Audio-Visual Works (Traditional Documentaries) are Examined to Conduct the Documentary Genre Research

Audio-visual Works in the West

1	Workers Leaving the Lumière Factory (1895)
2	A Trip to the Moon (1902)
3	Nanook of the North (1922)
4	Berlin: Die Sinfonie der Großstadt (1927)
5	Man with a Movie Camera (1929)
6	Drifters (1929)
7	Listen to Britain (1942)
8	Why We Fight (1943)
9	See It Now (1951)
10	Glass (1958)
11	Primary (1960)
12	High School (1968)
13	The Thin Blue Line (1988)
14	Human Reminds (1998)

Audio-visual Works in China

1	定军山 "Dingjun Mountain" (1905)
2	狂流 "Raging Waves" (1933)
3	民族万岁 "Long Live the Great Nation" (1939)
4	新中国的诞生 "The Birth of the People's Republic of China" (1949)
5	中国人民的胜利 "Triumph for the Chinese people" (1951)
6	中国 "China" (1972)
7	愚公移山 "Comment Yukong Déplaça les Montagnes" (1976)
8	丝绸之路 "The Silk Road" (1980)
9	话说长江 "Chang Jiang River" (1983)
10	流浪北京 "Bumming in Beijing" (1990)
11	沙与海 "Sand and the Sea" (1990)
12	望长城 "The Great Wall" (1991)
13	八廓南街 16 号 "No. 16, Barkhor South Street" (1996)
14	远去的村庄 "The Fading Village" (1996)

Table 2

Chinese and Western Interactive Works, Platforms and Software are Examined to Conduct the New Media Research

Chinese and Western Interactive Works, Platforms and Software

Interactive Works in the West

1	A Date with Markiplier (2017)
2	The Last Piece (2018)
3	Illusion – Immersive Interactive Art Installation (2019)
4	Call of the Wild – An Interactive YouTube Video (2019)
5	The Interactive Art of True/False 2020 (2020)

Dissemination Platforms with Interactive Works in the West

1	NFB
2	Arte.tv
3	MIT Docubase
4	i-Docs
5	DocLab

Interactive Video Platforms and Software in the West

1	Klynt
2	Korsakow
3	RacontR
4	3WDOC
5	Spott
6	Adventr

Interactive Works in China

1	"天舟一号" 发射任务 VR 全景直播 "Tianzhou 1 Launch Mission, VR Panoramic Live Broadcast" (2017)
2	点赞十九大，中国强起来 "Thumb-up the 19th CPC National Congress" (2018)
3	"央广主播的朋友圈"系列 H5 报道 "The CCTV Host's Moments Series of HTML5 Reports" (2018)
4	AI 小明谈两会 "AI Xiaoming Talks about the Two Sessions" (2019)
5	AI 唱报告给你听 "Singing the Government Report to You" (2019)

Dissemination Platforms with Interactive Functions in China

1	BiliBili
2	Tencent Video

Table 3

Chinese and Western Projects are Examined to Conduct the Interactive Documentary Research

	Interactive Documentary Projects in the West
1	34 North, 118 West (2001)
2	The Love Story Project (2002)
3	Mapping Main Street (2008)
4	Prison Valley (2009)
5	Global Lives Project (2009–present)
6	Highrise - Out My Window (2010)
7	Bear 71 (2012)
8	Hollow (2013)
9	A Short History of the Highrise (2013)
10	The And (2014)
11	Do Not Track (2015)
12	The Last Generation (2018)
13	Motto.io (2020)

	Interactive Documentary Projects in China
1	山村里的幼儿园 "Kindergarten in Mountain Village" (2016)
2	我们的节日若木纽 "Our Festival Ruomuniu" (2016)
3	消失的红树林 "The Lost Mangrove Forest" (2016)
4	女团 "Girl Pop Group" (2018)
5	人生一串 "The story of Chuaner" (2018)
6	傩神 "Nuo" (2019)
7	记忆像铁轨一样长 "Memories as Long as the Rails" (2019)
8	无人生还演出后台的故事 "The Story Behind the Scenes of the Show" (2019)
9	叩响明天 "Tomorrow Calls" (2019)
10	古墓派互动季：地下惊情 "The Legend Hunters Interactive Season" (2020)
11	武汉：我的战疫日记 "Wuhan: My Epidemic Diary" (2020)

Resources:	Arte.tv (https://www.arte.tv/sites/webproductions/en/）
	NFB (https://www.nfb.ca/documentary/)
	CCTV-9 (http://tv.cctv.com/cctv9/)
	MIT Open Documentary Lab (http://opendoclab.mit.edu/)
	i-Docs (http://i-docs.org/)
	DocLab (https://www.idfa.nl/en/info/about-idfa-doclab)

A Brief Overview of the Thesis Chapters

The second chapter places this study in the context of the different historical developments of Chinese and Western traditional linear documentaries, reviewing and enumerating the different periods that Chinese and Western documentaries have developed through as a genre. Based on the analysis of the theoretical literature and Chinese and Western documentaries, the different connotations, classifications and modes of representing reality in traditional documentaries presented by Chinese and Western authors are also outlined.

The third chapter focuses on describing notable media terms in Chinese and Western media studies, such as traditional media, new media and mobile media, as well as different classifications of media on the basis of the different media environments in China and the West. In the light of the fast-moving trend of new media and new media technologies, the current situation of media convergence between China and the West is analysed and different distribution platforms, interactive production platforms and software for Chinese and Western documentaries are listed.

The primary purpose of these two chapters is to analyse the theories by well-known authors as well as interactive projects and new media software/platforms in order to offer the development frameworks for both fields, illustrating the different processes experienced in documentary and new media so far.

The fourth chapter provides a working definition of this new form of documentary based on the definitions proposed by a number of Western and Chinese authors and the interactive feature of current interactive projects. Moreover, the existing classifications and modes of interaction between Chinese and Western interactive documentary projects are examined and the differences between linear and interactive documentary projects are also highlighted. Specifically, interactivity is considered here as an approach to differentiate an interactive documentary project from a traditional one. Based on the interaction modes suggested by different authors from the West and China, four types of interactivity are proposed: selective, immersive, social and generative.

The fifth chapter aims to illustrate how interactive documentary projects reshape the author-project-user relationship. It emphasises that the position of the author is moving towards a more flexible and fluid state, where the role of the author becomes hybridised, and the project is no longer seen as a finished work but as a continuously evolving system that generates different versions of reality within a fluid context. This means that the status of the user has changed from viewer to participant, contributor, co-creator and author. These new dimensions of the author-project-user relationship are constructed through the interaction of these dynamic relational entities.

The sixth chapter analyses the three main parameters for the content analysis of interactive documentary projects: hypertextuality, multimediality and interactivity, taking generative documentary projects as a representative type of interactive documentary. It also examines the

different types of interactivity in existing Chinese and Western interactive documentary pro-
jects, emphasising the significance of social and generative interactivity and further exploring
new approaches that involve generative and social interactivity in their practice. The selected
projects in this chapter are from Canada, France, Germany, the United Kingdom, the United
States and Mainland China. *Do Not Track* (2015) and the *Global Lives Project* (2009–present)
are both co-productions; "*The Legend Hunters Interactive Season*" (2020) and "*Story Behind
the Scenes of the Show*" (2019) are projects from Mainland China that contribute to the classi-
fication of different interactive forms and methods of producing projects.

The seventh chapter concludes the study with three specific points. First, it proposes op-
tions for the further evolution of interactive documentary projects depending on the level of
user engagement. Then, it explores the responses to technological developments in interactive
documentary projects and to the wider sociocultural and political contexts from the perspective
of the production, dissemination and reception of projects in the West and China. Finally, it
considers possible new types and forms of interactivity based on the analysis of existing pro-
jects.

This thesis looks at the transformative power of interactive documentary projects in the
context of the new dimension of author-project-user relationships: interactivity. The findings
of this study will attempt to illustrate how the different types of interactivity in interactive
documentaries carry with them a vision of their respective society and culture and the people's
role within said interactivity. The hope is that this study's contribution will not only introduce
the theoretical research and practice of interactive documentary projects from Mainland China,
but also support future authors and users in conceiving such projects. The information and
effects that are presented in different countries' projects depend on the topics portrayed within
a cultural-social context, the appearance and style of the project and the media sources, as well
as the types of interactivity applied. Interactive documentary projects, like any traditional linear
documentary, contain both cultural and political power and their co-creators, contributors and
participants should not be ignored. Documenting a version of reality becomes a dynamic pro-
cess that allows the user to participate directly in the construction of the world depicted. In this
fluid environment, the project must be continuously readjusted to maintain some emphasis on
the ever-changing form of what the users perceive as a common ground. Interactive documen-
tary projects are becoming a permanent feature of today's technological offerings and the task
of their creators and innovators is to continue the long, patient work of building and improving
their production and dissemination platforms, as well as develop their users' interactivity and
create a shared culture that will allow all involved to continue to grow.

Historical Views on Documentaries in the West and China

Documentaries in the West

In almost every country, documentaries have been made in one form or another and have contributed to the development of realism in films, and various film theories emerged in different periods.

As described in *The Major Film Theories*, James Dudley Andrew grouped Western film theories into three categories: the formative tradition, the realist film theory and the contemporary French film theory (Andrew, 1976, p. 5). Arnheim's (1957) and Eisenstein's (1929) theories belong to the formative tradition category. Kracauer's (1960) and Bazin's (1967) theories reflect the realist film theory, while Jean Mitry's and Metz's (1974) theories are part of the contemporary French film theory category. Accordingly, American scholar Browne (1994, p. 7), in *American Television: New directions in history and theory*, divided Western film theory into three stages from a historical development perspective: the early theory (the 1920s and 1930s), the classical theory (the 1940s and 1950s) and the contemporary theory (after the 1960s).

Within those frameworks, the theoretical definition of the documentary film also demonstrates its historical nature and variations. For instance, at the stage of early theory, John Grierson defined the documentary as a "creative treatment of actuality", which was affected by Arnheim's (1957) theory of *Film as Art* (1932) and Eisenstein's (1929) *Methods of Montage* at that time, and this definition has formative colour. Moreover, at the stage of classical theory, Bazin and Gray's (1960) Ontology of the photographic image and Kracauer's (1960) *Theory of Film: The Redemption of Physical Reality* shaped filmmakers' aesthetic orientations, such as the American Direct Cinema, which focused on being realistic, and the theory's formative feature/colour faded into the background. Also, like the stage of contemporary theory, Christian Metz's (1974) *Film Language: A Semiotics of the Cinema* described how filmmakers began to doubt whether the documentary presentation of things reflects the reality of things. In this context, Nichols' modes of representation and Williams' (1993, p. 358) description of the new documentary film emerged, which are a set of strategies designed to choose from a horizon of relative and contingent truths.

Thus, from the perspective of the historical development of film theory, the definition of the documentary film has also evolved, while its progress is inseparable from society, technology and culture. Documentaries have negotiated with reality to exhibit different styles and forms in different eras.

Documentaries of the 1920s

The brothers Auguste and Louis Lumière were pioneers in cinematography technology, personally inventing the machine that turned cinema into a "public event" (Ellis, 1982, p. 1) to which we still refer to today.[1] In particular, they employed photographic images (recorded on film) that were highly relevant to reality. At its inception, the intention of the documentary was unclear; the brothers did not try to turn their film into an art form with enormous social impact, but rather, were curious about the newly invented scientific technology. However, just two decades later, in the 1920s, people recognised the potential of the documentary film as a significant social instrument, thus transforming it into a means/tool for propaganda or education.

With the standardisation of cinema distribution in theatres, and later, the beginning of talking pictures, the documentary genre was divided into a few sub-genres: naturalist (and travelogue), newsreels, propagandist and realist (Rotha, 1952, p. 75). The current style of documentary results from this fusion of traditional genres. Furthermore, it is not a style of storytelling but rather, documentation on what has actually happened using a unique cinematic language.

The director of *Nanook of the North* (1922), Robert Flaherty, is considered the father of the documentary.[2] Indeed, his contribution had an effect of standardisation, turning the documentary into a genuine film genre. Besides, he introduced a narrative language of "decoupage"[3] to non-fiction cinema. Before and during World War II, this language was widely used in paid propaganda in the United States and Europe (Braida, 2013, p. 28).

Another prominent figure of the time was John Grierson, a British filmmaker who insisted that several social, economic and political intentions can be achieved through the language of cinema. In *The first principles of documentary*, Grierson (1932, p. 455) drew attention to Robert Flaherty and his way of making documentaries, stating that any film based on on-site material should be classified as a documentary and that the use of natural materials be treated as an essential standard to distinguish documentaries from other films. This criterion proposed by Grierson certainly broadened the connotation of the documentary, and he favoured multiple approaches to treating its natural materials. Moreover, he indicated that the documentary can be a means/tool of propaganda capable of delivering specific arguments or thoughts. On the one hand, documentaries of that period paid particular attention to images and styles, with emphasis on the use of artistic approaches, the so-called "creative treatment"; on the other hand,

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[1] In Fang Fang's *The Historical Development of Chinese Documentary Film* (2003), Wanli Shan's *The History of Chinese Documentary Film* (2005) and Jihua Cheng's *The History of Chinese Cinema* (1980), the Lumière brothers are mentioned and considered as the pioneers of cinematic technology.

[2] As Chinese scholar Cao noted in *Introduction to World Film History* (2010), as well as Ren in *A New Theory of Television Documentary* (1997), Robert Flaherty is the father of the documentary film, a fact which is widely accepted in China.

[3] Richard Abel notes that "decoupage is called continuity". Continuity was experienced as rhythm, the control exercised by the mind over the material that has been filmed or is to be filmed (1988, p. 203).

the images of the film were combined with the voice-over to present the thoughts. For the purpose of promoting ideas, the voice-over took on a weight that suppressed the images themselves, or the images were in place to express the voice-over. Hence, the Grierson perspective was established, which became a conventional narrative style. Later, following the emergence of television as a mass medium, this style began to be strongly questioned, notably by the British free cinema movement in the late 1950s. This movement opposed Grierson and his followers' depiction of a mechanised, highly industrialised reality (McLane, 2013, p. 206). The Grierson style[4] was not in line with the artistic demands of documentaries, nor with the aesthetic needs of the time, and, thus, faded from the public.

The Late 1950s： Cinéma Verité and Direct Cinema

By the end of World War II, the economy had begun growing again, the cultural climate in Europe and the United States was shifting and a large group of youth wanted their voices to be heard.

The technological innovations in filmmakers' equipment in the late 1950s and 1960s made this possible and brought about revolutionary changes in the way reality was represented far beyond what had previously been imagined. As cameras became much lighter and smaller, filmmakers were finally able to carry them on their shoulders to film and record sound.

During the 1960s, the rise of the French Cinéma Verité movement and the American Direct Cinema movement, both depicting a more tangible reality, reflected filmmakers' intervention and avoidance of politics. Documentaries shifted towards non-politicisation and personalisation. Direct Cinema promoted a "fly on the wall" (Grant, 2008, p. 15) approach to the production of documentaries. Vertov's (1924, p. 47) "Kino-Eye" theory and Bazin's (1967, p. 27) long take theory had an impact on the emergence of the Direct Cinema theory. In the case of Direct Cinema, documentaries require a sense of reality in their production, de-emphasising the use of music, minimising editing and reducing the need for subtitles. Indeed, as long as the documentary exists to interpret the world and influence the viewers' values, it cannot get rid of its ideological/subjective nature, but its tendencies become much more subtle and complex.

The advance of technology, especially in terms of recording devices and techniques, resulted in a more precise presentation of content and a more harmonious presentation of sound and image, which brought about a significant shift in aesthetic concepts.

The synchronised sound was the most significant innovation of the documentary of this period, which ultimately enabled it to construct the narration of the truth and inspired filmmakers like Jean Rouch (*Chronicle of a Summer*, 1961). Since then, many technological innova-

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[4] A number of Chinese scholars, such as Tongdao Zhang (2008, p. 148), Fengjun Wu (2008, p. 107) and Wenhan Cui (2019, p. 110) have described John Grierson's perspective as "Grierson style".

tions have occurred, such as film types and video cameras, and styles have evolved into numerous variations. A significant step forward is in their distribution and the availability of film production equipment, which has increased due to the lower cost of technology.

Documentaries Since the 1990s

With the advent of videotape and the rise of analogue editing systems such as Avid Technology, theatres and movie clubs were not the only places to watch documentaries. Indeed, the emergence of television, followed by the home theatre, changed the conventional method of film reception. At this point in time, filmmaking methods became more polymorphic, exhibiting its reform and reflection. Dogme 95 was the film movement in 1995 organised by Danish filmmaker Lars von Trier and Thomas Vinterberg, which insisted on the purity of filmmaking. They drew up the "Vow of Chastity"[5], which included stipulations such as the camera needing to be handheld and the sound never being created apart from the image so as to focus on the plot and development of the story itself; the director forced the truth out of the characters and the settings in which the film was shot.

In the same way, a style of documentary production has emerged in the West where the filmmaker no longer hides behind the camera, appears in front of the screen, interacts with the filmed figures or gets into their position to look for answers to a specific question. In short, the filmmaker no longer hides but instead, expresses themselves, even actively exercising their influence and pursuing a more authentic reality.

Furthermore, during this period, the emergence of the digital camera and its evolution brought about another principal change; the enormous potential of numerical code and its manipulation continues to be the key to today's films. While analogue video permitted filmmakers to film as much as they wanted, the emergence of digital video has enabled a "democratisation" (Peng & Caike, 2018, p. 99) that allows a tremendous amount of footage to be stored and edited. Furthermore, material recorded by a documentary filmmaker is represented by a digital code that can be modified and re-created. This situation has raised new challenges to the status of the documentary film and has opened new possibilities in storytelling.

Documentary Genres in China

The history of the Chinese documentary film began in 1905, with a recording of a Peking Opera performance which became the first Chinese movie, "*Dingjun Mountain*". At the beginning of its invention, film existed as a means/tool of recording the world (Fang, 2003, p. 1). There is no doubt that the documentary, as a film genre, is the exotic product of the West. Within a short

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[5] By establishing a set of rules that severely limited Hollywood gimmicks and inspired filmmakers in a mode of rebellious independence reminiscent of Italian Neorealism and Nouvelle Vague (Blake, 2013, p. 1).

historical period spanning over three decades (from the 1990s to the present), the Chinese doc-umentary underwent a process that took the Western documentary a hundred years, with each stage more or less presenting some traits of the Western documentary. At the same time, the Chinese documentary, along with its distinctive cultural traditions, ideologies, aesthetics, and values, has mirrored the evolution of the Western documentary in a unique way.

Different scholars have divided the development of the Chinese documentary into distinct periods that offer different views on its evolution. He (2005, p. 1), from the Communication University of China, focused on documentaries that were produced since the birth of the Peo-ple's Republic of China in 1949. He (2005) distinguished the development of the documentary into four periods: the politicised documentary period, the humanities and culture documentary period, the civilian documentary period and the socialised documentary period. Another scholar, Fang (2003, p. 7), from the Shanghai Theatre Academy, chose the introduction of cin-ema in Mainland China as the starting point of her studies and, keeping up with the pace of the times, categorised the Chinese documentary into five periods: the shadow play era, the science and democracy era, war era, the era of heroes and the era of civilians. In addition, Shan (2005, p. 3), from the China Film Art Research Centre, explained the development of Chinese docu-mentary according to different periods of film styles: the beginning of Chinese documentary, the newsreel era, the counter-Japanese documentary era, the People's documentary era, the Seventeen years and Cultural Revolution documentary era, documentaries of the new era and the diversified documentary era. Furthermore, Zhao (2008, p. 71) summed up the development of the Chinese documentary by listing several critical phases: the historical war documentary, the documentary as the "figurative political theory" (Xu, 1951, p. 50), a television documentary with Chinese characteristics and the return of the documentary under the Jishi-ism wave (Wang, 2009, p. 19).

The Early Stage of Developing Documentaries

Looking back at the historical development of the Chinese documentary, we found that, early on, Chinese documentaries were influenced by Soviet documentary theory, resulting in a vari-ation of the expository mode of documentary proposed by Western researcher Nichols. While the traditional documentary emphasised the dominance of images, the contrary occurred in the expository mode of the documentary; the images were subordinate to the voice-over, and their principal purpose was to complement it with a social function. The voice-over organised the images and gave them a meaning similar to that of the headings/subtitles written on the motion picture. Until the 1990s, most Chinese documentaries were characterised as being in the Grier-son style. This type was strongly oriented towards political propaganda and education, making Chinese documentaries of this period more homogeneous in nature.

Documentaries of the 1990s

The 1990s were undoubtedly the most remarkable period of the Chinese documentary. From propaganda and education to Jishi-ism, the dramatic evolution in Chinese documentary theory and practice was unprecedented. In *Documenting China: The New Documentary Movement in Contemporary China*, Lv interpreted the development of the Chinese documentary since the 1990s based on the concept of the new documentary movement (2003, p. 3).

While this movement was emerging in China, documentaries in the West also underwent profound shifts. The *Thin Blue Line* (1988), *Roger and Me* (1989) and other work broke the long-standing shackles of Direct Cinema and propelled Western documentaries into the era of "post-Direct Cinema" (Wang, 2013, p. 79). Different Western researchers described this period in various terms. For instance, Winston (2019) referred to it as the "post-Griersonian documentary" (p. 24) and Corner (2002) mentioned it as the "post-documentary" (p. 255). Also, other researchers, such as Arthur (1993, p. 108), Bruzzi (2006, p. 7) and Williams (1998, p. 9), defined this period as the "new documentary". The breakthrough in the field of creation profoundly shook the common understanding of documentary realism. As early as the mid-1970s, Nichols (1976, p. 34) attempted to disprove that a documentary film is equivalent to reality through textual analysis. Also, in 1991, he published the ground-breaking theoretical monograph *Representing Reality*, which addressed the inevitable fictional dimension of the documentary. Another influential scholar, Renov (2004), rejected the documentary as the porter of reality based on the perspective of subjectivity, claiming that fiction and non-fiction as representational domains are enmeshed in one another. These Western researchers comprehensively reflected on the issue of documentary reality from their own perspectives. The Chinese documentary, on the other hand, enthusiastically embraces the reality that comes with Jishi-ism.

In the late 1980s and early 1990s, Jishi-ism dominated, and any other stylistic approaches were perceived as heretical. The highest objective pursued by the new Chinese documentary seemed to be the copying of reality to the screen in an unmediated way. For instance, Ren (1992, p. 55) pointed out that the nature of a documentary should be tantamount to documenting, which restores the objective reality of the world. Of course, when Jishi-ism was booming, Zhong (1992, p. 20), from the Communication University of China, also argued that "Jishi-ism is not the truth", but his perspective did not have much impact at the time.

Chinese Jishi-ism and American Direct Cinema exhibit numerous similarities in diverse aspects and levels. Therefore, the concepts of Direct Cinema, Cinéma Vérité and Chinese Jishi-ism will be explained, respectively.

During the late 1950s in the United States and Canada, significant changes occurred in regard to the documentary filming equipment used. The evolution of technology revolutionised its way of working, extended the possibilities of expression and fundamentally changed the way documentaries were presented. Direct Cinema involves unmoving observation in which

the camera can capture the most vivid and realistic part of the real world. Hence, during shooting, the accepted strategies are non-intervention, non-interference and pure observation, Furthermore, the filmmakers attempt to hide their presence to minimise their impact on the filmed events/figures. As mentioned in Nichols' (1991) work, it is to convey the sense of "unmediated and unfettered access to the world" (p. 43). Also, Leacock pointed out that filmmakers are nothing more than the "fly on the wall" (Grant, 2008, p. 15). During the post-production process, the filmmakers do not add voice-overs, supplementary music or other elements that did not originate on set.

A concept that is often confused with Direct Cinema is Cinéma Vérité, a genre of documentary film based on contemporary technological breakthroughs. This term was introduced in France, with the most notable representative being Jean Rouch, who pointed out that the reality captured by the camera is not the reality itself, but the reality inspired by the act of filming (Han, 1991, p. 32). Breitrose (1986) noted that the Cinéma Vérité wanted to be a "fly in the soup...visible for all to notice" (p. 47), emphasising the personal and media dimension of filmmaking.

Although Direct Cinema and Cinéma Vérité are based on a shared technical foundation, there are distinct differences regarding the fundamental ideology, operational approaches and forms of these works. As Barnouw (1993) summarised:

> The Direct Cinema documentarist took his camera to a situation of tension and waited hopefully for a crisis; the Rouch version of Cinéma Vérité tried to precipitate one. The Direct Cinema artist aspired to invisibility; the Rouch Cinéma Vérité artist was often an avowed participant. The Direct Cinema artist played the role of an uninvolved bystander; the Cinéma Vérité artist espoused that of provocateur. The Direct Cinema found its truth in events available to the camera. Cinéma Vérité was committed to a paradox: artificial circumstances could bring hidden truth to the surface. (p. 255)

Furthermore, in the 1990s, Nichols (1991) dropped the terms Direct Cinema and Cinéma Vérité in *Representing Reality* and referred to them as observational documentary and interactive documentary, respectively, instead. In 2000, in *Introduction to Documentary*, Nichols updated the term interactive documentary to participatory documentary.

Like Direct Cinema and Cinéma Vérité in the West, the rise of Jishi-ism in China was based on technological improvements, but it took place over 30 years later than its Western counterparts. The documentary series "*The Great Wall*" (1991), produced by the China Central Television (CCTV) and the Japanese Tokyo Broadcasting System, Inc. (TBS), is largely regarded as a milestone step toward Jishi-ism (Zhao, 1992, p. 2). From this work onwards, the Jishi-ism documentary, on the one hand, emphasised long takes and the synchronisation of sounds and images and attempted to avoid adding voice-overs and music in post-production; on the other hand, it highlighted the interaction between the filmmaker and the filmed figures.

The two hosts of this work were the primary drivers of these interactions. However, after "*The Great Wall*" (1991), the filmmaker's involvement in the documented events and the interactions between the filmed figures quickly became anachronistic. Pure observations became the only legitimate way to film a documentary. For example, "*Living Space*" (1993), the most influential documentary series in China in the 1990s, was generally based on the observational approach, striving to achieve a "raw, simple, rough and untreated" style of Jishi-ism (Chen, 2000, p. 52). In some cases, a minimal voice-over is reflected in the work, without judgement or summary, limited to the description of the relevant context. Alternatively, a short subtitle is allowed to introduce the primary substance. At this point, Jishi-ism had moved away from Cinéma Vérité and tended towards Direct Cinema. As of the mid-1990s, with such works as "*The Square*" (1994) and "*No. 16 Barkhor Street South*" (1996), the entire style of Direct Cinema became a symbol of the highest aesthetic achievement of Chinese documentaries.

Obviously, with the term Jishi-ism, the form and style of the Chinese documentaries seem to have remained consistent throughout the 1990s. However, if these are instead examined with terms such as Direct Cinema, Cinéma Vérité, observational documentary or participatory documentary, it can be seen that the intrinsic forms of the works had already undergone significant changes as early as the early to mid-1990s; no single term is able to encompass this entire period of the 1990s. In addition, the significant influence of Frederick Wiseman, who is widely recognised as the representative of Direct Cinema, is one of the reasons for the usage of the term Jishi-ism. In 1993, many Chinese filmmakers, including Jinchuan Duan and Yue Jiang, came across Wiseman's work at the third Yamagata International Documentary Festival in Japan and brought it back to China (Wang & Winston, 2017, p. 9). Since then, the Chinese documentary industry was affected by the work of Wiseman throughout much of the 1990s. For this reason, just like Direct Cinema, Jishi-ism advocated that the documentary should document or present "unmanipulated reality". Whether during filming or post-production, the traces of subjectification needed to be removed. Furthermore, between 1992 and 1993, CCTV gathered over 100 media professionals and academics to define "television speciality programs", including documentaries. In the final definition of the documentary, they specified:

> It requires capturing materials directly from actual life, photographing real people. Fictional stories and role-playing are not permitted. The primary recording approaches would be photos or video interviews, that is, in the process of the events, adopting the way of waiting, capturing, picking, or following, to document what actually happened. While ensuring the overall record is truthful, details must be verified. (Yang Weiguang et al.,1994, p. 22) (Translated by the author)

The definition of the documentary leaves out politics and discourses on personal bias but focuses on the work that presents the observed reality.

Moreover, American Direct Cinema and Chinese Jishi-ism have emerged from different political backgrounds. Even though there is a high degree of overlap between technical innovations and the specific forms of their representation, their political functions are very different. According to Allen and Gomery (1985), in *Film History: Theory and Practice*, the Direct Cinema filmmakers of the 1960s were liberal in their position and rejected radical societal transformation approaches. It was sufficient to reveal the "truth" of the social situation to the public. Propaganda and advocacy were not obligatory (Allen & Gomery, 1985, p. 274). Taking this into account, Direct Cinema, which promotes the elimination of the filmmaker's subjectivity and adheres to a purely observational stance, became the best approach for them.

However, the rise of Jishi-ism in China was distinctly different from this approach. From the birth of People's Republic of China in 1949 to the late 1970s, documentaries were more accurately positioned as the "figurative political theory" proposed by Lenin in 1921 (Xu, 1951, p. 50). During this period, Chinese documentaries focused on newsreels that served propaganda and educational purposes. Under this theoretical interpretation, political tendencies and truthfulness are intertwined.

In this way, Jishi-ism, as the new Chinese documentary movement, defined its identity compared to the traditional Chinese documentary, which exhibits propaganda and educational features. In terms of content, it moved from political propaganda to telling stories about the civilians themselves. Jishi-ism is not a matter of politics and tendencies; it concerns only the veracity of objective reality. Thus, it can be observed that Jishi-ism represents not only a sort of aesthetic revolution and liberation, but more importantly, it also reveals itself as an ideological distinction when compared to other forms. This is the reason why Jishi-ism claimed a leading position in the landscape of the Chinese documentaries of the early 1990s.

Moreover, a spectacular transformation in the field of Chinese documentary throughout the 1990s, under the new documentary movement or Jishi-ism, was the separation of the newsreel from the documentary, as well as its conceptual evolution. The breakout of television reporting/news forced the newsreel to fade from the screen, and this separation drove filmmakers and television professionals to consider the concept of the documentary itself. For those who were confused between newsreels and documentaries, it took a long time to figure out the difference between the two concepts and adapt to the shift in ideas and methods of production. In the West, the fundamental connection with the concept of documentaries was not made until the early 1990s. Another momentous transformation in the field of Chinese documentary during this period was the decline of the cinematic documentary and the rapid emergence of the television documentary. There were both internal and external reasons for the decline of cinematic documentaries. The internal reason is that it was challenging to meet the diverse needs of the viewer, particularly since the aesthetic tastes of the viewer had shifted considerably after the implementation of the reform and opening-up policy in China. The external reason is that with the evolution of technology and the popularity of Televisions, the rapid flourishing of television documentaries attracted numerous cinematic documentary viewers. The cinematic

documentary and the television documentary are contradictory and interdependent at the same time.

As the wave of Jishi-ism receded, it began to be accepted that the documentary does not present reality itself but rather a constructed image of reality, and the filmmaker's subjectivity in filming and post-production was admitted. Wang (2010, p. 41) also highlighted that the primary focus of the documentary shifted from specific individuals and events in the real world to the inner world of the filmmaker. While Grierson's traditional understanding of the documentary as "creative treatment of actuality" emphasised the existence of external/objective reality, Renov's discussion of the first-person film supported the idea that the work evolved towards the filmmaker's inner world. Thus, the filmmaker steps away from the role of an observer or critic of society and towards the role of a poet or an artist. As a result, the scope of the content represented by the documentary broadened and extended.

The emergence of independent documentaries in China in the 1990s constituted a novel phenomenon in the documentary genre. According to the division of production entities, official documentaries are produced by official film and television institutions, while independent documentaries are produced by civil groups (also referred to as civil documentaries, marginal documentaries or documentaries outside the system). It is generally believed that Wenguang Wu's film "*Bumming in Beijing*" (1990) symbolises the beginning of the independent documentary, and subsequently, other similar work emerged. Just as official documentaries emphasise the discourse of the authorities, independent documentaries concentrate on individual points of view. Due to the high cost of specialised equipment, independent documentaries and official documentaries were inextricably linked. Furthermore, the independent documentary expanded precipitously until the advent of an inexpensive digital video (DV) camera and its corresponding editing devices in the late 1990s.

Since the 1990s in China, discussions on new documentaries, television documentaries, cinematic documentaries and Jishi-ism have been conducted. Although there is no distinct definition of the documentary, several features of the documentary in this period are, first, that the new documentary began in the field of television documentaries and occurred principally in this field; second, that the new documentary generally reflects the lives of individuals from a civilian perspective, as opposed to the official documentary which engages in propaganda and education, and in this sense, coincides with the notion of the independent documentary; third, that the breakthrough technology of synchronised sound is used in the new documentary, allowing the filmed figures to express themselves with their own words. This third feature might seem to be only a technical feature, but in fact, it has comprehensive aesthetic connotations and social significance. In the early 1960s, the emergence of Cinéma Vérité in the West also took synchronised sound as the starting point that revolutionised its documentary field. In this aspect, the new documentary movement in China in the 1990s shares some similarities with the Cinéma Vérité movement.

Such comparisons make us realise that China's new documentary practice in the 1990s was simply Jishi-ism (or a new documentary movement) that came 30 years later than in the Western world. It is also worth noting that by the end of the 1990s, Chinese documentaries had started to break away from the constraints of Jishi-ism and the possibilities of documentary representation were practised in a much wider variety of forms and styles. Subsequently, Chinese documentaries and current Western documentaries started to evolve in the same direction. As Zhang (2000, p. 76), from the School of Arts and Communication of Beijing Normal University, explained, in the last decade of the 20th century alone, the Chinese documentary underwent a process that took the Western documentary 80 years, from Flaherty's romantic anthropology, Vertov's "Kino-Eye", Grierson's propaganda mode and Ivens' left documentary idea, to Rouch's Cinéma Vérité and Wiseman's Direct Cinema. Chinese documentaries completed the fundamental work that was necessary to undergo the shift from photographic film to video.

Documentaries in the 21st Century

From the end of the 20th century to the start of the 21st century, Chinese documentaries have moved towards diversification. The overall features of this movement can be summarised as follows: the convergence of cinematic and television documentaries, the connection of domestic and international documentaries, the complementarity between official and independent documentaries and the coexistence of traditional and new documentaries, which is a result of the large-scale reform and openness in China.

During this period, the market economy further penetrated the media industry, and the expansion of market discourse prompted documentary innovations. The documentary demonstrated a concern towards the viewer. With the introduction of innovative technologies and social responsibility, documentaries began shifting towards cultural and social topics. In April 1999, Beijing Television began broadcasting its "Documentary" programme. In July 2001, CCTV-10, the science and education channel, launched "Discovery", which was the first documentary program focusing on humanities, culture, history and geography. Later in January 2002, Shanghai Television released "Documentary Channel" (DOCUTV). Therefore, television has provided documentaries with a more significant opportunity for distribution, as they are tested by market factors such as viewership. Television documentaries such as "*The Forbidden City*" (2005), "*The Rise of the Great Powers*" (2006), "*The New Silk Road*" (2006) and other works initiated the blockbuster era of the documentary.

Since 2010, China has continued to reassert its ambition to transform a great economic power into cultural soft power (Zhang, 2011, p. 4). Due to support from cultural policies, documentaries developed rapidly, and the blockbuster style was turned into a norm. As a consequence, the modes of documentary production and distribution in China have become industrialised. For instance, in 2012, "*A Bite of China*" became a hit, confirming the brand strategy of documentaries and its cultural attractiveness. In this phase, the documentary film's simple and modest aesthetic style no longer meets the viewers' needs; viewer demands for fast and

fluid editing and stunning visual and audio effects have emerged. The technological empowerment (Zhang, 2008, p. 72) of new media has also broadened the new dimensions of documentary development. In this context, new media documentaries such as "*The Forbidden City 100*" (2012), "*The Great Tribe*" (2017), "*Breakfast of China*" (2019), "*Flavourful Origins*" (2019) and "*The Great Shokunin*" (2019) emerged.

Documentary Genres

The research field of the documentary genre has traditionally been complex, and it is often challenging to define a commonly accepted area of research. After reviewing and comparing the 100-year journey of the documentary in China and the West, as well as describing the background of its historical development, it is also essential to examine possible genre definitions and how they evolved. This will be achieved by describing the various positions of documentary experts and filmmakers. Barnouw (1993, p. 261) argued in *Documentary: A History of the Non-Fiction Film* that filmmakers are accustomed to adopting the combinations of various positions in different time points. Furthermore, in his view, the role of documentaries had evolved with the times and needs of different historical periods, often being subordinated to the regimes in power and their social functions.

Like other art forms, the film has been classified in numerous ways over the years, according to different criteria and perspectives. In *Film/Genre*, Altman (1999) described that the film genre could be interpreted with diverse standpoints and meanings. The following is his suggested list:

> The genre as a blueprint, as a formula that precedes, programs and patterns industry production; the genre as structure, as the formal framework on which individual films are founded; the genre as the label, as the name of a category central to the decisions and communications of distributors and exhibitors; the genre as a contract, as the viewing position required by each genre film of its audience. (Altman, 1999, p. 14)

Here, his proposal is a preliminary approach without the dividing of the genre into the classical categories of fiction and non-fiction.

The documentary genre has continued to be defined over the years. According to León (2008, p. 44), the term documentary has been used in the history of cinema and television to describe works of different kinds and with varying features, such as newsreels, travel films and television programs with different content.

The term documentary film was probably initially derived from the French term "documentaire", which was coined by French critics to distinguish serious travel and expedition films from more superficial, generic travelogues (Aitken, 2013, p. 1097). From the very beginning, the documentary was regarded as more serious and authoritative than other types of film, and

was also described as the "discourse of sobriety" (Nichols, 1991, p. 3); the source of that sense of greater importance was thought to lie in the documentary's relationship with reality.

From the Lumière brothers' first screenings to the late 1910s, "actuality" played a dominant role in commercial cinema. During this time, the films dealing with everyday life, news, exoticism and culture were trendy and connected to entertainment. With this foundation, filmmakers attempted to provide different content or types of films, referred to as documentaries or experimental films, in response to the viewing needs at specific times. This form of cinema emerged since its inception, but it would not have occurred without the fictional model that was popular at the time, and it used this fictional model to label itself as an alternative. As such, the distinction between fictional and non-fictional types has emerged, but nowadays, their boundaries are increasingly blurred.

The first adoption of the term documentary in English was probably by Grierson in 1926, whose notion of the documentary was "a creative treatment of actuality" (Rotha, 1952, p. 70). Based on this statement, the connection between reality and the documentary is emphasised, as well as the filmmaker's perception of reality. Grierson was quite clear about this, arguing that, in some cases, the documentary film should strive to represent an underlying reality, or what he called the continuing reality (Rotha, 1952, p. 3), as opposed to the surface events of the reality. Grierson was opposed to the Cinéma Vérité approach to documentary film, and his own film, *Drifters* (1929), can be described as an example of documentary-realist modernism, modelled on idealist premises.

As early as 1948, the World Union of Documentary defined documentary film as follows:

> Documentaries are all methods of recording on celluloid any aspect of reality interpreted either by sincere and justifiable reconstruction, to appeal either to reason or emotion, to stimulate the desire for, and the widening of human knowledge and understanding, and of truthfully posing problems and their solutions in the spheres of economics, culture, and human relations. (Geva, 2021, p. 311).

Here, we can find that the process of the evolution of both documentary form and its connotations have not come to an end. For example, in *Grierson on Documentary*, Grierson and Hardy (1971, p. 145) introduced three guiding principles for the documentary film. First, the documentary is a new and vital art form that photographs scenes of life and living stories. Second, the scenes should be drawn from reality and offer a better opportunity to interpret our world. Furthermore, in Grierson and Hardy's view (1971), the materials from the real world could mirror reality and access their own natural gesture. Simply put, documentaries are the creative treatment of actuality. In line with Grierson and Hardy, Bruzzi (2006, p. 123) also pointed out that documentaries seem to be a practical and informative type of film, capable of being a "discourse of sobriety" with authoritative and serious connotations.

"Actuality" in Grierson's definition (1952) refers to the thought that documentaries present proposals of reality rather than express an imaginary fictional world. Sloan (1964, p. 66) defined the documentary similarly, but in a broader sense, as a film that embraced the truth and projected/reflected reality. Furthermore, it should be primarily oriented towards non-theatrical use. Barnouw (1993, p. 261) argued that documentaries should not be regarded as the truth but instead, as proof of the actual situations in a complicated evolutionary context. Also, Winston (2019, p. 24) stated that the documentary could be better described as narrativised recorded aspects of witnessed observation received as a story about the world. Moreso, Bruzzi (2006, p. 17) highlighted that documentaries have always been addressed as a representational mode of film production, even though the concept of film as a record is at its core. The descriptions above clearly reveal that words such as record, real, truth, witness and reality are always mentioned when defining the documentary. Moreover, the word "creative" in Grierson's definition (1952) shows that creativity is implied in the attached interaction, which suggests the license of fiction. Thus, the documentary frames historical reality for presentation from a distinct perspective.

The British director Paul Rotha (1952, p. 65) stated that documentaries could be treated synonymously with films on the themes of science, culture and sociology. Therefore, documentaries employ the medium of cinema to explore the actual situation of people's lives from a social perspective.

Moreover, according to Renov (1993, p. 21) in *Theorizing Documentary*, the form of the documentary represents a more or less artistic reconstruction of the historical world. He referred to four possible approaches to reshaping it: recording, revealing or preserving; persuading or promoting; analysing or interrogating; and expressing.

Nichols' *Representing Reality: Positions, Issues and Concepts in Documentary* (1991) has been widely followed by both Western and Chinese scholars. According to his view, the documentary reflects a change in the understanding of film theory in that the documentary is defined through its shifting feature of being a social structure. From this point of view, this notion acts as the basis for the social networks of shooting, creation and dissemination. Additionally, another book by Nichols (2017), *Introduction to Documentary*, provides definitions as well:

> The documentary film speaks about situations and events involving real people (social actors) who present themselves to us as themselves in stories that convey a plausible proposal for, or perspective on, the lives, situations, and events portrayed. The distinct point of view of the filmmaker shapes this story into a way of seeing the historical world directly rather than into a fictional allegory. (p. 10)

Nichols proposed three dimensions from which to define a documentary: that of the filmmaker, the text and the viewer. These attempt to address all aspects of documentary production, filming and distribution, with each dimension emphasising a different but complementary perspective.

The first dimension is centred on a filmmaker's perspective and considers fiction from the standpoint of control. Nichols (1991) referred to the fact that documentary filmmakers are often perceived as having less control over the themes they film in comparison to the fictional film producer (p. 42). Similar to the suggestions of Bordwell et al. (2010, p. 352), the distinction between documentary and fiction can be found through the level of control in the production process. Therefore, in fictional films, the filmmakers can control all of their details, while in documentaries, the filmmakers only have control over a few variables.

The second dimension of this definition describes the text. As Nichols (1991) explained:

Documentaries take shape around an informing logic. A paradigmatic structure for a documentary would involve the establishment of an issue or problem, the presentation of the background to the problem, followed by an examination of its current extent or complexity, often including more than one perspective or point of view. (p. 18)

He also noted that there are similarities between the structure of documentary texts and other texts (Nichols, 1991). Moreover, such similarities exist in a wide range of contexts. Furthermore, if documentaries are seen as a type, the various forms of the documentary can be given different names.

The third dimension of the definition concerns the relationship between the documentary and the viewer. According to Nichols' (1991) definition, viewers develop their skills based on interpreting and understanding the processes, which leads them to understand the film. Vaughan (1999, p. 59) pointed out that the documentary would be based on what it appears to present rather than on what it necessarily does. Thus, he mentioned that documentaries made by directors are about persuading their audience that what appears to be, is (Vaughan, 1999). Furthermore, to be sure, documentaries employ audio-visual language. Traditional documentaries exhibit linear principles in that the viewer follows the filmmaker's progression from beginning to end. A clear limit is established as to who is the author and who controls the discourse. The documentary is always described as an objective document of the filmmaker's subjectivity. Nichols' (1991) perspective is systemic, and diverse points of view are considered to describe the documentary.

Regarding the question of what constitutes or builds up the documentary, Nichols (2017) pointed out the following four areas: "(1) institutions that support documentary production and reception, (2) the creative efforts of filmmakers, (3) the lasting influence of specific films and (4) the expectation of audiences". (p. 11)

The four elements of institutions, filmmakers, film and audiences collectively play a role in the shifting notion of what constitutes a documentary. According to Nichols, the continual transformation of what builds up the documentary is promoted due to changes between these elements. Thus, it is no longer a limited product that would present a version of reality but a

documenting process that permits the negotiation of reality. Bruzzi (2006, p. 13) noted that the documentary is a negotiation between the actual events and their presentation, indicating that both are distinct but interconnected.

In *Blurred Boundaries*, Nichols (1994) summarised the status of the documentary:

Traditionally, the word documentary has suggested fullness and completion, knowledge and fact, explanations of the social world and its motivating mechanisms. More recently, though, the documentary has suggested incompleteness and uncertainty, recollection and impression, images of personal worlds, and subjective construction. (p. 1)

In short, in the West, emphasis is placed on exploring how reality is represented and considering the negotiation with reality. Western researchers also consider the documentary from the perspective of the filmmaker, text and viewer. Furthermore, discussions of the relationship between the interviewer and interviewee are addressed. The filmmaker occupies a dominant position, controlling the discourse, which follows the traditional authorship, and the narrative is unmodified. In other words, the narrative of the documentary is unchangeable. As mentioned earlier, the reality shown in a traditional documentary is often a refined version of the reality depicted by the filmmaker, yet it can also be a structured version that relies on how the viewers perceive and understand it.

In China, the concept of the documentary is inextricably linked to actuality/reality. In the 6th edition of *Cihai* (2009), a large-scale standard dictionary and encyclopaedia of Mandarin Chinese, the documentary is defined as a film that reports actual events and everyday life (Xia & Chen, 2009, p. 1031). It takes the actual stories as the object and on-location shooting as the primary approach. It can be subdivided into different categories: newsreel, humanity and natural geography. In *Film Art Dictionary* (2005), which is published by the China Film Press, the term documentary is described in the sense that it should document the existing realities or re-enact the history of the past. Also, the documentary reflects major events or discloses an overlooked aspect of daily life. It is possible to capture material from social life or to show scenes of nature (Xu et al., 2005, p. 73). The so-called reality is an objective existence. As Fang (2003, p. 1) mentioned in *Historical Development of Chinese Documentaries*, the film began with records. For instance, the Chinese documentary first recorded the Peking Opera performance and its social context. Additionally, another prominent researcher, Shan (2005, p. 6), argued that the beginning of the Chinese documentary was also the birth of the Chinese film. As previously described, the definition of the documentary emphasised that fiction and role-playing were not allowed, and materials should be taken directly from real life.

It follows from the above that in China, the definition of the documentary film highlighted its truthfulness and non-fictional nature for a long time, up until independent documentaries with a strong personal style emerged in the late 1990s. The documentary moved from being a concept that was opposed to the feature film to being independent from yet interconnected with

fiction. Indeed, as one would expect, many filmmakers, including Chinese filmmakers, broke and blurred the boundaries between documentaries and fictional films. The feature film enhances the authenticity of the story through the docudramatic approach, and the documentary facilitates the revelation of the truth through fictitious techniques. As a result, the connotations of the documentary have blurred and broadened.

Typical Forms of Documentaries

Since different approaches and challenges are involved in the proposed classifications of documentaries in China and the West, this section describes the widely acceptable classifications in documentary studies.

First of all, Renov (1993) undertook an analysis of the documentary films in terms of a deconstructive approach. He argued that documentaries stand apart from their fictional genre because of their unique historical positions, not their formal ties (Renov, 1993, p. 4). Also, he remarked that different kinds of discourse, such as documentaries, were indeed fictitious, though not entirely fictional (Renov, 1993).

In addition, Renov (1993, p. 21) further suggested a division according to the specific composition process, functions and effects, with four basic aesthetic and rhetorical functions:

1. Recording, revealing or preserving - This imitative feature is prominent in all types of films and is highly connected to the documentary genre.
2. Persuading or promoting - Persuasion is an approach that covers all processes to achieve the social and personal purpose, like the Grierson style documentary.
3. Analysing or interrogating - This is a more rational function that requires the active involvement of the viewer, such as American Direct Cinema, French Cinéma Vérité and the documentaries of Dziga Vertov.
4. Expressing - It is an aesthetic function connected with the documentary form, one of reality itself. Due to the current attitude towards science, it has been considered the least accepted. Like the independent documentary in China, this function of the documentary is similar to pictorial art or poetry. (Renov, 1993, pp. 21–35)

In fact, Renov (1993) stated that all the approaches were not limited to documentaries, however, the approaches witnessed the historical process and diversity of the non-fiction form.

Nichols' modes of representation are the most widely studied and criticised in contemporary film theory (Gifreu-Castells, 2011, p. 382). His classifications were built on a combination of filming styles, narrative strategies and material practices. Early classifications relied on a narrative distinction between a direct and indirect address. The narrative voice implies a direct

address; on the contrary, when there are no voice-overs, like in Cinéma Verité and Direct Cinema, the mode of address is indirect.[6] The direct address follows an "expository mode" and requires the voice-over, which could be the "Voice of God" in the newsreels of the 1920s and 1930s, or a classic narrative voice, as in the Grierson style documentary. Four fundamental documentary modes have evolved over time: the expository mode, observational mode, reflexive mode and interactive mode (Burton, 1990, p. 4). As a final step, in *Introduction to Documentary*, Nichols (2017) identified six different modes of representation, according to his previous theories:

1. Expository mode - The voice-over directly addresses the viewer. It relates to traditional documentaries and relies on images to depict the arguments.

2. Poetic mode - It originated in connection with the avant-garde art that appeared in cinema. The narration is mainly dominated by the flow of images, sounds and patterns. Instead of informing the viewer, it is designed to establish a distinctive sense and feeling.

3. Reflexive mode - It is a reflection on the documentary model itself and on its method of narrating reality. The documentary is a construction of the world that intends for viewers to take critical stances on the forms of presentation.

4. Observational mode - Both the French Cinéma Verité and the American Direct Cinema movement belong to this mode, with their use of portable and lightweight synchronised recording devices, even though there are distinct differences between the two. This mode enables filmmakers to document a version of reality and not interfere with the actions of those being filmed.

5. Participatory mode - This may be considered the origin of interaction in documentaries, mainly through interviews, where the filmmaker's perspective becomes clearer and he involves himself in the discourse being produced. The filmmaker tends to interact with individuals in a more direct way, which has resulted in the emergence of various interview approaches and interventionist strategies, with which the filmmaker can become more deeply engaged with events. They may, in turn, be the story's narrator or describe the event that took place through bystanders or experts.

6. Performance mode - These challenges the foundations of the traditional documentary and questions the boundaries traditionally established by the fiction genre. The filmmaker is genuinely involved in the events and interacts with the viewer compellingly. Moreover, this mode is more concerned with poetry and rhetoric. (pp. 105–109)

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[6] The final documentary, as Nichols refers to Cinéma Verité, is constructed on the character in sync and indirect address (Nichols, 1976, p. 37).

In short, each of Nichols' (2017) modes uses narration and realism resources in different ways and generates different kinds of projects based on these common components. Meanwhile, Nichols' modes of representation have been commonly accepted in China (Liu, 2007, p. 480; Wang, 2020, p. 33; Nie, 2018, p. 102).

In China, the documentary genre has always been a vital issue in documentary studies, and many different opinions have been expressed on the classification of the documentary. An ultimate consensus has not yet been reached due to its vagueness and uncertainty. The classification of the documentary encompasses several viewpoints and positions. In *Outline of Chinese Television*, Yang (1998, p. 13) noted that, from the perspective of China's new documentary movement, the documentary could be divided into three modes: the Jishi-ism mode, political mode and artistic mode. From an ethnic and regional perspective, Li (2014, p. 11) classified the documentary into the Southern School, Chongqing School, Tibetan documentary, Shanghai School and Beijing School, among others. For instance, the documentary of the Southern School emphasises the changes in local people's lives as a way of presenting Lingnan culture. In addition, in 1918, Commercial Press established a film department and classified films from the perspective of their contents/subjects: scenery, newsreel, educational, costume and new series. Based on this point of view, Ren (1997, p. 7) divided the documentary into newsreel, historical documentary, commentary documentary, social documentary, artistic documentary and television scenery film. In *Introduction to Documentary Film*, Ouyang (2004, p. 3) defined six types of documentaries: newsreel, theoretical, historical and cultural, humanistic and social, natural and scientific and anthropological.

At present, apart from Nichols' six modes of representation, the classification of the documentary from the perspective of communication platforms and historical developments is also affirmed and recognised in China.

There are two official annual publications of documentary research. One is the *Study Report of the Development of Chinese Documentary in 2020*, edited by Zhang and published by the Documentary Centre of Beijing Normal University. The other is the *Annual Report on the Development of Chinese Documentary (2020)*, edited by He and published by the China Documentary Research Centre of Communication University of China. These annual reports, written from the perspective of production and distribution platforms, divided the documentary into documentary films, television documentaries and new media documentaries (Zhang, 2020, p. 10; He, 2020, p. 8). In this context, the concept of the new media documentary is set apart from conventional television documentaries and cinematic documentaries. Traditional documentaries are generally broadcast through television channels, film clubs and theatres, among others. If new media is considered the new platform, new media documentaries can be interpreted in a simple sense as documentaries aired through new media platforms/channels, but this is just a simple summation of the concept of new media and documentaries (Wang & Wang, 2017, p. 98). Therefore, the new media documentary should also be a deep penetration and integration between the two, with Internet characteristics. Chen (2019a, p. 75), from the Communication

University of Zhejiang, defined the new media documentary with three aspects. First, the distribution channels and platforms of the new media documentary, as well as the users, are based on the Internet and mobile terminals. Second, the new media documentary embodies the Internet's characteristics, which changes the manner of its production and the relationship between the viewer and the filmmaker, as well as alters the users' habits and behaviour. Third, the new media documentary draws on new technologies such as computer technology, networks and mobile technologies. Compared to the conventional documentary, the new media documentary has distinctive characteristics in terms of content, form and distribution, adapting to the communication and viewing habits of Internet and mobile Internet users. As highlighted by numerous researchers, new media documentaries are available for broadcasting, forwarding, commenting on and interacting with on mobile apps or online platforms. In other words, the new media documentary has more prominent new media characteristics (Zhan, 2019, p. 122; Xu, 2021, p. 145; Yu, 2017, p. 52). These classifications are currently generally accepted by the Chinese public and film industry (Nie & He, 2014, p. 55; Liu & Guan, 2019, p. 28; Li, 2018, p. 61; Li, 2014, p. 10).

Some scholars, such as Shan (2005), Fang (2003) and He (2005), who have already been introduced, classified the documentary chronologically and summarised several specific important historical nodes of film movements or styles. Based on different periods in its history, the documentary has had different purposes and presents different styles (Tai, 2019, p. 58; Niu, 2016, p. 96; Ma, 2008, p. 122), such as the war documentary, the documentary as figurative political theory, the television documentary with Chinese characteristics and the documentary under the wave of Jishi-ism. Furthermore, there is the pluralistic documentary era (Zhao, 2008, p. 71).

The war documentary records the events taking place during battle. "*War in Wuhan*" (1911) and "*War in Shanghai*" (1913) document the Chinese Revolution of 1911. These two documentaries chronicled the historical events of the revolution and pioneered the type of Chinese documentary that focused on the daily struggles people care about, highlighting the influential events that happened at that time.

In the documentary as figurative political theory, most of the work utilises clear arguments or explicit viewpoints with propaganda and a strong educational purpose, which reflect the distinct political ideology of the entity responsible for the production of the documentary, with the social consciousness being more significant than the individual one. Soon after the Cultural Revolution began in China, the subjects of the documentary were closely tied to its movement, and the documentary turned into a vehicle for politics in that period.

In the case of the Chinese television documentary, after the 1980s, due to rapid technological innovation and the popularity of television, large-scale television documentaries occupied a major position in the production of Chinese documentaries, with documentaries such as "*Story of the Yangtze River*" (1983), "*The Silk Road*" (1980) or "*The Yellow River*" (1988) being particularly important. These works represented the society's fascination with traditional

civilisation, effectively rebuilt national self-confidence and instilled a sense of patriotic enthusiasm.

The Jishi-ism documentary, or the new documentary movement in China, emerged due to the use of synchronised sound and follow-up footage and the elimination of the filmmaker's viewpoint. "*The Great Wall*" (1991) is the culmination of the work of that time. After that, under the influence of the Direct Cinema represented by Frederick Wiseman, the concepts of dispassionate observation and rejection of narration became the higher objective pursued in Chinese documentary production. The Jishi-ism documentary reached its peak in the early 1990s.

All forms of the documentary have undergone a dominant phase in certain regions; however, they are often combined and adapted throughout documentaries, which brings us to the pluralistic documentary era. For instance, the term micro-documentary began to be widely used in late 2012 with the Phoenix Documentary Awards' creation of the "Best Micro-Documentary Award" (Li, 2014, p. 15). Unlike any other documentary form pioneered overseas, the micro-documentary is an original type with Chinese characteristics. In today's world, micro-documentaries are primarily presented in the form of short videos, adapting to the need for the fragmentation of content in the mobile Internet era.

It is clear that Chinese scholars have classified the documentary from a historical perspective, giving it a linear developmental style. However, most documentary types/forms, like Nichols' classification modes, may have existed right from the advent of the documentary, despite the fact that they follow the constant linear time frame with an underlying tendency towards the integration of the types. The classification of documentaries in terms of historical development with attention to the styles and functions of documentaries in different epochs shows that each period is not just about a unique genre or style.

As reviewed, the documentary was a blurred genre from the start. The co-existence of documentaries and fictional films in contemporary filmmaking has indeed breached both genres' aesthetic lines to the extent that the limits between reality and fiction no longer exist. The animated documentary, for example, is an illustration of this notion, which is one of the latest integrations between documentary and fiction. It has been possible to observe the development of animated documentaries since the release of *The Sinking of the Lusitania* in 1918. Animated elements were applied to the documentary, and the emergence of documentary work mainly using animated materials as their resources significantly overturned the traditional belief that the documentary is based on natural materials. Thus, the term animated documentary remains highly controversial in the theoretical world, but its existence is an indisputable phenomenon.

Nowadays, the early and traditional modes of the documentary have not disappeared, rather, they coexist with new ones. In a specific field, portraying the historical world in a truthful manner is not only a matter of considering a specific form of expressing its reality, but also a matter of negotiating power within the historical context as such (Nichols, 1991, p. 67).

New Media and Technology Convergence

Before we concentrate entirely on the interactive documentary project as a new form of documentary in the fourth chapter, descriptions of key media terms and the characteristics and types of the new media in China and the West are needed. From traditional media to new media and from the beginning of the Internet to the present, the integration of various media and technology convergence as crucial factors will be emphasised. This chapter will also examine the differences in media environments that have emerged in China and the West in the context of Internet development and technology convergence, as well as the multiple possibilities for interactive applications. In order to complement this background description, an overview outlining the current platforms and software for documentary/project production and distribution in China and the West will be provided.

Some Notable Media Terms

Media

In China, the word medium 媒介 was first found in *Zuo Zhuan*, which covers the period from 722 BC to 468 BC (Du, 1977, p. 79). It referred to a matchmaker who tried to arrange marriages and a recommender who introduced talented people to the upper class in the early times. Today, the concept of the medium has changed to some extent. In the sixth edition of *Cihai* (Xia & Chen, 2009, p. 1543), a large-scale standard dictionary and encyclopaedia of Mandarin Chinese, the medium is defined in four ways. First, it as a matchmaker, who matches two individuals together, usually for marriage. Second, it is a person or thing that brings two parties into a relationship. Third, in the context of art, it is the method or technique of expression of the artist. Fourth, it stands for the binders and removers of paint pigments. As can be seen, the word medium, which was previously used only as a noun, but is nowadays used as a verb or noun, also has an extended meaning: people and things that act as connections/ties. This definition is also close to the current meaning of media, a tool that people use to transmit and exchange information (Gao, 2015, p. 155). In Western countries, the word medium is derived from the Latin word "medius", which emerged in the late 16th century.[7] A medium is defined as an in-between or go-between, a messenger, a channel, a kind of intermediary space where something reaches something else through some means, a tool or a path.

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[7] In *Oxford Advanced Learner's Dictionary* (2010), the word medium is noted, which appeared in the English language in the late 16th century.

The word media 媒体 is interpreted briefly as a tool for communicating and disseminating information, such as newspapers, the Internet, radio, television and more (Xia & Chen, 2009, p. 1543). In another authoritative dictionary, the seventh edition of the Contemporary Chinese Dictionary (Fan & Li, 2016, p. 887), edited by the Dictionary Editorial Office of the Institute of Linguistics of the Chinese Academy of Social Sciences, the same detailed description of media can be found. It is easy to see that the definition highlights the instrumentality of the media itself, indicating that media is a tool for dissemination and communication.

In *Understanding Media: The Extensions of Man*, McLuhan (1994) described the medium as the message itself. From McLuhan's (1994) perspective, a medium shapes human experience and society, not by the content it mediates but mainly by its formal and technical properties as a medium. He gave the example of the lightbulb that, while not having any content of its own, illuminates the darkness and, as a result, extends the time of human social interaction and deeply influences social life. Understanding the medium does not mean primarily understanding individual mediums, like a movie, the press, a car or a typewriter, but getting to know them from the point of view of the medium itself. McLuhan (1994) intended us to focus on media independent of the content, and in this process, to redefine media itself as content, not just as a vehicle or channel. With the advancement of technology, the medium evolves into a single collective media that can be focused on in and of itself. Hence, McLuhan (1994) conceptualised media as an "extension of man". In other words, the book is an extension of our eyes; the radio is an extension of our ears; the stone axe is an extension of our hands; the wheel is an extension of our feet; clothes are an extension of our skins; and so on. Media can be connected with the human organism in a certain way; the medium is an extension of the physical nature of man.

Kittler (1999) argued that media constitutes the infrastructural conditions of the possibility to understand itself; it is the infrastructural basis of experience and understanding, that is, the quasi-transcendental condition. As such, media determines our situation. Media can no longer be considered neutral, subordinate or complementary to the information it conveys.

An important point to highlight is that the conceptualisation of media as an environment for the living is distinct from the conception of media as a technological entity or system. McLuhan's (1994) concept of media encompasses the totality of technical, social and aesthetic reality. He characterised media as a technical means of interaction with the human senses, the physical world and social life. It follows that, from the outset, media can be used to designate any kind of technically specific mediation linked to a specific medium. Media is a vehicle or channel for the storage and transmission of information. Simultaneously, media is also regarded as the technical means of transmitting information to the receiver. As the medium evolved into a single collective media, many contemporary researchers concentrated on media, media integration and pluralistic media, regardless of the ontological dimension of media. Since then, the emphasis has been on the fundamental relationship between humans and technology. Media deals not only with the extension of human senses but also with the injection into the structures

of feeling and life forms that constitute human subjectivity and collectivism. Thus, the transformations and revolutions of media have brought possibilities and changes to individuals and society.

Analogue and Digital Media

The documentary genre came into being with the advent of the cinematograph at the end of the 19th century. Although the digital medium emerged half a century after documentaries, it has grown at a truly astonishing pace. In terms of their ways of working, fundamental differences can be found between analogue media and digital media. Before the digital era arrived, the operations of every media were based on an analogue approach, namely, by replication or imitation. An analogue is the equivalent of a transcript.

At the physical level, analogue media combines mechanical and physical components. Analogue media uses a physical component to encode information, which has to be paired with a device able to read this particular code in order for the media to function. In this way, analogue media is characterised by its physical nature and the need to match a particular decoding device. In analogue media, for instance, the artists transcribe a specific object onto a physical medium, such as stones (sculptures) and paints (paintings).

Today, media no longer uses a transcribing process; instead, it implements digital content conversion. The content of digital media is made up of numerical codes and media devices are built to read them. Binary coding, the most prevalent digital system, turns information into a series of 0s and 1s without any physical variables. Any machine capable of reading binary code can understand, store and replay the information in this type of shared code system. Therefore, the process of digital conversion involves converting different physical elements such as texts, sounds and images into bits of information, resulting in a unique package of information that is considered to be the only medium and interactive program. Pre-digital music, for example, had to be recorded through conventional media technologies. For example, vinyl records music with its grooves, and cassettes do so by changing the electromagnetic characteristics of their ribbons. As such, every single object has to be coupled with one particular device, like the gramophone or the tape player. And yet, most of those who grew up during the digital era have become accustomed to digital music. Therefore, it is common to store and play music digitally on a wide variety of platforms and devices, such as desktops and tablets, just to name a few.

As Gifreu-Castells (2010, p. 86) mentioned, the digital medium is considered to be any practice that originated from either the analogue or digital medium and became particular digital codes when their signals were processed. In short, analogue transcription always has a physical medium, like stone, cloth or paper. But in the case of digital conversion, the processor of the computer is merely occupied by a series of numerical codes.

Traditional Media

The term traditional media is centralised and communicates to a (normally anonymous) public audience with one-way technology, such as a channel that broadcasts news, education, entertainment, and other information through a specific physical object. Thus, the term traditional media contrasts with that of new media. In a broad sense, traditional media refers primarily to mass media, including television, radio, newspapers, periodicals and other media, as well as cinemas, physical bookshops and audio-visual products.

Currently, it is widely accepted by Chinese researchers that the main forms of traditional media are newspapers, periodicals, television and radio (Tao & Zhang, 2001, p. 23; Xiong & Liao, 2003, p. 53; Hou & Xu, 2006, p. 2; Gong, 2007, p. 13; Zhu, 2016, p. 7). Among them, newspapers and periodicals are examples of print media, while TV and radio are examples of analogue media. However, this is not to say that new media will replace traditional media; frequently, new media complement and work hand-in-hand with traditional media to accomplish organisational goals. CCTV Evening News, for instance, can be simultaneously watched on a TV and an online webpage or mobile device. Furthermore, the information disseminated through traditional media can be converted into digital codes, which enables information to be stored, edited, carried, shared and disseminated quite conveniently. As a result, more and more media forms are emerging, and traditional media converge with new forms in technological change.

It should be noted here that Chinese researchers are accustomed to using terms such as traditional media and new media to interpret and analyse the transformation and integration of media (Du, 2015, p. 4; Wang, 2021, p. 25; Li, 2010, p. 205; Zhi, 2011, p. 6; Yan, 2016, p. 76). These studies focus on the content of media, preferring to consider media itself as a form of information exchange.

New Media

Currently, other terms such as new media, network media, social media, we-media[8] and integrated media might be found in journalism or academic discussions of digital media in China. Among these, the term new media is most commonly used (Kuang, 2014, p. 4), and similarly, the research literature on new media is the richest (Table 4). To date, China's National Knowledge Infrastructure (CNKI)[9] has become China's largest and most widely accessed

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[8] As Wuhong (2016, p. 2) explained, we-media (also known as self-media) is an Internet-based platform. With its space for users to blog and post their audio and videos, users are granted a unique and autonomous identity. Aside from the traditional platforms, such as blogs, there are others that are increasingly prominent, such as live streaming platforms and video platforms.

[9] China's key national scientific research and information publishing institution. It has established a well-rounded, integrated knowledge resource system in China that includes periodicals, dissertations, master's theses, conferences, statistical yearbooks, e-books, etc.

online academic library (Zhao & Qiu, 2005, p. 626). Therefore, terms like new media, network media, mobile media, integrated media, omni-media and new media technology will be interpreted here as a way to indicate the similarities and differences between Chinese and Western views on media research.

Table 4

The Amount of Literature on Media-Related Themes in China's National Knowledge Infrastructure (CNKI) Until March 2021

Term	Academic Journals	Theses (Bachelor's, Master's and PhD)	Conferences	Newspapers	Books
New media	164600	20200	3456	4811	1584
Social media	80900	4260	1949	756	1365
Traditional media	55800	9900	826	1978	69
Network media	28200	5049	725	529	97
Omni-media	23100	1595	296	985	13
Digital media	19600	1337	421	58	868
Integrated media	17400	679	102	837	7
We-media	17100	3771	270	752	23
Mobile media	2373	157	58	14	147

First, the term new media should be explained. From an etymological standpoint, Chinese researchers (Zhu, 2016, p. 7; Chen, 2011, p. 28; Wang, 2016, p. 1159; Wang, 2019, p. 8; Feng & Wang, 2020, p. 597; Kuang, 2018, p. 4; Shao, 2011, p. 63) generally agree that the term "new media" was coined in 1967 by Peter Carl Goldmark of the Columbia Broadcasting System (CBS) Technology Centre in a proposal on developing electronic video recorders. Goldmark described electronic video as new media, leading to the term new media being coined. Later, in 1969, Rostow, from the United States President's Special Committee on Communication, frequently referred to new media in his reports. Since then, it has gained popularity in the United States and worldwide, becoming a new globally adopted term.

Besides, some Chinese scholars (Kuang, 2018, p. 4; Chen, 2011, p. 28; Tao & Zhang, 2001, p. 3) have referred to the definition of new media given by UNESCO, which considers new

media to be online media. Likewise, media that uses digital technology and is disseminated over the internet is referred to as new media.

Furthermore, Chinese academics have focused on the in-depth analysis of new media in terms of its connotations and denotations.

As Jiang and Xu (2006, p. 24) from Shanghai Jiaotong University pointed out, in the context of its connotations, new media is considered to be a new form of communication that emerged after the 20th century in social information communication based on digital technology. It enables the broader reach and rapid speed of communication and provides a variety of ways to disseminate information; it differs greatly from traditional media. Also, in the view of Wu (2001), the main feature of new media is its deconstruction of the boundaries between traditional media (such as television, radio and newspapers); the boundaries between countries, communities and industries; and also, the boundaries between senders and receivers of information. The development of new media is a process of media integration, and new media is not a new thing; it is an old new thing. According to Xiong (2006, p. 7), from the New Media Communication Research Centre of Tsinghua University, new media is a relative concept. Television is a new medium compared to the radio, however, it is an old medium compared to the portal. So-called new media, digital media or network media is the sum of the media that carries out their communication function using computer-based data processing technology and the Internet. It is equipped with the functions of traditional media but also includes new features such as interaction, real-time, extension and integration (Xiong & Liao, 2003, p. 52).

Regarding its denotation, new media includes fibre-optic cable networks, cable TV networks, computer database communication systems, broadcast satellite systems, the Internet, SMS and multimedia information interactive platforms (Yang, 2009, p. 11). According to Gong (2007, p. 10), portals, search engines, virtual communications, emails, online literature and online games are all examples of new media. Wang (2013, p. 15) and JWang (2019, p. 8) argued that there are three common forms of new media in contemporary society: network media, mobile media and digital television media. Lv's (2020, p. 7) point of view is that new media has rich and diverse extensions, such as portals, social media, live streaming websites, e-magazines, digital games, mobile media and more. Xiao (2016, p. 31) of China Central Television believed that we-media, VR and the media of things (MOT) would become the typical forms of new media. Moreover, Huang et al. of the Communication University of China stated that terrestrial mobile TV, Interactive Personality Television (IPTV) and phone TV are the three main components of new media (Huang et al., 2006, p. 1).

It is clear that new media research in China highlights the connotation of new media through the comparison of new media and traditional media. Compared to traditional media, new media exhibits two significant reforms: the communication carrier has shifted from traditional (analogue) media to computer-based (digital) media, and the providers have changed from authorised media organisations to individuals. In particular, mobile media, social media and we-media flourished quickly, allowing specific individuals to become distributors; this

phenomenon attracted a broad range of social attention. Also, it is generally accepted that new media covers all digital forms of media, including all traditional media with digitalisation, network media, mobile media, digital TV, digital newspapers, magazines, etc. In particular, emphasis is placed on mobile media, network media and we-media. Furthermore, the media research outlines the transformation and deconstruction of the audience-communicator relationship based on the development of the Internet and digital technologies.

In the West, the term new media is also ubiquitous in many ways. Manovich (2001, p. 20) argued that new media will no longer be a medium in any specific sense, but rather, a set of numerical codes of information that are not connected with traditional forms of media; it can be featured in the respective media as needed. Lievrouw and Livingstone (2002, p. 6) concentrated on the message (such as communication and its practices), technology (like the medium) and the social context within which it is employed. Furthermore, new media in connection with other particular technologies, such as telecommunications and digitalisation, were also mentioned.

In the words of Gitelman and Pingree (2003, p. 7), "media in transition" refers to the periods when a medium emerges, thus contrasting and competing with the old media. According to Lister et al. (2009, p. 13), new media encompasses new textual experiences such as computer games, simulations and special effects films; new ways of representing the world like immersive virtual environments and screen-based interactive multimedia; new relationships between subjects and media technologies; and new experiences of the relationships between embodiment, identity and community. Additionally, new media contains new notions of something like the human body to technical media, as well as complex organisational and production systems.

Obviously, researchers from the West and China have used different approaches to describe new media. To a large extent, the differences between these definitions can be attributed to the internal mixing of the research objects, such as medium, technology and social environment. Indeed, in China today, the term media itself may, in some cases, refers to the technology or channel, that is, the medium of communication. Several researchers in China have equated the term new media directly with new forms of communication media, focusing on analysing the connotations of such and the types of new communication media in order to deliver the information in a better way. As a result, new media and technologies are examined to exchange information more efficiently and comprehensively. As Huang (2013, p. 15) noted, new media refers to a communication form taking advantage of both digital and Internet technologies through wireless communication networks, satellites and others, to provide information and entertainment services to its users. Therefore, while the term new media is commonly used, it is only fully described by the term new interactive digital media. In other words, in terms of technology, new media is digitalised, and in terms of communication features, it is highly interactive. In the West, on the other hand, scholars also pay more attention to the nature of media.

McLuhan (1994, p. 7) argued that the medium is the message, and it is a whole new environment that technology has created. Moreover, at this point in society, the nature of media is more important than the content of the message.

Therefore, after describing the perspectives of the Chinese and Western scholars on new media research, it is necessary to summarise some perspectives of new media that are often investigated, such as those from the temporal, technological and morphological contexts, in order for the terms of new media, network media, mobile media, integrated media, omni-media and new media technologies to be explained clearly.

From the perspective of the temporal context, the word "new" is used to imply a time factor, which, however, is a never-ending definition (Wang, 2019, p. 5); something new will always be on the horizon. Therefore, new media is a dynamic concept; the "new" and the "old" of new media are relative and continually updated; each specific era has its own so-called new media. The new media will transform into old media (Wang, 2019, p. 9). Although the movie is a new medium compared to photography, it is an old medium compared to the Internet. New media are still evolving in the dimension of the era and will not or cannot end up in the form of fixed media.

Using the term digital media as an alternative to new media is also not proposed here, as the word digital might refer to the digital production process. If that were the case, more mediums such as outdoor media and metro mobile TV would be listed as digital media but not as new media.

Comparing new media as well as its related technologies to traditional media becomes an approach to explain it. Periodicals, newspapers, TV and radio are all relatively independent and static communication systems. Today, traditional media has been collocated with new media, like e-magazines, e-newspapers and digital TV platforms, to name a few. Traditional media have survived due to the adaption of the use of new media technologies. The new of yesterday is not equal to the new of tomorrow, and traditional media can be turned into new media after integrating network technology and platforms. The concept of new media is always developing. Traditional or pre-existing media have changed, such as photography, animation, television, movies and newspapers, among others. Further integration can be seen in web-based communication and collaboration, such as e-mail, chat rooms, instant messaging, forums, teleconferences, telephones, blogs and VR, which have changed organisations and communication environments.

From the perspective of technology, this is one of the fundamental driving forces of media development. Although different researchers in China have different views on the connotation of new media technology, it is generally agreed that new media technology is based on Internet technology, digital technology and mobile communication technology.

Digital technology is the digitalisation of information; converting information into numerical codes. As mentioned before, it has deconstructed the morphological distinction between different types of media, established the foundations for media integration and permitted the

interaction of information. In this way, digital technology is the basis for new media technology and provides the original impetus for developing new media technology.

The core function of Internet technology is to achieve interconnection between computers; it has the multi-channel communication of new media technologies and opened up the possibility of resource sharing and information interaction. Moreover, since its inception, the Internet has become the primary platform for human communication and the exchanging of ideas.

The implementation of mobile communication technology has liberated users from the limitations of physical networks as well as fixed terminals/devices; users are able to instantly communicate online through mobile networks.

Apart from the three critical technologies mentioned above, big data, the Internet of things, VR and other technologies cannot be ignored. Technological developments have brought about changes in new media technologies, and it is impossible to foresee what new forms of media will emerge within the context of Internet technology.

In terms of its denotation, new media is generally divided into three primary forms: digital interactive TV, network media and mobile media (Kuang, 2008, p. 68; Wang, 2019, p. 9; Wang, 2013, p. 16; Kuang, 2018, p. 8). At present, this is the widely accepted morphology of new media in China, and it should be noted that the subcategories of new media will expand following technological development (Figure 2).

Figure 2

The Denotation of New Media (Referring to Kuang, 2008, p. 68; Wang, 2019, p. 9; Wang, 2013 p. 16; Kuang, 2018, p.8)
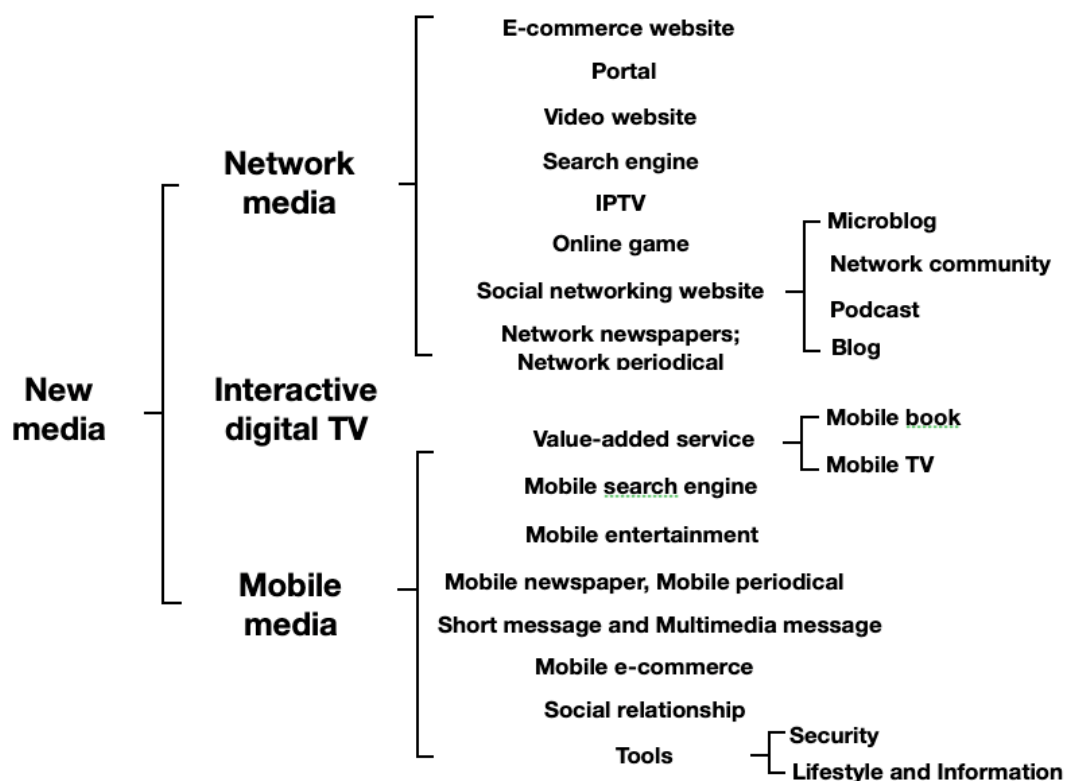
Digital interactive TV refers to the formation of traditional television media through digital technology following digital conversion, transformation and upgrading; the feature of interaction is an essential component of this new media landscape.

After traditional media, network media is one of the most significant forms of new media. It is defined as a communication channel used to link up computer network nodes. Desktop computers, data centres, networking devices and other dedicated servers are examples of computer network nodes. In short, it is a digital, multimedia communication medium that uses computers and televisions as its terminals/devices through which to disseminate information with text, audio video, sounds and images. "Online" is a word that, in computer technology and telecommunications, indicates a state of connectivity, as opposed to "offline", a state of disconnection. It usually refers to an Internet connection; therefore, online media refers to the medium that maintains a connection to the Internet. Here, in China, network media refers to computer-based or PC-based network media such as blogs, social networking websites, portals, video websites, IPTV, and search engines, among others.

Mobile media refers to mobile digital media that provides information in the form of text, images, audio-video and sound through wireless digital technology and mobile digital processing technology. For instance, the mobile book, mobile TV, mobile social networking, and mobile search engine use this channel for disseminating information. Three keywords are set forth in mobile digital media: media, digital and mobile. Mobile media breaks the limits of time, regions and terminals, enabling users to receive information rapidly, which has become an indispensable tool for information dissemination and communication in this lifetime. In short, network or mobile media concentrates on different terminals in China. The term mobile in mobile media highlights its mobile nature and portability.

The term new media, in general, is defined as a media form which, in comparison to traditional media such as newspapers, radio and television, broadens the concept of and refers to the media forms that have emerged under the new technology system. Moreover, new media is frequently considered as a concept that is at a dynamic developmental stage. In brief, new media has embraced digital forms of media that are set up to interpret digital codes, such as binary codes. This is exemplified by the types of new media, which include, among others, social media, we-media, network media, mobile media, digital TV, digital newspapers and digital magazines. At present, it is mainly based on digital technology, Internet technology and mobile communication technology, which provide information and entertainment services to users, enabling the real-time exchange of information and interactive communication.

The Principles and Features of New Media

The Principles of New Media

Before describing the features of new media, Manovich's (2001) new media theory should be considered, as he explored and attempted to map out a definition of what new media is. In his view, new media can be understood as the graphic, moving pictures, sounds, shapes, spaces and texts that have become computable; that is, they are comprised simply of another set of computer data (Manovich, 2001, p. 20). Furthermore, Manovich (2001) provided five principles of new media, which were interpreted not as ground rules, but as broad trends of computerised culture:

1. Numerical Representation - The critical distinction between old and new media, as Manovich argued, lies in the fact that new media is programmable. Thus, any new media is fundamentally a digital representation. When a painting is digitised by scanning, the digital version becomes a copy of the same original image but is composed of pixels.

2. Modularity - A fractal structure of new media. The fundamental elements of each new media object are individually measurable, alterable and reusable. When they are combined, a new media text is generated. Binary can be employed to convert pixels, pictures, text, audio and videos. Manovich pointed out that the entire Web has a modular structure consisting of independent sites and pages. Each page is also composed of elements and code that can be modified independently.

3. Automation - A highly automated system is available to accomplish the production of entities. Automation, commonly seen in computer systems, enables users to work with algorithms to build or edit any form of media. Automation is evident in the operation of post-production video editing. In the Adobe Premiere software, users can specify the start and end of a video, and the software will automatically render all the frames between footage.

4. Variability - There is nothing fixed in any new media form. Every new media object can be manipulated from its original version into endless different forms. Variability can be seen in the different interactive works, and users are given the option to browse projects in different ways, which motivates them to explore and engage.

5. Transcoding - This refers to the process of converting the text of new media to different formats. The collected data is then converted into computerised categories. The way computers transcode and organise data into databases affects the way we create and store it. (pp. 27–48)

It is clear that the new media principles state the universal characteristics of new media objects, which break the previous boundaries between image, text, sound and video. In new

media productions, the opposition between visual and verbal that existed in traditional media is, in a sense, bridged; images and texts are programmable and programmed.

The Features of New Media

Based on new media's general principles, social media and we-media can be categorised as new media, but not all digital media belongs to new media. Here, the characteristics of new media will be listed.

To begin with, the six characteristics of new media are addressed in *New Media: A Critical Introduction* by Lister et al. (2009, p. 13). As media keeps growing and evolving over time, the main characteristics of new media are that it is digital, interactive, hypertext, virtual, networked and simulated. According to Feng and Wang (2020, p. 597), the characteristics of new media encompass four aspects: real-time, interactivity, integration/diversity and personalisation. In *On the Development of New Media in the 5G Era*, Xiao (2016, p. 32) pointed out the characteristics of new media: digitisation, personalisation, fragmentation, interactivity and automation. Another researcher, Zhu (2016, p. 7), believed that new media should be characterised as intuitive, real-time and having large audiences. Also, Du (2015, p. 11) described new media as having four features: multiple information, unique value, personalised interactivity and segmentation. In addition, Wang (2013, p. 23) argued that new media should be digitised, planarised, bi-polarised and open in terms of technology. Likewise, in terms of communication, new media are equipped with the characteristics of interactivity, automation, global sharing, audience customisation and content diversification. Furthermore, Chen (2011, p. 29) emphasised the characteristics of new media as digital, multimedia and networked. Moreover, Kuang (2018, p. 11), from the School of Journalism and Communication at Renmin University of China, noted that interactive features are the fundamental characteristics of new media.

In summary, digitalisation and interactivity are the most prominent elements in the Chinese and Western academics' interpretations of new media features. The Chinese researchers equated new media to communication media, referring to the audience's personalisation and the real-time nature of the information. Finally, hypertextuality and the fragmentation of new media have also attracted the attention of researchers.

Since new media is not only endowed with digital features but also encompasses interactive features, not every form of digital media belongs to new media, but all forms of new media should have digital features. For instance, the digital mobile TV on the bus or the mobile digital screen in the elevator of the office building are both considered digital media, but they do not have an interactive function; therefore, they do not fit into the context of new media, which is digital and characterised by interactivity (Figure 3).

Figure 3

Digital Mobile TV in Nanjing Metro (Nanjing Metro Website)

The New Media Technology and Media Integration

New Media Technology

According to Lister et al.'s (2009) descriptions of the characteristics of new media, including digital, interactive, hypertext, virtual, networked and simulated forms, as well as the previous analysis of the concept of new media from a technical standpoint, network technology and digital technology are considered the fundamental infrastructure of new media development. New media technology, commonly described as Web 2.0, encompasses various network-related communication technologies, for example, social networking and virtual worlds, among others (Friedman & Friedman, 2008, p. 5). As Chavis (2021) noted in *What is New Media Technology*, new media technology, a term that was first established in the 20th century, is most closely associated with the transmission of information that is meant to be manipulated in some way. Zhang (2017, p. 4) also pointed out that new media technology is an abbreviation. New media technology refers to an interaction of data dissemination that depends on digital technology and networked communication technology. In short, new media technology should describe any type of application meant to transmit information through digital techniques, computerised systems or data networks.

Here, new media technologies in China are discussed, emphasising digital technologies and web-related technologies, among which, mobile communication technologies occupy a

prominent place. Liao (2008, p. 121), from the Communication University of China, stated that the new dominance of the media in the future has undoubtedly emerged with a strong trend towards "mobile", whether in politics, economics and technology or in art, industry and marketing contexts. Moreover, *The 45th Statistical Report on China's Internet Development Status* (2020, p. 17) released by the CNNIC indicated that as of the first quarter of 2020, about 904 million people in China have access to the Internet, with an Internet penetration rate of 64.5%. Among these 904 million people, 897 million people were online through mobile devices, and the proportion of Chinese netizens using mobile devices to access the Internet had reached 99.3% (Figure 4).

Figure 4

The Size of Mobile Internet Users and its Proportion in Internet Users (CNNIC)
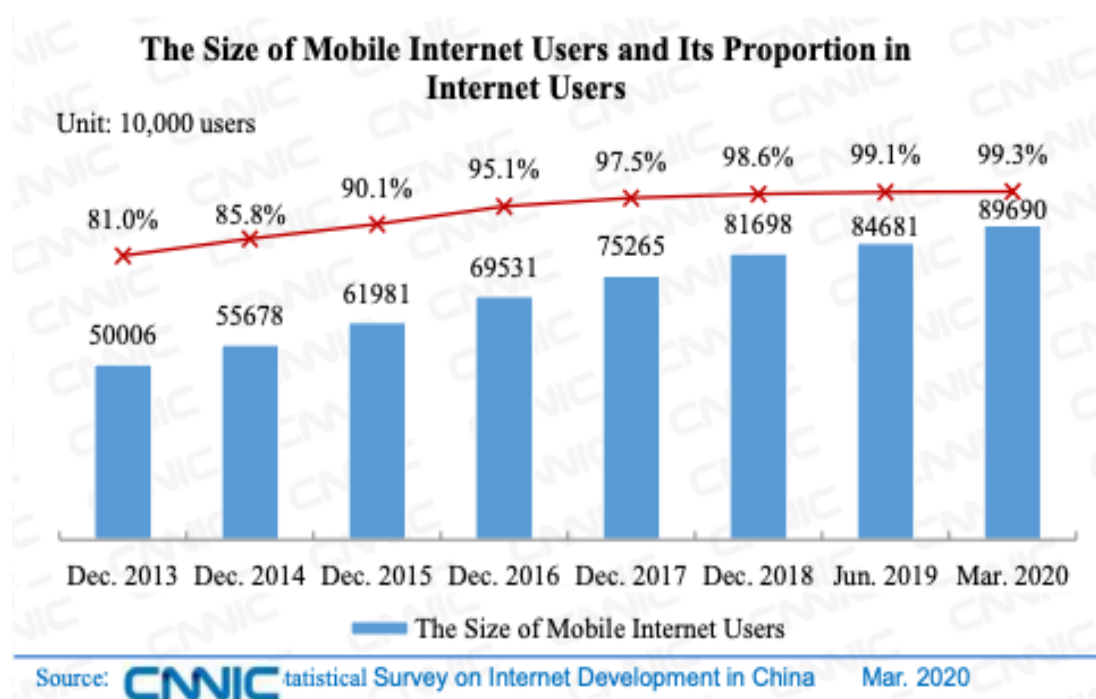
Figure 5 shows the use of Internet access devices in China; the blue bars represent use in December 2018 and the red line represents use in March 2020. As of March 2020, 32.0% of Internet users were using TVs to access the Internet, and the proportion of desktop, laptop and tablet use for Internet access was 42.7%, 35.1% and 29.0%, respectively. Clearly, the proportion of desktop use dropped dramatically. Also, CNNIC statistics have highlighted that since 2014, Chinese users accessing the Internet via mobiles have outpaced those accessing the Internet via PCs. As a result, Chinese Internet users have a greater tendency to employ mobile devices for their online purchases or entertainment activities compared to the Western Internet environment. Furthermore, the Chinese market is a mobile-dominated nation. For this reason, mobile media and related technologies should be presented as an essential component.

Figure 5

The Usage of Internet Access Devices in China (CNNIC)
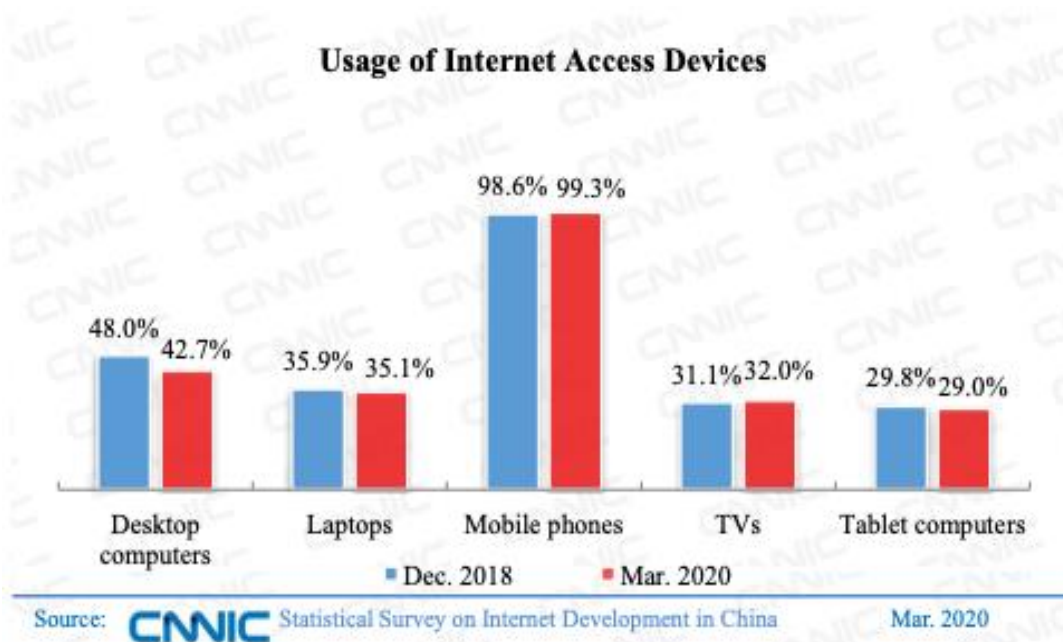
New media technology combines digital technology, network technology, mobile communication technology and other new information technology under the dynamic concept of new media (Wang, 2019, p. 8). The term is applied to forms of mass communication that have interactivity as the feature of dissemination and are accessed via digital communication technology and the use of PCs, mobiles and other devices. It involves the entire process of information collection, processing and transmission. Similar to Wang's (2019) view, Lv (2020, p. 7) considered techniques that integrate digital, network, mobile and other relevant technologies to provide and exchange information to users.

Unmistakably, both Chinese and Western academics agree that new media technologies integrate a wide range of technologies. Technology convergence is a term that is used to describe the convergence between telecommunications, media and information technologies (Gifreu-Castells, 2010, p. 78). Moreover, the first notable phenomenon of global convergence between the different sectors came into being in the mid-1990s, with a world of digital infrastructures and technologies that consumed multimedia information composed of audio, video and data. Technology convergence has taken on different meanings; one such meaning concerns the ability of different network platforms to carry services or similar signals. Another emphasises the use of one device, such as a telephone, TV or personal computer to receive different services.

In recent years, new media technologies have been innovative and are evolving along with traditional media techniques, integrating their resources, information and channels, which brings about a change in media forms and plays an essential role in changing people's lifestyles

and way of thinking. The concepts of information exchange through media have become a powerful application. New media technologies have gradually become prevalent and replaced traditional media, mainly through the introduction of personal computers, digital games and video systems. Artists or filmmakers have used these technologies to bring new concepts to life, creating, for instance, digital artworks and film productions. Nowadays, new media technologies are widely accepted in all areas of life and have led to progress and development in each area.

Beyond the integration of different technologies, new media technologies also emphasise interactive features. Geographic distances were overcome as new media technologies could be applied to almost every market in the world. Besides, the different levels of the interactivity of information exchange enable users to adapt to new approaches while making their own contributions. Furthermore, previously isolated forms of communication, like telephone and radio, can be merged.

Based on the convergence and interactivity of new media technology, the boundaries between media have become blurred. Instead of competing with each other, the various platforms tend to complement each other. For example, it is possible to access the same information from different terminals. Concerning traditional media, the major Chinese newspapers People's Daily and China Daily essentially offer their web version and mobile app, as well as build their own accounts on different social media platforms to synchronise the news. Also, users can watch CCTV programs on television as well as in real-time via mobile apps and computer webpages. What used to be a single media platform has now converged to form integrated media; when using mobile network technology, different activities are available on one platform. For example, when using WeChat, users can check their e-mails, make video calls, shop online and perform banking, to name a few. Therefore, new media technologies contribute to media integration.

Media Integration and Integrated Media

On 23 March 2017, the Xinhua News Agency, the official state-run press agency of the People's Republic of China, introduced the concept of media integration in a report titled *Senior CPC Leader Calls for Media Integration*. Unlike the previous translation of media convergence, the Xinhua News Agency used the term directly in the headline to indicate media integration. This was the first time that an official source in China used the concept of media integration. As for the term integrated media, it was coined by the China Foreign Language Publishing Administration and the Chinese Translation Association (2019)[10]. Based on this, the thesis will use

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[10] A conference on the translation of key political vocabulary was held on 24 May 2019, to which over 40 experts from central ministries, state organs, press and publication units and universities were invited. This conference published 27 vocabulary translations, including integrated media. http://www.tac-online.org.cn/index.php?m=content&c=index&a=show&catid=395&id=3485.

these two terms to explain the differences between Chinese and Western new media environments.

The connotation of media integration encompasses two ideas. In a particular sense, media integration refers to the convergence of different forms of media, leading to qualitative changes towards the new form of media, such as e-magazines and news blogs (Shan, 2016, p. 145). In the broad sense, media integration takes on a more comprehensive context, including the aggregation and fusion of all media and its related components (Liu & Huang, 2015, p. 1). For example, this involves the convergence of media forms and the integration of media functions, the approaches of communication, ownership, organisational structure and other essential elements of media. Simply put, media integration is a new model in the context of diversified information transmission channels. Shan (2016, p. 147), from the New Media Institute of Communication University of China, pointed out that media integration refers to the efficient combination of traditional media, such as newspapers, TV and radio stations, with new media, such as the Internet, mobile phones and portable smart devices. It also involves sharing resources, centralising processing and generating different forms of information available to audiences through different platforms. Therefore, media integration is a new concept of media development within the information age, and it is an organic integration of traditional media under the trend of the growing Internet.

The term integrated media describes the integration of radio, television, newspapers and other media that have commonalities and complementarities in terms of workforce, content and publicity. Also, it implements the concept of new media communication in the sense of "resource integration, content integration, distribution integration and co-profit" (Huang & Guo, 2019, p. 21). As Zhou (2020, p. 29) suggested, integrated media is innovative media that integrates and cooperates with different forms of media and provides various services to meet user needs. In short, integrated media is not an independent entity media but a mode of operation that integrates and utilises the advantages of radio, TV and the Internet to enhance their functions, means and values. It is a scientific approach as well as a concrete practice. Therefore, integrated media focuses on the integration process, and is the result of media integration.

Media Integration in the West

In 2019, global Internet user growth slowed down and stabilised as the media industry explored new growth strategies. According to Meeker's (2019) Internet Trends Report, the global Internet user population reached 3.8 billion in 2018, with Internet penetration exceeding 50% of the world's population, and the global Internet industry revenue growth slowed to 11% in the first quarter. The report also pointed out that smartphones are the primary Internet device for many people worldwide. As mobile users spend more time on their devices, Internet firms explore innovative ways to retain their users. In the *Annual Report on the Development of New Media in China 2019*, compiled by the Institute of Journalism and Communication of the Chinese Academy of Social Sciences, it was reported that Spotify, a music streaming platform, has

launched a premium service that attracts users to pay for subscriptions, with a total of 124 million paid subscribers. In Latin America, Rappi is a digital on-demand delivery platform; in Southeast Asia, Shopee is a mobile-dominated strategic social commerce platform; and in India, Reliance Jio launched the 5G technology for its telecommunications companies (Huang & Liu, 2019, p. 51). Therefore, it is clear that mobile devices have become a significant part of media integration that cannot be ignored.

In the face of the impact of new media, traditional media is not losing its position but rather, discovering a new way to function in the process of integration. On the one hand, traditional media transforms the way news is produced and incorporates social media as an essential reporting source. In 2018, 5% of the news in traditional media was cited from Facebook and Twitter, including international politics and breaking news. On the other hand, new media cannot replace the uniqueness of traditional media in the local journalistic ecosystem; the Pew Research Centre (Amy, 2019) found that 41% of users in the US prefer to get local news from the TV instead of the Internet, newspapers and radio since the content is relatively localised. In an attempt to renovate and upgrade, traditional media has made an effort to explore the paid-for news model and has achieved specific results. According to a Reuters (2019) report, users are more willing to budget for entertainment programs than news products. Paid news subscribers have only grown slightly around the world, with the size of paid subscribers in the US stabilising since 2017 and a growth of paid subscribers mainly being observed in the Nordic countries, with the Schibsted media company focusing on premium niche programs and hybrid subscription models that reach around 80% of consumers in Norway and Sweden. Therefore, most users prefer to subscribe to a single news product in the long run, and the traditional media paid-for news model can only be one of the directions of diversification. Establishing core content in a complementary and converging model is a significant direction in reconstructing the value of large media groups (Qi & Liu, 2019, p. 233). CBS and Viacom have combined into ViacomCBS Inc., with the intention to create a world-class multiplatform media company by incorporating valuable content (Tracy & Lee, 2019). Traditional media organisations reorganise the media landscape by combining with other organisations.

The way users access information is also shifting, with news being disseminated on social media becoming more personal. Users in countries such as Brazil and Malaysia tend to use platforms like WhatsApp to discuss and share news, although Facebook is still an important social platform. News platforms based on smart devices are growing rapidly. For instance, Apple News and Upday are gradually becoming essential platforms for accessing information. Among iPhone users, 27% use Apple News, which exceeds the market share of the Washington Post application (Huang & Liu, 2019, p. 52). Also, video, audio and portable devices have become the growing points and directions for the development of the media industry, and new technologies like big data and AI are being used in multiple fields as a way to analyse and gain insight into user preferences and diverse needs, resulting in substantial changes in the new media industry. For instance, in 2019, the popularity of podcasts offered new opportunities for

change in traditional media. According to Edison Research (2019), podcast audiences grew significantly in 2018, with more than half of the American population over the age of 12 listening to podcasts. Whitman (2019) pointed out that the podcast industry should be the next billion-dollar media market by the end of 2020.

The media environment in the West also reflects pluralistic integration. First, the vital position of mobile media is emphasised, followed by traditional media taking active steps to reconstruct the media landscape, exploring the high-quality paid content model and deepening the integration of news platforms. In addition, applications and their respective content were developed based on the integration of social and video platforms, making it possible to bring forth remarkable transformation and create development pathways. Also, traditional media is attempting to attract young users of new media platforms while building up a more creative momentum. Finally, AI technologies such as big data and machine learning are being used to capture user needs and launch personalised content, resulting in a diversified revenue model.

Media Integration in China

Since 2019, media integration in China has been developing profoundly; the media landscape is revealing new trends and dynamics, 5G technology is driving major innovations in the new media environment and the omni-media[11] landscape is reshaping the industrial ecosystem (He et al., 2021, p. 363). The micro-video is refining its business model based on its large-scale user and traffic base. Mainstream media are actively building an integrated media pattern and enriching the practice of breaking news. For instance, the radio and TV stations are creating a "radio and television + newspaper" model to accelerate their transformation and upgrade (Huang & Liu, 2019, p. 50).

In China, the Party and the State actively deployed the new media development strategy, as well as formulated and published several relevant regulations and policies, thus ensuring a favourable political and social environment for new media development (The Xinhua News Agency, 2019). On 25 January 2019, President Xi Jinping underlined that media professionals should push for the deep development of media integration based on information innovation. Therefore, the current situation in China requires not only deep media integration, but also a path towards the future development of the media industry and public opinion.

In the context of in-depth media integration, the omni-media layout is inevitable and drives the process of media integration. The omni-media blueprint derived from the development of new media has profoundly affected all aspects of communication subjects, channels and methods (Chen, 2019b, p. 4). The concept of omni-media appeared after the term new media, transmedia and multimedia (Ning & Ke, 2016, p. 405). In a narrow sense, omni-media is a new type

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[11] According to Ningning, omni-media covers all types of single-form media. It is a pan-media concept covering multiple communication channels. In the omni-media era, where everyone can make their voices heard, media products take advantage of information technology to improve the communication effect.

of communication that adopts multimedia forms (text, audio and images), combines different types of media (TV, newspaper and radio) and meets different audiences' needs through multiple devices (computer, smartphone and tablet) to disseminate and consume information in a comprehensive way (Lv & Chang, 2019). Depending on the needs of different audiences, the omni-media picks the most suitable platform that provides subdivided services, thus achieving all-round coverage and optimal dissemination. In a broader sense, it is more about the balanced and harmonious integration of content, channels, technology and production, rather than a partial and biased reliance on any one of them. Specifically, omni-media enables anyone to obtain any information at any time, from anywhere, with any device through radio and television networks, mobile networks and the Internet (Luo, 2010, p. 82). It is essential to emphasise here that the conceptions of integrated media and omni-media are distinct, and thus, are often confused. As explained before, integrated media simply means that information is disseminated using the different multimedia forms available on different platforms/channels. The difference between the two types of media is that integrated media aims for the convergence of different media, while omni-media focuses on the entire range of media, using various routes leading to the same destination (audience); one source is processed and transmitted to multiple media platforms/channels. Therefore, omni-media uses all possible media platforms and channels to create a vast content distribution and transmission system. For example, during the Two Sessions[12] in 2017, an Augmented Reality (AR) scan feature of the People's Video App was used for watching the Two Sessions live, which gave its users a sense of immersion (Huang, 2019). Also, in 2019, Guangming Daily launched the "*Guangming Political Commentary – AI Xiaoming talks about the Two Sessions*", which uses AI virtual hosts to perform topic interactions and has enhanced the entertainment aspect of user participation (Zhu, 2019). China.com also offered the H5 interactive product "*Singing the government report to you*", which allowed the user to answer some questions relevant to the report and then unlock the corresponding musical songs (Tang, 2019). In other words, media is not only about the audience viewing and hearing the content/information, but also about them participating and interacting with it. Omni-media is often considered a consequence of the practice of integrating various channels/platforms. It emphasises the integration of traditional media and new media to disseminate information/content, as well as the importance of displaying the content in multimedia formats, such as text, images, sound and photonic technology. Users can also access certain content through more channels/platforms and have a richer interactive experience.

The media industry is discovering new approaches and patterns in the process of convergence. According to QuestMobile (2020), as of November 2019, the number of devices of

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[12] The Two Sessions (NPC & CPPCC National Committee annual sessions) refers to annual plenary sessions of the two organizations that make national-level political decisions: the National People's Congress (NPC) and the National Committee of the Chinese People's Political Consultative Conference (CPPCC).

monthly active users[13] in China reached 1.135 billion, with the growth rate of users decreasing to 0.7%. Pinduoduo, China's largest agricultural-based technology platform, opens the door to new economic trends, known as consumer-to-manufacturer (C2M), linking consumer preferences with manufacturers to drive the market down. In 2019, the number of active buyers on Pinduoduo reached 585.2 million (Pinduoduo Inc, 2020). As for Meituan-Dianping, instead of being limited to group purchases and take-outs, it has extended itself to several local businesses such as accommodation, catering, retail and travel, drawing on big data and user preferences to match consumers with local micro-enterprises, thus reducing production costs and tapping into an enormous potential local user base (Huang & Liu, 2019, p. 53).

The popularity of mobile devices and the advent of new technologies have further contributed to mobile payments. The emergence of mobile payment methods like QR codes, biometric recognition and electronic toll collection (ETC), along with facial recognition-based payments, has been increasing. According to the statistical report released by the CNNIC (2020, p. 40), as of March 2020, the size of China's mobile payment users reached 765 million. WeChat is no longer limited to being a unique social platform but instead uses "mini-programs"[14] to move the social platform towards its transactional features. The user can browse products and complete online checkouts through WeChat. Moreover, music platforms, social platforms, e-commerce platforms and video platforms have also introduced live streaming features to increase revenues by integrating their resources. In short, the "Live+" (such as live + e-commerce) model (Xia et al., 2021, p. 407), as well as all-in-one applications (like WeChat), are currently trending in China, and both are part of the larger media integration environment.

In 2019, with the accelerated progress of 5G commercialisation and civilian use of such in China, mobile smart devices were released in succession; micro-videos became a development trend based on the large-scale user and traffic base; the mainstream media actively constructed a new media integration layout; and the integration practice of breaking news and integrated media works was diversified. Thus, the status of media integration continued its upward trend.

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[13] Companies use Monthly Active Users (MAU) to calculate the number of unique users who have visited the site in the past month. At this point, the parameters used in calculating MAUs are not exactly the same. In the case of QuestMobile, monthly active users are the number of users who launched the app during the statistic period (month). The statistics are de-duplicated by the user's device. It indicates the number of devices that have launched the app at least once during the statistic period (2019, p. 115).

[14] In terms of the WeChat ecosystem, mini-programs are referred to as "sub-applications". They make it easy for their users to access additional functionalities such as e-commerce, task management, discounts and other services (Cheng et al., 2020, p. 1444).

Platforms and Software for Interactive Documentaries

The New Media Platforms

According to Zhu (2016, p. 8), a platform is an engineering concept that was later introduced in the field of economics, referring to a space or place of transaction. The new media platform emerges within the context of the new media environment, which is an area of content integration, information dissemination and interactive communication. It can be described as an open and comprehensive service platform. New media platforms primarily involve two aspects (Zhu & Peng, 2013, p. 23). One aspect is the devices/terminals, such as PCs, laptops, tablets, cell phones and digital TVs. The second aspect is the communication channels, which mainly include video websites, forums and mobile social networks.

Chang and Li (2019, p. 6) indicated that new media platforms are grouped into five types. The first type is the semi-closed platform, such as WeChat and QQ official account platforms. This type of platform has high-level content requirements, primarily targeting subscribers looking for the delivery of specific content. The second type is the micro-news platform, which is adapted for quick reading and provides short content publishing, such as Sina Weibo or Twitter. The third is the we-media platform, such as Headlines or Sohu. This type of platform includes a suitable referral mechanism for sharing media professionals' content with users more efficiently and conveniently. The fourth type is the video platform, such as iQIYI, Youku and YouTube. The last type is the Q&A platform, such as Baidu Q&A, Zhihu and Quota. In *The Research Report on the Transformation and Development of Media in the West 2019*, Qi and Liu, from the University of Chinese Academy of Social Sciences, highlighted three types of Western media platforms: video platforms, podcasting platforms and mass media streaming platforms (Qi & Liu, 2020, pp. 246–251). Also, according to Moses (2014), media platforms act as technologies and standards that allow the author or other "producer", as well as the user and other "consumer", to interact more effectively. For example, Facebook, Twitter, Instagram, Pinterest and other platforms connect media professionals and authors to consumers on those platforms.

Nowadays, the term platform is commonly used, but it is not easy to reach a consensus on the nature of a new media platform. However, it is clear that the new media platform encompasses at least these four features: (1) it integrates a variety of new media technologies such as mobile network technologies, interactive technologies and digital technologies; (2) user-generated content and user interaction are its prominent attributes; (3) it allows the users' information to be linked to those of other individuals or groups; (4) the user is able to generate or post specific content on the platform and interact with other people. For example, social platforms are a form of new media platform.

The Platforms and Software

Based on these new media platforms, an overview of the current platforms and software for producing and distributing interactive videos in China and the West is provided.

5G has technical features such as large bandwidth, low latency and broad connectivity (Tang et al., 2020, p. 43). In China, among the 5G application scenarios, video streaming is considered the most essential and innovative service of the 5G era and attracts the attention of different sectors of society (Xiao, 2016, p. 5). With emerging technologies like 5G, ultra HD and VR, the production and distribution of audio-visual products in the industry may take a new turn. The National Radio and Television Administration has followed the waves of technological revolution and pushed the construction of a new 5G video industry, introducing the concept of "5G advanced-format and new-concept videos" (Liu & Deng, 2020b, p. 1).

The White Paper on China's 5G Advanced-format and New-concept Video-Interactive Video Technology (Liu & Deng, 2020b, p. 1) issued by the Department of Science and Technology of the National Radio and Television Administration stated that interactive videos play a significant role in the 5G advanced-format and new-concept videos genre. This type of video has interactive capabilities such as path selection, perspective switching and interactive displays, all of which are able to provide the user with a strong sense of participation and immersion in the interactive visualisation experience.

Several similarities exist between the West and China based on interactive video distribution platforms. The user can view them via the web or professional interactive documentary platforms such as the CCTV documentary channel.[15] Other platforms include the National Film Board of Canada (NFB), a professional documentary platform with a specialised interactive series[16] and the Association for European Television (Arte.tv)[17], which is a European cultural channel. About 56% of the programs on Arte.tv are documentaries, thus allowing the user to select specific projects according to their interests.Other comprehensive online video platforms are also available to view videos or interactive documentaries, such as iQIYI, Youku or Tencent Video from China, and YouTube or Netflix from the West. Also, there are several interactive documentary research platforms in the West with links to separate projects, such as MIT Docubase, i-Docs and DocLab.

From the perspective of production platforms and software, significant differences between those of China and the West can be found. In May 2019, iQIYI introduced an interactive video guideline and launched an interactive video production platform called Interactive Video Platform (IVP), which enables users to generate, organise and publish their interactive videos online. With IVP, users are able to build and publish their videos more efficiently, conveniently and in a one-stop manner (Figure 6). Later, in July 2019, iQIYI also launched an IVP plug-in,

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[15] http://tv.cctv.com/cctv9/ (Accessed: 14 June 2021)

[16] https://www.nfb.ca/interactive/ (Accessed: 14 June 2021)

[17] https://www.arte.tv/sites/webproductions/en/ (Accessed: 14 June 2021)

an interactive video editing tool that runs on video editing software such as Adobe Premiere. It implements the interactive features applied in conventional video editing software.

Figure 6

The Interface of the iQIYI Interactive Video Platform
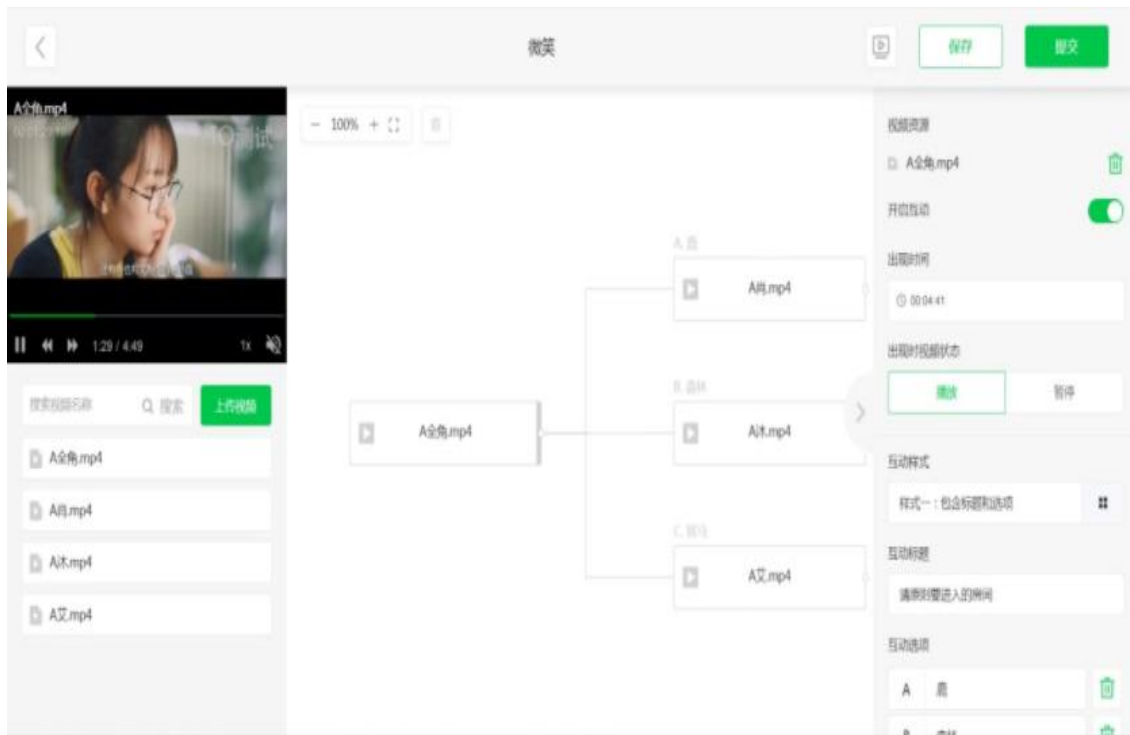
In July 2019, Bilibili introduced some interactive video features that enable users to access a "creation centre" via the Bilibili web page and generate different types of interactive videos. Bilibili, also nicknamed B Site, is a Chinese-language video sharing site based on Anime, Comics and Games (ACG) where users can submit and view videos and publish comments. Currently, interactive videos on Bilibili can be viewed via PCs and mobile devices. Additionally, Bilibili uses Adobe Flash or HTML5 players to display videos uploaded by its users and offers a scrolling commenting system called Danmaku (Figure 7). Danmaku is a new system of video commenting where user comments are overlaid directly on the video display and synchronised to the video's timeline (Yang, 2019, p. 256). These comments are presented scrolling from right to left across the screen. This combination is designed to deliver a dual experience of immersion and companionship. In recent years, due to the increasing popularity of Danmaku, online video platforms such as iQIYI, Tencent Video and Youku, as well as social platforms like Weibo, adopted Danmaku almost without exception. The Danmaku features of these platforms have opened up new opportunities for user-generated content and information exchange.

Figure 7

The Danmaku Comments on Music Videos on the Bilibili Platform

In July 2019, Tencent Video officially published the Interactive Video Technology Standard and opened a one-stop open platform for interactive video: the XingTu platform.[18] In contrast to iQIYI, the platform is aimed at media institutions and companies, while platform members are required to have a certain level of proficiency in running software (Figure 8) such as Vue.js.

After iQIYI, Bilibili and Tencent Video, Youku officially adopted interactive video production in September 2019. It published the Youku interactive video creation and technical guidelines, which introduced the Youku Interactive Content Platform (YICP), Youku Interactive Engine (YIE) and Youku Interactive Playing System (YIPS). Until the beginning of 2022, its content platform was still in the process of being launched.

In the context of media integration, the opportunities based on the development of 5G technology have vigorously driven the innovations and changes of interactive videos, highlighted the position of user-generated content and established favourable foundations for the production and distribution of interactive projects.

In the West, interactive video production takes place based on stand-alone applications or software such as Klynt, Korsakow and RacontR. Klynt is a PC and Mac desktop application just like Final Cut, and it specialises in interactive documentary production.[19] Korsakow is a

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[18] https://xt.qq.com/ (Accessed: 14 June 2021)

[19] http://www.klynt.net (Accessed: 14 June 2021)

widely known software.[20] It is an open-source tool for making web documentaries and other non-linear interactive stories. RacontR is a software that allows users to construct their interactive projects without programming experience. Users of this program are able to upload materials like videos, audio and images, which are then be converted into interactive web works.[21]

Figure 8

The Interface of Project Production in the Interactive Video Platform XingTu
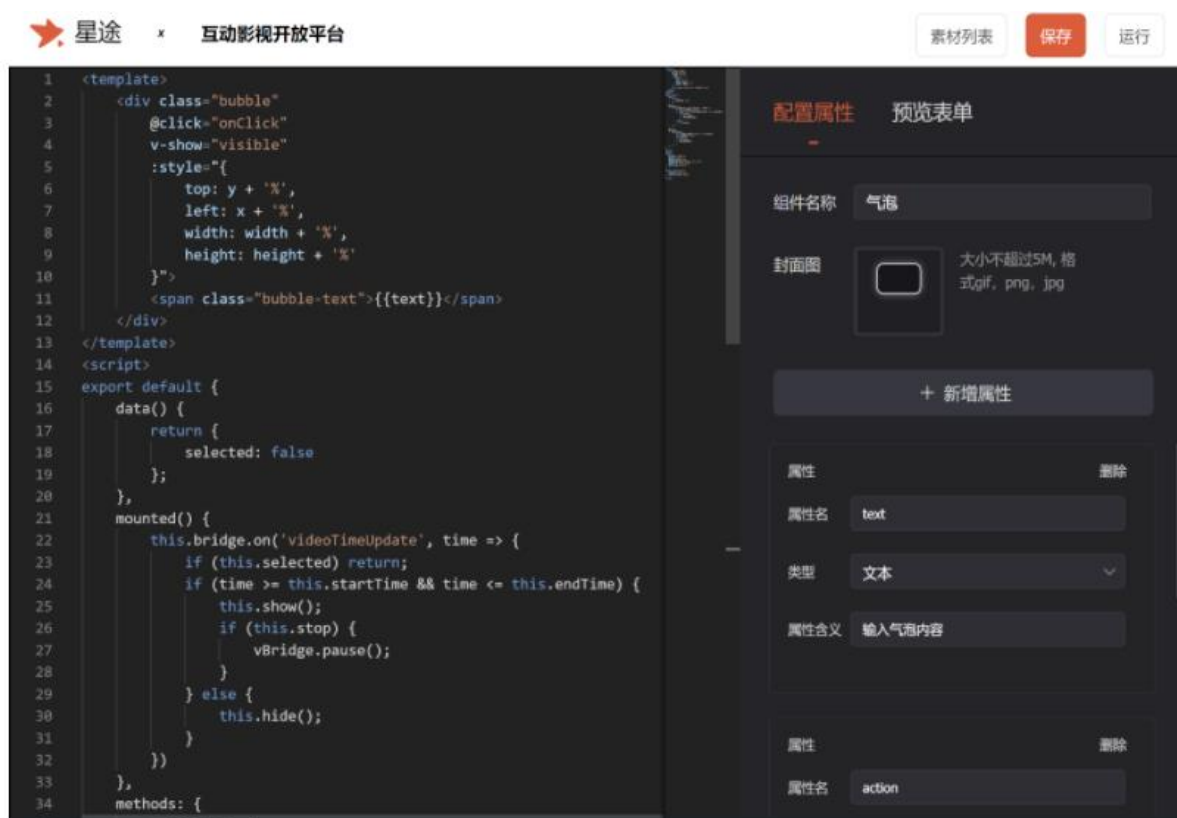
In short, the production platform of Chinese projects is more oriented towards a user-generated content model, which provides the basis for several free interactive video production platforms. Also, Chinese interactive video production is platform-/web-based, whereas in the West, it is more software-based. While the production platforms of Chinese projects emphasise their interactivity and usability, Western production software pays more attention to the professionalism and uniqueness of the project. Chinese interactive video production platforms target various user groups, for example, Youku is aimed at media companies and institutions, while Bilibili and iQIYI are intended for all users, whereas Western interactive video software is mainly intended for various media professionals, such as filmmakers and journalists. Although the production platforms in China are PC-based, users are still able to view the videos and participate in interactions through different devices. However, Western programs are primarily

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[20] http://korsakow.org/ (Accessed: 14 June 2021)

[21] https://racontr.com/ (Accessed: 14 June 2021)

web-based and are not suited for viewing or use via mobile devices. Furthermore, Chinese interactive production platforms highlight their features of customisation, user-generation, miniaturisation and autonomy, whereas Western platforms are valued for their comprehensiveness, diversification and professionalism. Finally, in China, the content of the project occupies a vital place in project production, while in the West, interactive project modes are more distinctive, and most of them are developed according to their own structures and models.

The Interactive Documentary as an Emerging Form

Since the early days of cinema, documentaries have offered an effective way to involve the audience with the real world, and they caught hold of the imaginary relation to the reality of our world. Though the glamour of the fictional world eclipses the documentary, it remains stubbornly committed to pursuing truth through a method of observation and artistic creation that no other art form can offer. As necessary, the audience is expected to view and hear these truths. Documentary filmmaking is always the most dynamic at the intersection of technological change; periods of intense and rapid social change have led to new forms of the documentary being created. Filmmakers employ new methods of self-expression in response to social changes, connecting with the audience and creating social meaning directly and continuously.

Moreover, documentaries are influential because they have adapted to the existing production and distribution approaches. The emergence of the Internet and the digital revolution has challenged and disrupted the distribution and production of traditional documentaries. The advent of interactive projects is more than just another component of the linear documentary or an extension of traditional cinema. Instead, it is the birth of a whole new art form; the first in over a century.

This emerging form of documentary has been referred to in a variety of ways, including interactive documentary, multiplatform/cross-platform documentary, transmedia documentary and cross-media documentary. Unsurprisingly, these various designations indicate the vitality of this emerging form carried by different creators. The interactive documentary does not eliminate the classic cinematic documentary or television documentary, just as photography did not substitute visual arts, cinema did not substitute theatre and television did not substitute cinema. Nevertheless, this new form will continue to develop in strength, maturity and impact.

This chapter will look into the connotations and modes of the interactive documentary. It should be taken into account that the scope of the interactive documentary is complex and somewhat fragmented, as many projects are defined in different terms: new media documentary, digital or web documentary or interactive documentary. With this in mind, we will map out the current Chinese and Western definitions of interactive documentaries and propose a definition of interactive documentaries. Furthermore, we will explore the different types of interactivity of interactive documentaries, which are based on Nichols' representation modes of documentary (2017), as well as a combination of Gaudenzi's interaction modes (2013, p. 37) and the classification by Gifreu-Castells (2010, pp. 140–143).

The Definition of Interactive Documentary

The growth of the Internet and its influence on media shape the landscape in which interactive documentaries are constructed. Such convergence (Jenkins, 2006, p. 1; Gershon, 2016, p. 165) resulted in a slew of transformation and hybridisation that yielded a brand new media environment. Furthermore, another aspect is also concerned; the software has taken on the new role of being a tool for cultural creation (Manovich, 2013, p. 33). Within such a scenario, a new form of the documentary arose from its encounter with new media; a form of documentary that is produced, disseminated and displayed through a wide range of media and platforms, such as web documentaries, installations and transmedia documentaries. This hybridisation is at a stage of exploration and evolution in the ecosystem that arises from the communication nets of the Internet.

Starting from the first offline works, Gifreu-Castells (2017, p. 8) divided the evolution of documentaries into four periods: appearance (1980–1990), experimentation (1990–2000), constitution (2000–2010) and consolidation (2010–present). The current large-scale hybridisation in this form is what the consolidation and diversification phase look like.

There are various denominations connected with the concepts of multimedia, cross-platform and co-creation, such as the web documentary (Braida, 2013, p. 5; Nash, 2012, p. 197), the multimedia interactive documentary (Cui, 2016, p. 30; Gifreu-Castells, 2010, p. 140), i-Docs (Aston & Gaudenzi, 2012, p. 125; Zafra, 2020, p. 89), the transmedia documentary (O'Flynn, 2012, p. 141; Ogden, 2020, p. 121; Vázquez & Gifreu-Castells, 2019, p. 113), the living documentary (Gaudenzi, 2013, p. 16) or the digital interactive documentary (Souliotis, 2015, p. 5). While several designations exist, the term interactive documentary is constructed out of these names/designations through investigation and production. (Gifreu-Castells, 2010, p. 140; Kim & Kim, 2014, p. 117; Wiehl, 2013, p. 27). Currently, this term is used in many studies, both in China and the West, albeit without a precise definition (Aston, 2016; Gaudenzi, 2013, p. 84; Gifreu-Castells, 2010, p. 143); it is still considered an emerging form.

The Current Definition of the Interactive Documentary

If the definition and connotations of the traditional linear documentary are blurred and constantly evolving, the interactive documentary is still at a much earlier stage of its definition.

Some pioneering researchers, such as Davenport and Murtaugh (1995, p. 377), introduced the concept of the evolving documentary; Gaudenzi (2013) also mentions this:

> If the documentary is a fuzzy concept, the digital interactive documentary is a concept yet to be defined. This comes with no surprise, since it is an emergent field, but the lack of writing on digital interactive documentary also has to do with the fact that new media artists do not consider themselves documentary makers, and therefore they call their work anything but interactive documentaries. (p. 26)

The interactive documentary proposes a non-linear narrative, which conflicts with how traditional linear documentaries are presented. Such new forms of media and distinct narrative approaches have fundamentally challenged the principles of traditional narrative coherence in documentaries. Since there are still too few well-known and accepted mainstream examples of interactive documentaries, coupled with the fact that a number of documentary writers have questions about whether interactive documentaries, in general, can be considered documentaries, the definition of interactive documentaries has become a crucial issue that needs to be addressed.

Gaudenzi (2013) further pointed out:

The few writers that have tried to define the term have treated digital interactive documentary as an evolution of linear documentary into the digital realm. This means that they have assumed that an interactive documentary is mainly video-based, and that interactivity is just a way to navigate through its visual content. (p. 27)

Nash (2012, p. 197) took the term webdoc and defined it as a body of documentary which is distributed through the Internet that is both of a multimedia nature and interactive. Berenguer (2007, p. 118) considered the interactive documentary a type of interactive narrative that appeared in the 1980s which can spread in three main directions: interactive narrative, interactive documentary and game. In *Digital Storytelling: A Creator's Guide to Interactive Entertainment,* Miller (2004, pp. 340–345) also argued that the interactive documentary is a kind of interactive non-fiction film and defined it by focusing on the user's choice. Also, from Goodnow's (2014, p. 2) perspective, the interactive documentary is the result of early experiments with the interactive film, in which physical actions instead of cognitive effort were used to directly navigate through existing film content.

Gaudenzi's (2013, p. 28) view was more in line with Whitelaw's (2002, p. 3) view that the historical approach is too fuzzy for the needs of this definition, and that, without re-enacting the traditional linear narrative modes of documentaries, new media documentaries provide a unique approach to negotiate with reality.

In the first i-Docs symposium[22] in 2011, Aston and Gaudenzi proposed that i-docs (interactive documentaries)

[…] should not be seen as the uneventful evolution of documentary in the digital realm but rather as a form of non-fiction narrative that uses action and choice, immersion, and enacted perception as ways to construct the real, rather than to represent it. (p. 125)

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[22] In 2011, Judith Aston and Sandra Gaudenzi, along with Jon Dovey, held the first interactive and immersive documentary conference, i-Docs. The conference was an initiative of UWE Bristol's Digital Cultures Research Centre.

Wiehl (2013, p. 27) agreed with Gaudenzi's perspective and asserted that the interactive documentary is "a hypermedia, most often a multiplatform genre that first appeared in the French-Canadian media landscape" and is described as somewhat vague. Tolhurst (1995, p. 25) described hypermedia as "any computer-based system that permits interactive linking, and hence non-linear traversal, of information that is displayed in multiple forms such as texts, still or animated graphics, movie clips, sound, and music". Hypermedia is based on the concept of hypertext; using nodes and links in the structuring of information in the system. If an interactive documentary is considered to be hypermedia, then it should not fall into the multiplatform genre. Therefore, a clear definition is always lacking, as well as an operational classification and system for analysis. The term i-doc, which she further mentioned, has been applied to a variety of genres, from documentary platforms, educational materials on CD-ROM and browsable archives to serious games; from non-fiction narratives and online journalism to digital media art and AR museums that use digital and interactive new media to illustrate the reality of our world.

Gaudenzi (2012) gave us a clue that the interactive documentary has its own approach to negotiating with different versions of reality, presenting it by its extension. Furthermore, the interactive documentary is not simply a product or a work of art but an actual entity that can interact with its environment, which the documentary calls a living object.

Moreover, according to Nichols' definition of the documentary, Gifreu-Castells (2011) focused the definition of the interactive documentary on three items: author, text and interactor. The significance of the proposed definition lies in the fact that it attempts to understand the user based on their degree of participation.

> Summing up some of the ideas put forward with the aim of focusing this approach to the concept, we are in a position to provisionally define the interactive documentary as interactive online/offline applications, carried out with the intention to represent reality with their own mechanisms, which we will call navigation and interaction modalities, depending on the degree of participation under consideration. The structure of the interactive documentary can be based on one or multiple perspectives and can end at any point determined by the author, but it can also admit multiple displays with different trajectories and endings. (Gifreu-Castells, 2011, p. 382)

Thus, the interactive documentary is described as an interactive non-fiction project that depicts reality through its interactive medium. Gifreu-Castells highlighted the development of interactivity by proposing a new idea of the relationship between the author, the text and the interactor, which illustrates that the control of the creator is changed, and the active role of the user is underlined. From this relationship, a new commitment of the viewers emerged (Nash, 2012, p. 203), which is a fundamental part of the development of interactive stories and their expansion.

Also, Alkarimeh and Boutin (2017) defined the interactive documentary using three main aspects: interactivity, users and documentary. This non-fiction documentary takes advantage of the Internet and employs digital technologies and interactive modes. In this way, interactive technologies are utilised to construct the narrative of the documentary in order to create a potentially interactive exchange with users. Within this experience, users are granted different levels of control, enabling them to activate preset interactivity by clicking or scrolling with the mouse, or performing other actions, which empower the narrative of documentaries to be interactive and communicative (Alkarimeh & Boutin, 2017, p. 17).

In short, from a Western perspective, the interactive documentary is defined through the concept of the documentary-interactivity-user relationship, where the documentary is a project of co-creation and a non-linear narrative; the interactivity is not only a media characteristic but also a process of communication; and the users are granted the ability to engage in two directions: the perceived interactions and the physical engagement.

In China, in the context of new media, a new form of the documentary has emerged in response to changes in technology and user needs. It differs from a few domestic new media documentaries in China, which are transformed directly into digital format and then shown on websites. A number of new documentary forms have been introduced as part of the interactive documentary. In the research on interactive documentaries, various designations have also emerged, such as the web documentary, transmedia documentary, multimedia documentary, alternate realities documentary and interactive documentary, while the related concepts have appeared in diverse and mixed ways (Wang, 2019, p. 80). Currently, the term interactive documentary is widely accepted.

Numerous scholars have pointed out the interactive characteristic in exploring the connotations and definition of interactive documentary. According to Li (2016, p. 112), the interactive documentary is a new art form that emphasises interactivity and relies on digital media platforms to represent its reality in the new media landscape. Zheng and Li (2014, p. 264) underlined the characteristic of interactivity and the importance of the user in the interactive documentary. The interactive documentary allows the user to contribute to the project. It enhances the initiative of the documentary and offers users the possibility to experiment in a variety of ways. Based on the user's participation, the documentary reacts with its appropriate multimedia documentary clips. Furthermore, Yu (2017, p. 110) noted that technological innovations are the permanent driving force of interactive documentary development and that the most decisive feature of the interactive documentary is its interactivity. It not only breaks the original linear narrative structure of the documentary, but also puts forward a multi-dimensional interaction between the author, the user and the documentary/project and empowers the user by giving them a broader space to articulate the experience.

Of course, the representation of reality in interactive documentaries and the relationship between the documentary/project, the author and the user are also hot topics of discussion. Hou

et al., from the College of Literature and Journalism of Sichuan University, proposed a definition of the interactive documentary: it aims to represent reality and employs interactive technology to create dynamic and interactive communication between the author and the user (Hou et al., 2018, p. 115). It is a new form of documentary that creates an immersive audio-visual experience as well as a dynamic, interactive narrative mode. In contrast to the traditional documentary, where the user only sits in front of the screen and receives it passively, the user takes on an active role. Wang (2015, p. 89), from the Communication University of China, defined interactive documentary in comparison with traditional linear documentary. It is no longer a single and fixed story with the linear narrative structure of a traditional documentary, and the author no longer has control over the entire work. The choices of the user on separate routes enables them to discover the project in a completely different way. Liu (2018, p. 5) described the interactive documentary from the point of view of communication. It is a new form of documentary that builds on the bi-directional nature of the Internet, using modern interactive digital technology to create a sense of immersion and participation. The interactivity of the interactive documentary is shown both in terms of the technology of transmedia platforms and in terms of the communication of the author-project-user relationship.

In addition, Li (2020, p. 12) and Zheng (2019, p. 15) both mentioned, first, that the interactive documentary is no longer produced independently by a single production team, but rather, is continually enhanced and built in the interaction with the user; and second, that the production and distribution of the interactive documentary have been based on the development of media platforms and technologies, and its interactivity becomes the central point. As a result, the interactive documentary is disseminated and produced using new media technologies, and the user is involved in their production and dissemination process.

A Working Definition of the Interactive Documentary

The growth of the Internet and information technologies has contributed to the advancement and evolution of documentaries through convergence. Arguments around new media continued when the integrated media adopted emerging technologies. With the popularisation of computers and "software taking command" (Manovich, 2013, p. 2), new media platforms have driven different cultural productions around the world, such as YouTube in the West and iQIYI in China, and are also being used as mediums/channels. They embody the significance of the medium's emergence and constitute its evolutionary process (McMullan, 2020, p. 13), thus enabling the understanding of these existing conditions. In the West, interactive documentaries are widely distributed in webdoc format and are beginning to be acknowledged by users (Braida, 2013, p. 37; Vázquez & López, 2019, p. 246). These projects have become more diverse since 2010. They drew inspiration from other interactive forms, including video games and VR. As discussed in the third chapter, the new media technologies, media convergence and government policies in China have led to dramatic growth in interactive videos, interactive

technologies and interactive documentaries. Unlike in the West, the Chinese interactive documentary was late to emerge, and these projects focus on the use of multiplatforms and mobile devices. Therefore, when we look at its impact, the different forms of interactive documentary push us to ask not what they are but what they can do, how they can be made, what forms they take in different cultural contexts and where they might be headed. Interactive documentaries deal with both the process as well as the product; this form of media is first and foremost about people, rather than machines.

Possible definitions of the interactive documentary currently proposed by Chinese and Western researchers imply the open and complex nature of its genre, which is constantly changing and converging. The digital narrative of the interactive documentary breaks with the sequential character of the linear documentary by integrating hypertext and multimedia resources. At the same time, interactivity is the key characteristic that makes this new form stand out, highlighting a new connotation of user participation alongside the development of hypertext. In short, it is a game/play and a negotiation between linear documentary and interactive digital narrative (hypertext). Furthermore, the interactive documentary is also a fusion of user-selected and user-generated content, a reconstruction of the author-project-user relationship and the integration and embodiment of multiplatform and cross-platform media. Finally, it is recognised as the discourse intended to convey specific information in relation to reality. This discourse is co-constructed by users and authors.

The conception of the interactive documentary is deliberately open-ended (Aston et al., 2017, p. 49; Gifreu-Castells, 2011, p. 379). It should be a project that engages with the reality of our world and uses digital interactive technologies to perform its function.

First, the interactive documentary is supposed to be a broad concept that provides a platform or space to interrogate various forms and embrace diverse emerging trends such as the web documentary, transmedia documentary, locative documentary, live performance documentary, VR documentary, micro-interactive documentary, animated interactive documentary and vertical interactive documentary. All these newly emerged hybrid projects have opened up new territories in the documentary field.

Second, it is in a state of ongoing generation, the result of multiple hybridisations: professionals (directors, technicians, etc.) and users (from different fields, countries and cultures) co-produce the project; the users select and generate the content of the project; the project is a high-level integration of audio-visual elements (videos, images, animations, audio, etc.) and text (information); the production and distribution of the project are the combinations of multiple devices (mobile, PC and TV) and multiplatforms; and a hybrid experience is given to the user, providing not only entertainment and knowledge but also a sense of immersion and companionship.

Third, the interactive documentary is intended both to account for reality and interact with it. It is an emerging genre that uses digital and interactive features of new media, which we describe as the modes of selection and generation, to portray reality depending on the degree

of user interaction. Moreover, such modes (selection and generation) become vital factors in achieving the intention of the interactive documentary. The structures of the interactive documentary can be built on more viewpoints/angles, which ends at a point established by the author, but it can also be a compositional structure containing separate paths and results.

Lastly, the concept of representing reality in interactive documentaries should encompass the depth and breadth of the living experience. The purpose of each interactive documentary is nothing less than to record and present different versions of reality through a specific approach. In this respect, interactive documentaries address the same interests as traditional linear documentaries. Moreover, our comprehension of reality is a dynamic and ever-changing process that offers numerous variations and potential opportunities to Grierson's definition.

Modes and Categorisation of Interactive Documentaries

The evolution of digital media technology has given rise to new possibilities for documenting reality. In 1991, Nichols proposed six modes of the representation of reality in documentary films, highlighting the distinct logic employed by directors in traditional linear documentary production: expository mode, poetic mode, observational mode, participatory mode, reflexive mode and performative mode. These different logics and strategies structure the text/content concerning recurrent features and traditions (Nichols, 1991, p. 32). These modes contribute a detailed structure to the exploration of three major elements of the documentary experience: the author, the project and the user, as well as their relationships to the recorded reality. However, Nichols' modes are somewhat blurry in terms of the user in the relationship.

When it comes to new media, the user becomes the driving force. Using the interactive, collaborative and participatory options offered by new media extends the predominantly cognitive documentary experience to physical, emotional and social involvement. The interactive documentary becomes a new form with interactivity and user participation, presenting a non-linear narrative: the combination of cinema and digital technology. In this context, interactivity can be considered an essential feature that distinguishes traditional media and new media, triggering an innovative cultural practice[23] known as convergence and participatory culture (Wiehl, 2013, p. 29). Thus, the key features of interactive documentaries are introduced and compared.

> Interactivity can be defined as the degree to which a communication technology can create a mediated environment in which participants can communicate (one-to-one, one-to-many and many-to-many), both synchronously and asynchronously, and participate in reciprocal message exchanges (third-order dependency). Regarding users,

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[23] Cultural practice is an umbrella concept encompassing the social, economic and so on. It deals with the entire scope of practices involved in producing, disseminating and consuming media works (Kiousis, 2002, p. 378).

it also refers to their ability to perceive the experience as a simulation of interpersonal communication and increase their awareness of telepresence. (Kiousis, 2002, p. 372)

The concept of interactivity is closely tied to its scope. When viewed from a functional perspective, the power of the user to intervene or directly modify the texts and visuals they view is referred to as interactivity (Lister et al., 2009, p. 12), and this ability is always open to discussion (Aarseth, 1997, p. 41; Brand & Crandall, 1988, p. 91; Engelbart, 1988, p. 64). Espen Aarseth (1994) identified four different functions of the user while dealing with non-linear narratives, thus providing an effective system of categorisation:

1. The explorative function - The user selects which route to follow based on preset options.
2. The role-playing function - The user takes on the power of a role in the world depicted by the project.
3. The configurative function - The user is able to contribute to certain parts of the story in the projects.
4. The poetic function - This can artistically drive user actions, discussions and productions. (p. 60).

The typology of interactivity has also been a topic of research, extending, for example, from computer-mediated communication (Downes & McMillan, 2000, p. 157) to VR (Ryan, 1999, p. 110; Wei, 2019, p. 40). As each mode corresponds to a distinctive concept of interactions, it grants users various levels of control. Human-machine interactions have evolved, giving rise to new concepts for representing reality and new possibilities for action in digital projects and portrayed reality. Thus, the analysis of interactive documentaries will begin with an examination of the types of interactivity employed in each project.

The Categorisation of Interactive Documentaries

Based on the types of interactivity, four primary classifications of the interactive documentary have been proposed.

In Modes of interactivity: Analysing the webdoc by Nash (2012, pp. 203–207), the classification of the web documentary is presented according to different interaction structures: narrative, categorical, and collaborative web documentaries. Narrative web documentaries are in some ways similar to traditional ones, but they permit their users to engage with certain parts of the narrative; categorical web documentaries focus on their structures, allowing the users to select their preferred stories from the project freely; and collaborative web documentaries let the users actively contribute to the content and share it with others (Nash, 2012, pp. 203–207). However, other forms of the interactive documentary, for example, the location-based documentary, exhibition and docu-game, are not included in this classification.

Gaudenzi (2013, pp. 21–36) combined Nichols' modes of representation of a linear documentary, emphasising three entities: the author, the text and the audience acceptance, with Aarseth's suggested function of the user in the new media and offered some modes of interaction in opposition to the documentary modes of Nichols.

Gaudenzi (2013) pointed out that the authors of the project emphasise the role of the users based on different modes of interactions and allow the users to portray the reality of their interests with the authors. This results in the production of a particular kind of action for interactive documentaries. Interactivity can be seen as the types of control, freedom of choice and face-to-face interaction that affect the types of projects that can be created through it (Gaudenzi, 2013, p. 38). The four modes of interaction are proposed based on the distinction between the different logics of interactivity, the function of the user and the role of the author, and always, through some practical examples of the interactive documentary:

1. The conversational mode - The interactions are guided by the principles of conversations. In this sense, according to Aarseth (1994), the users are engaged in role-playing, and the authors are constructing a world with their rules and granting the users permission to move around in it.

2. The hypertext mode - The user acts as an explorer, browsing both the internal and external sources of content, such as pictures, audio and movies. Additionally, the author creates a range of potential paths to follow in a closed database.

3. The participative mode - The users are not only able to browse the content of the project but also actively contribute to the production process of the project.

4. The experiential mode - A new experience is created through direct interaction between the user, the project and the author. The user physically participates in the project and experiences the reality represented. The author aims to create a different experience in a dynamic environment where the user has multiple functions. (Gaudenzi, 2013, pp. 37–71)

As can be easily seen, each mode presents a specific approach to interactions that reshape the functions of the user, the positions of the author, and the logic of the narrative. With neither a classification of levels of interactions nor a chronological progression, these modes stand for an evolving field and contribute some lines of thought and proposals for the trends of such a type.

Galloway et al. (2007, p. 331) posed some questions regarding the traditions of interactivity, including user-to-user, user-to-document and user-to-system relationships. Therefore, Galloway et al. (2007) proposed four different categories to distinguish the degree of the user's interaction with the documentary material:

1. The passive adaptive category - The user's input is made on a subconscious level. The user has an eye on the documentary, and the database changes depending on the user's feedback on the subject (using technology to detect these responses).

2. The active adaptive category - The user consciously navigates through the documentary (like Gaudenzi's [2013] hypertext mode).

3. The expansive category - The user's input may change the content of the documentary and interact with other users' views. A mass interaction approach is employed to provide a community-based documentary experience (like Gaudenzi's [2013] participative mode).

4. The immersive category - The contribution of the user is totally participatory (like Gaudenzi's conversational mode), and events can be experienced first-hand. (p. 333)

Gifreu-Castells (2010, pp. 123–127) showed the extensive relationship between navigation and interaction modalities. As for the evolution of the documentary and digital media, Gifreu-Castells (2010, p. 114) set up 10 modes of navigation that combine to form a complex product: fragmented, timeline, spatial, testimonial, ramificated, hypertextual, preferential, audio-visual, sound and simulated-immersive navigation. He also described three modes of interaction: social (or 2.0), generative-contributive and physical-experienced (Gifreu-Castells, 2010, pp. 114; translated by the author). Since the method of presenting reality is continuously changing, the proposals for interaction modes grow in diversity, making the concept complicated and open-ended. Furthermore, Gifreu-Castells developed a classification based on Nichols' (2017, p. 106) modes that explain how reality can be represented in interactive documentaries.

Afterwards, Gifreu-Castells (2010, p. 113) focused on the proposal of an analytical model of the interactive documentary. As such, he presented four main categories and subcategories in the context of the interactive documentary field.

1. "Organisation and structure of the interactive documentary": content (units of information), structuring (nodes and structural links) and presentation (interface: an intermediary between the structure and content parts and the interactor).

2. "Integration of content and navigation": analyses the relationship between the author and the user and the types of interaction.

3. "Modes of representation of reality": recalling the categories developed by Nichols, Gifreu-Castells applied them to the interactive documentary.

4. "Modes of navigation and interaction": describe the essential distinction between modes of representation (six modes), modes of navigation (10 modes) and modes of interaction (three modes). (Gifreu-Castells, 2010, pp. 123–139)

In the end, Gifreu-Castells proposed a classification and categorisation of the foreseeable development of interactive documentaries:

- "Offline multimedia documentaries", which are in line with the interactive project for cultural dissemination, and those of other genres on external media/formats such as CD-ROMs.

- "Online linear documentaries", the audio-visual work in the traditional documentary field, are located on the Internet in order to enhance their dissemination, distribution and visibility.
- "Online interactive multimedia documentaries" are at the centre of his research. Projects operate in one or more non-linear navigation modes. These may contain entire audio-visual documentaries, divided into sections and other ways of navigating the content (or other modes of organising information/content).
- "Online generative multimedia documentaries" is the most highly evolved and least experienced category, in which the user becomes the interactor, producer and contributor to the project themself. (Gifreu-Castells, 2010, pp. 140–143).

The interactive documentary, distinguished by the use of interactive media to represent reality, acts as a new form of storytelling. It is mainly affected by user-related interactions. This classification emphasises the generative nature of the interactive documentary and its impact on user participation.

The Interactivity of the Interactive Documentary

Table 5 provides a taxonomy of the different categorisations proposed by scholars. Among them, the classifications of Nash (2012), Gaudenzi (2013), Gifreu-Castells (2010) and Galloway et al. (2007) for analysing the interactive documentary are all built on modes of interaction. Therefore, an attempted classification of interactivity based on the way interactivity is understood and used in the existing Western and Chinese interactive documentaries to better address this dynamic relationship between the author, the project and the user is presented. Moreover, with this new logic of interactivity, new opportunities for action can be created in the projects and depicted reality.

Table 5

An Overview of the Taxonomy Proposed by Scholars to Categorise Traditional Linear Documentaries, Web Documentaries and Interactive Documentaries

Nichols	Nash	Gaudenzi	Gifreu-Castells		Galloway et al.
Modes of representation	Interactive structures of webdocs	Modes of interaction	Modes of navigation	Modes of interaction	Categories in traditions of interactivity

Nichols	Nash	Gaudenzi	Gifreu-Castells		Galloway et al.
- Expository mode - Poetic mode - Observational mode - Participatory mode - Reflexive mode - Performative mode	- Narrative structure - Categorical structure - Collabora-tive structure	- Conversational mode - Hypertext mode - Participative mode - Experiential mode	- Fragmented - Timeline - Spatial - Testimonial - Ramificated - Hypertextual - Preferential - Audio-visual - Sound - Simulated-immersive	- Social or 2.0 - Generative-contributive - Physical-ex-perienced	- Passive adaptation - Active adaptation - Immersive - Expansive

In China and the West, other researchers analyse how interactions are performed in the current interactive documentaries. In *Interactive documentary contributions to the renewal of journalistic narratives: Realities and challenges*, Vázquez et al. (2017, p. 406) classified the interactivity in interactive documentaries into five modes: physical interactivity (user physical immersion, VR and live performance), generative interactivity (user contributions), social interactivity (like comments, social sharing, logging in and the use of personal data), immersive interactivity (user roles, simulation and gamification) and selective interactivity (choosing paths and options, etc). Following this, Vázquez and López (2019, p. 251) combined the function of the user (Aarseth, 1994, p. 60), the modes of interaction (Gaudenzi, 2013, p. 37) and the mechanisms of participation (share, discuss and contribute) for further analysis of the interactivity in interactive documentaries. Moreover, Ji (2019, p. 11) illustrated four methods of interactivity in the context of interactive documentary practice in China: immersive interactivity (role-playing and gamification), selective interactivity (making decisions and choosing paths), companionship interactivity (discussing, sharing and commenting) and participatory interactivity (uploading, editing and generating content).

As can easily be seen, the types of interactivity used in existing Western and Chinese projects have conceived interactivity as the ability of the user to adopt different levels of actions in the project and interact with other users. For example, users are able to select the perspective and content they wish to view through navigation, and users engage in posting their comments on the project or contribute to the content of the project. Table 6 illustrates the interactivity that currently exists in the Western and Chinese projects.

Table 6

The Interactivity of Western and Chinese Projects

Type	Description	Characteristics
Selective Interactivity	- The user selects and controls the project with the mouse, keyboard or other devices; chooses the direction and viewing order; and has the freedom to select and explore the project. - The author creates possible paths in a closed database. The project's structure is complicated and diversified. All the media used in the project are non-linear, fragmented, hypertextual and audio-visual. - The user has control over the story. The user is actively involved, picking their viewing route according to their personal preference to experience and witness the story as it unfolds.	- Make decisions, choose paths, select actions, etc. - Free exploration - Non-linear - Undefined endings
Immersive Interactivity	- User participation in the system is driven by role-playing, gamification, simulation implication and engagement. - All narratives take place in a dynamic, immersive environment. - Geolocation, real-time data maps, virtual reality and new ways of interacting with mobiles and tablets all fall into this category.	- Role-playing - Simulation and gamification - User physical immersion - VR and 360° panoramic views - Mobiles, tablets, PCs and other devices - Live performance - Locative/geolocation
Social Interactivity	- The user participates in the project in such a way that they can share their views and also communicate with other users through the platform, offering a sense of companionship. - The user can communicate in the project and make contributions within the boundaries of what is allowed. - Certain tools may be integrated into the project such as commercial links and discussion forums.	- Logging in and use of personal data (anonymous or non-anonymous) - Social sharing - Discussions (comment zone, forum and Danmaku) - Platforms (independent web pages, video platforms, TV websites, professional documentary platforms and applications) - Commercial function

Type	Description	Characteristics
Generative Interactivity	- The user acts as the content provider/sender, and the director of the project acts as the quality filter. - The project is like a guest book or a multi-collaborative application, but with the ability to store and display the accepted material. - The author filters the material and places it where they think it might make more sense. The project contains its specific application or software, enabling the user to select materials from their own device and send the material to the database, which the author validates. - Professional technicians provide the production platform, and the user acts as the director to produce the project.	- Results from the user experience (questionnaires and polls) - The user as a contributor that participates in project activities - The user as a contributor that creates parts of the project - The user and author co-create the project - The user becomes the author of the project and takes entire control of it

In conclusion, three points stand out:

First, with the integration of multiple platforms in a project and the amplification of the complexity of the content, that is to say, the richness of its sensory experience and the positivity of its social interactions increase, the user's acceptance of the types of interactions as well as their level of engagement deepen. Commercial platforms are also involved in the interactive documentary.

Second, the increased degree of participation has blurred the roles of the author and the user, in which the user acts as a participant, contributor, co-creator or project author. In addition, production teams in the West are made up of more professional and experienced people such as technicians, directors and media professionals, among others. Interactive documentary production in China embodies a two-line dynamic relationship, where a professional team and a user co-produce the project, and the user produces the project directly.

Third, the potential for both interactions and participation is extended, stimulating an expansion of the previous cognitive documentary experiences into physical, social and cultural involvement. The function of the project extends from providing knowledge and entertainment to providing a greater sense of immersion and companionship.

Advanced digital technologies have enabled the potential interactivity of documentaries. This interactivity redefines the relationship between the author, the project and the user. While these accepted interactions will be further extended and evolve in the near future, due to their nature, they can integrate emerging resources and technological applications. Nevertheless, the trend is also shaped by the emerging technologies. The interactive documentary has the inherent advantage of transmedia, enabling it to adapt to the multiplicity and diversity of the media

instead of being replaced by one dominant form. As a result, the connotations and forms of the interactive documentary will continue to develop and transform.

Basic Features of the Interactive Documentary

As we know, the documentary genre has faced many technological revolutions, and following these, the documentary has transformed itself, its structure and the way it presents reality. In the previous chapter, the similarities and differences between the traditional linear and interactive documentaries have been addressed, and the current definition of the interactive documentary has been presented. Also outlined was the classification of interactivity and the modes of interactive documentaries in order to explore the development of the documentary that is facilitated by the new media technologies. Despite the fact that the documentary film emerged half a century before new media, these two fields have now moved to an inspiring area of convergence. The technology and infrastructure of the Internet, as well as their evolution, has brought the two together more than ever before. Due to the ever-changing media landscape, they have integrated and, consequently, generated different forms of new media projects (Gifreu-Castells, 2011, p. 378).

In the last few years, the production of interactive documentaries has boomed, which leads us to the conclusion that interactive documentaries are no longer a niche form (Aston & Gaudenzi, 2012, p. 126). Since the beginning of 2019, China's domestic mainstream video platforms have been vigorously developing interactive videos/projects, and the types/forms of projects are blossoming (Liu & Deng, 2020b, p. 1).

It has become increasingly common for researchers to concentrate on the relationship between projects and their users. Braida (2013, p. 65) described web documentaries from the perspective of non-linear structure, software, production and spectatorship. Alkarimeh and Boutin (2017, p. 7) proposed a model for analysing the project in terms of the documentary, the user and interactivity. Additionally, several scholars examined interactive documentaries from the point of view of the author and the user (Gifreu-Castells, 2011, pp. 382–388; Harvey, 2012, p. 191; Schuh & Simons, 2013, pp. 27–36; Vázquez & López, 2019, p. 262); some analyse projects only from the audience's point of view (Choi, 2010, p. 105; Gantier & Labour, 2017, p. 103; Nogueira, 2015, p. 81; O'Flynn, 2012, p.142; Zhou & Dong, 2013, p. 64); some attempt to discover new opportunities for the narrative structure of projects (Aston & Odorico, 2018, p. 72; Feng, 2020, p. 12; Lei & Wang, 2018, p. 63); and some tend to concentrate on the evaluation of the project itself (Forceville, 2017, p. 219; Wu, 2014, p. 102).

As mentioned in second chapter, Nichols (2017, p. 11) argued that understanding documentary film may encompass four factors: institutions, filmmakers, films and audiences. Therefore, we are in a position to explore the evolution and integration of interactive documentaries from the perspective of the author-project-user relationship.

The author of the interactive documentary project is no longer set up as a unique individual, as in the case of a filmmaker or a professional director. In a traditional documentary, the author's approach – a closed and realistic narrative approach, which is not authentic and, to some extent, no longer essential – requires a blank space in the project. This is not the case in an interactive documentary. However, it is not so much that the author loses control over the work, but rather, co-creates a narrative that combines space and time. In short, the author no longer relies entirely on themselves to produce the narrative and convey the story.

The text of the project is shifted from a closed structure to a pluralistic, open structure. It is not a physical, finished/completed work, but a living project that generates reality in a fluid context. The end result (content) and the discursive order (structure) of the project will take a very different form from the content of the script of the traditional work.

The user of the project is more complex and diverse in their role. As interactivity brings new challenges and opportunities for user-generated content, it allows users to be part of the project or, in some cases, to co-create it, as if the project is a living, changing system. The user is able to be a witness, a distributor and a contributor to the project created by the author. The user in the new digital era takes on duties related to authorship and becomes, to some extent, the creator of their own personal documentaries; the user is equipped with information material and is given the power to control and the ability to interact with others.

Author

In the traditional linear documentary, the author is considered the key actor/player in the production. Authors/filmmakers are the unique controllers of the narrative structure of documentary films (Gifreu-Castells, 2011, p. 382). However, with the emergence of the interactive documentary, this role of the author has begun to shift into a more flexible and fluid state. For example, the author may become an assistant in the project, contributing to the user's enjoyment and experience of the project. Furthermore, the authorship of such projects is becoming hybridised and diverse, such as through the collaboration of interdisciplinary and cross-disciplinary professionals on international projects. The responsibility of the author is more inclusive and open. It includes the duty of disseminating information and providing a space for users to exhibit their state of reality. The experience of the author becomes a trigger that, in combination with different forms of devices and platforms, drives/controls the reshaping of the project in a more integrated way. In short, the interactivity of the project does not result in a loss of authorial control; rather, it gives rise to a more advanced stage of control and dissemination.

The Flow of Author Control

"Computer writing" subverts the author's status as a centralised subject, introducing the possibility of collective authorship (Cronin, 2001, p. 560; Poster, 1990, p. 114). The author of the

interactive documentary is no longer the dominant storyteller; the user may become a co-creator of the project. Gifreu-Castells (2011, p. 381) pointed out that in this new form of documentary, the users are granted a generative feature, in which the author loses control of the narrative sequence of their project, and thus, this form takes on an unknown connotation. Forceville (2017, p. 218) noted that the freedom of the user in interactive documentaries comes at the price of proportionally reducing the author's ability to argue. In addition, Braida (2013, p. 82) stated that if there is a democratisation of the process, extending to the regular user (also implying that in many web documentaries, users can add content), these features, unless intended as part of the project's authorship, can lead to a slight loss in authorship. While the selection and integration of content in practice remain in the hands of the author, the presentation of the content of the project is no longer under the author's control (Yan & Xia, 2019, p. 96).

From this perspective, it seems that the author's controlling power is being lost in the transition from a singularly dominated model of the traditional documentary to a collective one.

In the traditional linear documentary, the filmmaker shoots and produces the documentary based on the principle of "creative treatment of actuality", and the audience watches the traditional linear documentary in the cinema or on a TV, computer or mobile device. However, there is a lack of real-time interactivity between the audience, the documentary and the filmmaker.

Nevertheless, this does not mean that the author's control is reduced or weakened. On the contrary, it requires the author to take better control of laying out the story and designing the project; the author is expected to perfectly narrate the story in the project while incorporating the user's interactivity. This places higher demands on narration and frame design and gives the author a more complex creative identity.

Also, Wu (2020, p. 47) mentioned that with the innovation of digital technology and the sustainment of multiplatform models, the author seems to lose control of narrative sequences, but in fact, the author has parallel expressions in a temporal and spatial context. Thus, it is clear that the interactive documentary demands a higher level of control from the author.

The Weakened Narrator

Unlike traditional narratives in which the author constructs the story, the role of the narrator in the project is generally weakened and even partially shifted to the user. The author focuses on the user's behaviour and the user's expectations of the narrative to design the project. As a result, the author provides only the main narrative components, like the basic background, structure or the navigation of the story, with the potential interactivity embedded in the project, leaving the rest of the narration to the user to build their version of the story during the exploration. Li (2020, p. 100) stated that the author has become a weakened narrator, guiding the user to experience and take part in the project. The author replaces the traditional linear, explicit storytelling with implicit navigation and guidance. Yan and Xia (2019, p. 95) mentioned that the author is the initiator and integrator of the topic of the interactive documentary, a role that is always evolving.

To be more specific, the author is able to pick and launch the topics of the project and organise and manage the content of the project generated by user participation on the interactive platform. The author can post trailer clips on interactive platforms, such as *18 Days in Egypt* (2011), yet this is not the completed project but more like an introductory clip used to ignite interest in the topic, encouraging the user to reflect on their reality through the unique perspective of their mobile device. The author emerges as a weakened narrator, launching and aggregating the project's topics, and also acts as a pre-production editor, conceiving and recording much of the narrative materials and then handing them over to the user; simultaneously, the role of the narrator is also handed over to the user. Thus, the user acts as an editor and completes the next half of the narrative.

Service Provider for the Project

Since the interactive documentary is not a closed project, the identity of the author switches from one that is personal to one that is shared, and the author also partially gives control of the non-linear narrative process/structure to the user. In the project, the author acts more as an assistant than a producer, allowing the user to discover and explore the story in a more open way. The author is akin a well-organised planner and service provider, with a clear purpose, providing independent resources such as text, images and videos, and skilfully arranging them in a basic narrative structure. The author provides personalised content of the project that serves the user by giving them the flexibility to choose how to browse and navigate, thus delivering a more exclusive and unique experience. Zhang (2020, p. 100) indicated that the designer of the project provides the user with an avenue and a chance to play with the storyline. Instead of presenting information from a traditional perspective, the author has shifted to offering a blank space for the user to tell their own stories. Although the user selects and interacts independently in a closed or semi-closed resource database, the author has switched from being a content provider to a service provider. The author's experience and intention act as a mediator to immerse the user and stimulate exploration and curiosity in the project.

The Author as a New Media Artist/User

New media technology provides traditional narrators and "technologists"[24] with a more liberal creative space and a new identity as new media artists. With the dual responsibility of artist and technologist, the author is pushed to integrate new media technologies into the project. As crossover becomes the new trend of contemporary art creations, documentary production has also entered this field.

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[24] Vázquez and Gifreu-Castells noted that professionals in project production include, for example, web developers and designers and creative technologists or transmedia producers (2019, p. 119). Technologists are professionals in the area of technology and are responsible for the development and implementation of media projects.

Numerous interactive documentaries in the West are produced by professionals from traditional film and television industries, such as journalists, documentary filmmakers and those with technical backgrounds in game programming and computers. Vázquez and López (2019, p. 259) described that most project production groups are interdisciplinary and might comprise dozens of members. Among these incorporated professionals are web developers, creative technologists, transmedia producers and web designers. Braida (2013, p. 94) noted that the essential figures of a project are not only camera operators and editors, but also web developers and web designers. In other words, project production in Western countries is mainly a multidisciplinary team collaboration with skilled and professional authors. After a wide range of research on interactive narrative, role-playing games, interactive television, and large-scale media information space, Murray and Murray (2017, p. 179) argued that the programmer is actually the author of the project, meaning that the author should not only write the text, but also the rules by which the text is presented. The author of the project sets up a series of scenarios and a world with different possible storylines (Mu, 2020, p. 118).

Traditional documentary filmmakers are constantly exploring new digital technologies and attempting to break the limitations of traditional narrative genres. This is evidenced by the emergence of new forms of the documentary film, such as interactive and generative documentaries, which illustrate the ongoing convergence and mutation between media, documentary and technology. The boundaries between the artist, director, media professional and technologist are becoming blurred, while documentaries are now being explored from different perspectives, on different platforms and in different cultures more than ever before.

Moreover, the White Paper on China's 5G Advanced-format and New-concept Video-Interactive Video Technology (2020) reported that, as of August 2020, the significant growth in interactive video production, platforms and applications has led to a more complex and hybrid identity for the author (Liu & Deng, 2020b, p. 5). The author, who can be a user themself, is able to produce the project on online video platforms that have interactive video production functions as well as on interactive video platforms; thus, the authorship shifts from the experienced professional to the general user. Indeed, the emergence and development of interactive documentaries have certainly expanded the definition and roles of the author.

Text/Project

The interactive documentary is a new media object, which uses a digital code and is set up not just by the editing of footage or other multimedia resources, but also by the development of the relevant platform/software and, therefore, a specific user interface (Braida, 2013, p. 93). From a traditional linear point of view, the narrative structure cannot be modified when the user watches the documentary. Therefore, such an author-user interaction is considered to be one-directional, passive and limited. Additionally, the traditional linear documentary generally follows a chronological sequence in its narrative.

In contrast, the narrative structure of the interactive documentary is interactive and interchangeable, and the user is even able to build its entire story. The features, platforms and types of interactivity have changed the project's narrative structure, creating a new one that does not follow a straight line from start to finish. Instead, the narrative branches out into complicated net-like structures that further engage with one another in various interlinked approaches.

The non-linear narrative structure is open and personalised, linking more hypertext/information and media resources to the project. At the same time, the user gets a sense of immersion and companionship through the freedom to explore and interact. Furthermore, in the traditional linear documentary, only the author is able to create the specific version of the story; it is a finished work. In contrast, the author and the user in the interactive documentary project can co-create or share the observed reality by exchanging their experience. The project becomes a living relational object that generates reality in the context of user engagement and interactivity.

Personalised Non-linear Narrative

Aristotle divided the dramatic structure of the tragedy into three main unities: the unity of place, the unity of time and the unity of action (Friedland, 1911, pp. 56–57). The narrative/construction of the traditional documentary follows this structure, that is, every such story should have a beginning, a climax and an end. In contrast to this linear dramatic structure, in the interactive documentary, storytelling is non-linear. The non-linear character of the project results from the interactivity and navigation features of the project and means that the project begins with a plot that has the potential to develop numerous independent subplots. Of course, the degree of non-linearity varies according to the type/style of the interactive documentary.

We interpret linearity as a convention. If one considers non-linearity, the cinematic text or simply the "media text" (Gillespie & Toynbee, 2006, p. 6), as we assume, is clearly non-linear and cannot even follow a linear path in appearance. Thus, narratives can be formed differently depending on the degree of non-linearity designed by the author. For example, some projects are close to a cinematic form by using an almost entirely linear narrative, such as *Insitu* (2011); some projects offer a more immersive narrative experience, such as *古墓派互动季：地下惊情* "*The Legend Hunters Interactive Season*" (2020) and *Prison Valley* (2010), or provide a generative experience of the project like *Motto.io* (2020) and the *Global Lives Project* (2009–present). In these cases, it is easy to see that the interactivity and non-linear structure of the project allow the narrative to be more personalised. The project generally uses an exploratory and open-ended structure to convey the stories and give autonomy to the user.

A feature of the narrative used to a varying degree is the multiple "voices of perspective" (Nichols, 2017, p. 54); some of the projects are organised around different perspectives of discourse, concerning the individual/user, the geographical locations and a wide range of re-

sources/databases, always offering more than one viewpoint. Clearly, the degree of non-linearity differs from one interactive documentary to another, and the diversity of narrative makes the project more personal and distinctive.

As Whitelaw (2002, p. 1) mentioned, the principles of narrative coherence, which lie central to traditional linear documentaries, have been fundamentally challenged by new forms of media and distinct narrative approaches.

From the user's perspective, the user follows their own interests to select sequences and content. For every user, the interactive experience of the project is unique, similar to personal customisation, from which the user derives satisfaction and enjoyment. From the author's perspective, since the project is a multi-angle presentation in a temporal and spatial context, different information can be designed and inserted according to different themes. The project can move from a parallel structure to an integrated tree structure or a reticulated structure, where the thematic chapters can be independent but related to other topics/chapters. Such a narrative structure gives the author more flexibility to expand the story line, resulting in a personalised project.

For example, with projects produced on the Bilibili online video platform, the user becomes the author, and every user can design their own projects on this platform, choosing different narrative structures and posting different media resources. 无人生还演出后台的故事 "*The Story Behind the Scenes of the Show*" (2020) takes a first-person perspective, with the user following the camera and gaining a behind-the-scenes view of the show. By clicking on the cue buttons of the video, the user can check the preparation of the different figures/roles. This project presents a parallel and non-linear narrative intended to provide the user with a personalised, immersive experience. Its non-linear structure and interactivity make the project personal and unique.

Informative and Exploratory Features

If the narrative of the traditional documentary can be considered as text, the narrative in the interactive documentary is represented by hypertext. The form of the hypertext no longer relies on the succession of footage organised on a timeline, as in the case of the film, but mainly on the spatial distribution of the links. In fact, with new media platforms/software, it is possible to create not only a non-linear arboreal or reticulated narrative path, but also a virtual space in which the user can freely explore, surrounded by an abundance of information.

The non-linear narrative of interactive documentaries results in a more complex and varied presentation of information or stories. The project includes links connecting different texts with other types of data, such as audio-visual formats and images. Different projects are presented with different combinations of such connections. Nelson (1965, p. 96) defined this specific text as hypertext, a series of audio-visual materials interlinked in such a complex manner as to not be easily presented on paper. Furthermore, Jucker (2002, p. 29) described hypertext as a non-linear text consisting of web pages/nodes, that is, textual units and links between these nodes.

The structure is represented by links on the text that lead to other texts, such as web pages or other content.

Some projects have multiple branches/links on the main page, similar to the structure of a tree. For instance, *Do Not Track* (2015) contains seven chapters with a total of 187 hyperlinks, of which 163 links are external links. Among a large number of links, informational links are presented in different forms, such as videos, images and texts. The multiplicity and complexity of the hypertext of the project provides a greater variety of ways in which the project can tell its story. Instead of gathering information in a closed linear narrative structure, the user has more opportunity and space to explore the topic, discover the information and interact with the project.

As Forceville (2017, p. 19) pointed out, the more freedom of choice the users have, the more the projects act as a large database where the users can select and browse original materials and contribute their own feedback on this basis. The interactive documentary highlights the information and features of the project through links to different types of resources. These web pages or informational resources give the user the option of exploring the knowledge in the virtual space.

Immersion and Entertainment

The traditional linear documentary has always desired to organise and present authentic stories in an educational and enjoyable manner. Within that context, the interactive documentary has also followed suit, attempting to provide an experience that combines the entertainment and informational features of the project. Gifreu-Castells (2011, p. 386) emphasised the importance of being able to combine entertainment strategies with information dissemination in the context of interactive digital media/paradigms. Different modes of selection and interaction are combined in the interactive documentary, allowing for more exchange between the project and the user.

The act of browsing and navigating diverse ideas for showing and structuring the content/information involves using game strategies and resources. For example, in the "*The Legend Hunters Interactive Season*" (2020), the user takes on the role of an archaeologist, and like in a role-playing game, the story is based on making choices and interacting to find clues and explore the truth. Thus, to some extent, the user plays with the opportunities that the project offers, and those opportunities can meet the user's basic need for enjoyment and entertainment.

Besides this strategy, the project is similar to a game experience, generally providing a deep sense of immersion for the user and keeping the need for information and knowledge alive, like with the 360° panoramic map navigation or full-screen mode, which enable the user to be more engaged in and focused on the project. The immersion is constructed through an interactive mode, which uses simple interfaces and hands-on operations like in *Motto.io* (2020).

Furthermore, Chinese projects are often designed with an online video platform using the Danmaku commenting system, which allows the user to share comments anonymously. The

comments are displayed scrolling from right to left and overlaid on the video display, creating a sense of companionship and immersion (Liu et al., 2016, p. 283). Also, the Danmaku comments – which, to a certain extent, are always being expanded and generated – become part of the text of the project they pertain to. Moreover, abundant and interesting comments provide the user with a more enjoyable and informative experience. Therefore, the different ways in which navigation and interactivity are provided in the project make it attractive and dynamic.

With such a feature, the user learns by playing in a fun, innovative and relaxed way, and enjoys interacting with others in real-time as needed. Therefore, the project meets three needs of the user: the need for entertainment, the need for knowledge and the need for communication with others. The close combination of these three aspects of the project makes it more attractive. The narrative structure, navigation and interactivity of the project create a deep sense of immersion and entertainment.

User-Generated Relational Objects

The definition of traditional linear documentary has evolved with the times, and that concept usually refers to something different according to specific individuals (Kim & Kim, 2014, p. 124). Following the modes proposed by Nichols (2017, p. 10), documentaries are considered to be a series of relationships shaped among authors, users, media and the objects/events in their surroundings. These relationships shift with time and are affected by social, economic, cultural and technological changes. Gaudenzi (2013, p. 215) pointed out that the industry does not link the interactive documentary with the "documentary family", instead describing it as online forums, digital artworks, location-based games, educational products and emotional maps. It is clear that when the documentary converges with technology and new media, an abundance of projects with more complex structures is generated. The convergence of the project and new media has also led us to take a fresh look at the author-project-user relationship and pay more attention to the dynamic evolution of the user, the project, the new media and the author. Sun (2011, p. 31) also pointed out that the traditional narrative is a closed system consisting of characters, plots and endings, and the flow of the narrative from the author to the user is a one-way sequence, while the narrative of the interactive documentary project is an open system comprising the project, the media, the author and the user.

The interactive documentary enables users to generate content, which means that it is no longer a project produced independently by the author, but rather, involves the user in its production. Whether the users are participating in activities or co-creating the project, interactivity places the project in a new dynamic relationship. In *A Short History of the Highrise* (2013), the user is able to generate content: readers of the *New York Times* can upload photographs of the high-rise buildings in their lives to contribute to the content of the project.

Furthermore, some projects are always in an open and growing state, and the user can continue to upload content to expand the theme of the project, like in the *Global Lives Project* (2009–present), an ongoing project that started in 2009. The different users of the project are

constantly sharing the stories of their lives. With the users putting their life stories and the reality of their world into the project, the project is no longer a finished work, but a dynamic, living relational object. Such projects are described as unfinished, with a continuous generation of content keeping them alive and fresh.

In addition, the framework/structure of the project is changeable and integrated, and the platform of the project is mixed and diverse, making the representation of the project more expressive. Mu (2020, p. 118) stated that the interactive documentary presents a non-linear narrative structure that differs from the traditional narrative work, with its arboreal structure, reticulated structure, parallel structure, etc. *Last Generation* (2018) is a web-based interactive documentary that follows a parallel non-linear structure, telling the story of three children of different ages living on Marshall Island. It can be viewed online, and the user can choose the sequence of watching and move directly to any random point in the timeline by scrolling with the mouse. Moreover, it is framed within a broader space with some additional content related to the audio-visual images. This non-linear narrative structure sufficiently broadens the sense of the temporal and spatial dimensions of the project.

Lastly, the medium of storytelling has also shifted from traditional media to new media and incorporated a variety of new technologies such as the Internet, mobile devices and art installations, opening up new modes and approaches to storytelling, as well as offering the user different ways to view and participate in the story. A growing number of projects are now supporting mobile interfaces, such as *Far Away From Far Away* (2019) and *Motto.io* (2020), or projects can be browsed on the web and mobile interfaces simultaneously, like "*The Story Behind the Scenes of the Show*" (2020). The interactive documentary should be considered a transformative force with a self-generating behaviour, creating an infinitely dynamic connection between all the entities that are related to it. From this perspective, the interactive documentary is seen as a living and continuously evolving system.

Generated Reality in Flux

Since reality can be presented in multiple forms, as precisely argued by Nichols (2017, p. 108), every documentary can present different modes of representation, depending on how the story addresses the audience. Modes are approaches to organising different versions of reality into texts; thus, they are the approaches concerning the negotiation of reality. If the idea of the logic of negotiation of reality is employed to analyse the interactive documentary, then once the user is required to participate in the project actively, negotiation occurs through interactivity.

The participation aspect of the interactive documentary completely changes the previous documentary narrative in terms of perspective and many other parameters. Looking at *Mapping Main Street* (2008) as an example, this project consists of an interactive platform database and a blog where any user can upload audio, video and photographs of Main Street as part of the project. Also, the users can interact with each other through the blog and social network links that are attached to the home page of the project. The interactions take place between the project

and the user and the user and other users, thus constructing a cultural space centred on Main Street, where the user can discuss and witness the changes in American urban culture. This generative interactivity approach can also be combined with traditional TV documentaries, for example, the micro-interactive documentary 武汉：我的战疫日记 *"Wuhan: My Epidemic Diary"* (2020) that was launched by the CCTV documentary channel in 2020. This project has neither a symbolic beginning nor an end; it develops its story in multiple paths/directions. Moreover, the user can participate and exchange ideas by posting, forwarding and commenting on social and video platforms, and uploading the relevant material instantly to construct and extend the theme of the documentary (Figure 9).

Figure 9

Users Participating in "Wuhan: My Epidemic Diary" Through the Kuai Short Video Platform

In both examples above, the narrative is formed in a continuously shifting and fluid state, and traditional narrative factors such as perspective, chronology, character and genre are done away with. In terms of perspective, every user constitutes a first-person witness. In terms of structure, the entire narrative takes on a fluid, decentralised, open form. The author builds the foundation structure, and the interactions of the users establish the secondary structure. Furthermore, if the basic structure allows for additional interactions between the users, then it will develop into a reticular structure and a fluid field. The author may not decide on the final form; the narrative is constructed in a flow. In addition, the presented reality is also progressively

established in constant flux. In this way, the narrative structure of interactive documentaries is decentralised, open and participative. The project is produced at the practical level: its narrative changes and expands with interactivity, and the reality to be expressed is established step by step. If, in the past, the representation of reality in traditional documentaries was to allow the audience to gaze at the reality, then the most significant shift brought about by interactive documentaries today is that of the audience's role transforming from gazing to generating. The generating process, which includes user interactivity and flow status, appropriately describes how the interactive documentary discovers and represents reality.

The *Love Story Project* (2002–present) is an evolving collection of stories related to love. It is a database-driven video archive that enables the user to watch the stories of different interviewees, with a random algorithm corresponding to specific content that may not be the same (Figure 10).

Figure 10

Videos of Interviewees Presented by Randomised Algorithms in The Love Story Project

In short, in the project, each interaction with the user creates a succession of stories; the narrative is transformed into a fluid field by means of interactions, and the reality presented is generated through such interactions. On the one hand, this practice of interactivity has changed the presentation of the interactive documentary project, that is, in terms of interfaces, platforms and databases; on the other hand, it has revolutionised the way that the documentary recognises and represents reality.

User

Iser (1979, p. 167) considered the author and the text as a medium, with the reader completing the act of reading and realising the meaning of the text by filling in the gaps in the text left by the author. When narratology is introduced to the field of interactivity, the reader's initiative becomes more impressive. The reader of interactive narratives becomes the user who also acts as a participant to influence and respond to content rather than a passive receiver of information.

The choices and actions of the user directly shape the structure, development and ending of the storylines. Moreover, it could be said that the author provides well-developed material and themes to the user, while the user is no longer just the viewer or the reader. With the popularity of interactive projects, the traditional sense of reader, audience and viewer are increasingly shifting to player, user, participant and contributor.

Gifreu-Castells (2011, p. 386) indicated that new media users are trained to interact with the project in front of a PC screen. Braida (2013, p. 95) mentioned that the audience is also characterised by being "active": the user is skilled and does not only view and navigate the project but also interacts with it. The user performs a "double look"[25] or a "double interaction": on the one hand, the user feels immersed in the space of the project, while on the other hand, the user is free to decide to switch their attention to something else. Prats et al. (2012, p. 78) pointed out that these receivers are required to learn the project's mechanism and rules in order to explore their stories in the project. The audience in the digital world is no longer just the receiver; they are users and learners, moving from watching on TV and in theatres to the Internet. The user is required to have basic Internet knowledge and skills. The interactive documentary project in the West is mainly received through the Internet in the form of a webdoc. However, with the use of mobile devices, new ways of accessing the project have been established via apps or by combining them with traditional ones. These projects develop stories through different media and platforms, where the user is actively expanding the narrative.

The Internet constructs a digital world that allows the user to take on multiple roles; the user can be the reader, the viewer, the observer, the interactor, the spectator or even the author. The user acquires a sense of presence and identity in the project, taking part in the audio-visual experience and sharing it with others.

The Perspective of the User: From Gazing to Participating and Generating

The popularity of theatrical and cinematic productions have prompter researchers to examine why spectators choose certain specific film genres, content, directors and famous stars (Braida, 2013, p. 83). In the 1970s, some theorists belonging to the feminist movement first introduced

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[25] Casetti (2011) describes it as a "multitasking form of attention" (p. 4).

the concept of the "gaze" in film studies (Mulvey & Pleasure, 1975, p. 10). Using the psycho-analytic theory of Lacan's mirror stage, the "gaze" – that is, the "male gaze" – in classic Hollywood films is a prerequisite for the affirmation of the ego of the viewer (McGowan, 2012, p. 6). According to Mulvey and Pleasure (1975) and the feminist film theory, the Hollywood audience identifies as passive viewers corrupted by the gaze. In the 1980s, researchers in the field of audience research theorised a new theory of communication using empirical methods, and thus, gave a different position to the audience. For example, Hall (1980, p. 59) argued that every cultural society encodes its message while communicating, expecting the message to be decoded in different ways. Therefore, the audience can either operate "inside the dominant code" or negotiate its own position.

Today, we can watch any audio-visual material or interactive documentary on different devices, and the concept of the audience has changed dramatically. The audience does not only watch in front of a computer, a cinema screen or television. Their experience is no longer collective; it is becoming more personalised and unique. In other words, the visual experience has metamorphosised (Braida, 2013, p. 85); the audience has transformed from passive gazers to participants and generators. Firstly, the participant is involved in the project as the player, observing the development of the story from the inside. For example, in *Motto.io* (2020), the user is involved in capturing short life-related videos and photographs, and the project sorts and organises these materials through the data system. The user takes part in the project, witnessing the generation of the final project and contributing customised materials to the project. For instance, in "*The Legend Hunters Interactive Season*" (2020）, the user is able to use Danmaku comments to share their feelings in real-time. These comments also become new content of the project, and when new users see these and navigate the project, they are both participants who are able to participate in the project in real-time as well as witnesses of its generation and development. As a result, the user is no longer a simple and quiet viewer but an active user of the Internet who is focused and immersed in experiencing the project, actively gazing into and interacting with the story world built by the author.

The Player: The Personas/Avatar of the Character

The word "avatar" is derived from Sanskrit (Turnbull et al., 2010), referring to the physical appearance of the gods in the human world. In the Internet era, the user becomes ID codes in social networks or projects, acts as a specific figure in role-plays and a protagonist in VR experiences and experiences interactive projects through a character/avatar. Personas are also a common feature of the interactive documentary as a narrative strategy. Designing an identity for the user helps them better understand the context of the text and become immersed in the scenarios more quickly and deeply. In *Fort McMoney* (2013), for example, a scenario and identity are well designed for the user from the start: "You are starting a documentary game in which the places, events and people, everything is real. Visiting *Fort McMoney* and participating in the referendums and debates with others. What happens to *Fort McMoney* depends on

you." The user is turned into a visitor, a journalist and a citizen with referendum rights and experiments with the whole interactive documentary through different forms of interaction. In this way, the user has a more explicit motivation, goal and strategy for their interactivity and is more deeply immersed in interactive storytelling.

The Participant, Contributor and Co-Creator

Current interactive documentaries take on the hypertextuality features of online media, enabling the user to co-create the story. In the case of the interactive documentary requiring the user's participation, the user is given creative control of the project and is invited to participate in the narrative. As a result, the author is no longer solely responsible for the project, as in the case of traditional film production. The user is no longer a passive audience, instead they directly participate in the story of the project. The choices and interactions they make while experiencing the project reconstruct the narrative structure of the story, and the path and the ending of the story are written through their interactions.

The hypertext reader builds up a narrative path between different textual units (Sun, 2011, p. 43). The text in projects is no longer a single-way exchange of information between the author and the user but a bi-directional communication system where the author and the user can affect each other. For instance, the project *Life on Hold* (2015) presents 10 Syrian refugees living in Lebanon. The project allows the user to explore and navigate their stories through videos, photographs, environmental sounds and maps of their journeys. Each character's page is like an audio-visual scrapbook, which offers the user flexibility in choosing the content they view, and gives the user an immersive insight into their daily lives (Figure 11). Moreover, the user can also submit an encouraging message for them, which is displayed as sparkling stars. The participation of the user in the project also generates a personal story for the user that involves interacting with the project and other users.

From the point of view of the user as a contributor or a co-creator of the interactive documentary project, the project relies on the active contribution of the user in its production and generation. The user contributes to the production of the project or co-creates the project with the author to enrich the narrative of the project. They are not just engaged in the construction of the personalised narrative, but also, as contributors, they co-design the project with the author. Thus, the user has become the co-author of projects like the *Global Lives Project* (2009–present)*, Motto.io* (2020) and "*Wuhan: My Epidemic Diary*" (2020).

Interactive documentaries highlight the fact that reality is recreated by individuals who support their specific version of reality, especially when it is the user who becomes the creator of the content (Soulez, 2014, p. 163). With different degrees of participation, the user brings forth different ways of representing reality in the project. This user-generated interactivity creates a new dimension in the interactive documentary. It is not so much a technological shift that allows the user to participate in the production of the project, but rather, the user's recog-

nition of their role in the making of the documentary aspect of the documentary; they are involved in generating the reality of the project. In short, the user takes on the documentary character of the project.

Figure 11

Maya's Audio-Visual Scrapbook in Life on Hold
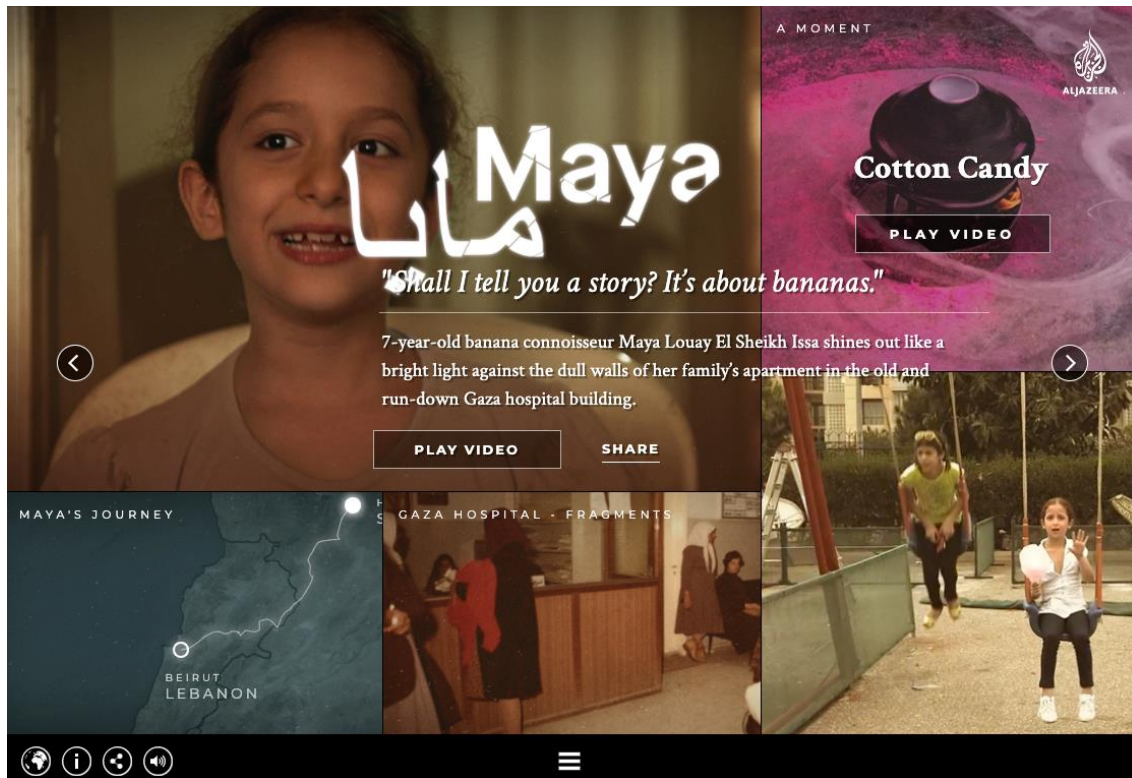
The User as the Consumer

The user of the project also has another role, that of a consumer. Since multidisciplinary professionals or international teams produce many interactive documentaries, the cost of the project is high, and production also takes a long time. Therefore, the team of the project should consider a business partnership model. For example, in *The And* (2014), the team set up a commercial shopping platform/web page for project-related products and added a link to the shopping web page on the project home page. After experiencing the project, the user is able to buy some related products. In the *Global Lives Project* (2009–present), the links to purchase products relevant to the project, such as books, are posted on the project home page. Therefore, combining the project with a business platform allows for a more diverse user experience. The user, as a consumer, contributes to the income of the project, and at the same time, the imprint of the project permeates the life of the user.

Furthermore, the consumer of traditional media is also being transformed into a consumer of the Internet generation. Today, as traditional media is confronted with integration and transformation, *the New York Times* and *the Guardian* are beginning to look for new opportunities.

Vázquez and López (2019, p. 262) highlighted that the interactive documentary on the Internet or multimedia platforms is a significant trend towards the future development of journalism. *The New York Times* and *the Guardian* have both launched their own interactive documentary projects to test the water, like *First World War* (2014) and *A Short History of the Highrise* (2013). Of these, *A Short History of the Highrise* (2013) received a lot of attention and won awards at several film festivals. This demonstrates the potential of the collaboration and integration of traditional journalism and the interactive documentary.

Of course, the user of the interactive documentary is also the online consumer. To some extent, viewer behaviour and user interests shape the narrative, subject types and benefit-generating models of interactive documentaries. It offers a new perspective and approach to consolidating the project and traditional media, which are drastically transforming.

The User as the Producer or the Author

The user base of the project is complex and diverse, including not only the traditional cinema audience, TV viewers and DVD consumers, but also a web audience that experiences the project through different platforms like video-on-demand and TV online platforms or the websites of institutions like the NFB. Interactive documentaries exist in various styles, and the author starts to develop the project through different platforms and mobile applications. The user, as the author of the project themself, explores the project in a form that comprises different media and platforms. As indicated in the third chapter, the interactive video/documentary in China is entering an exploratory and developmental phase.

Major online video platforms in China have mapped out the layout of the interactive video, which supports interactive video production, and published interactive video production guidelines. Several interactive video platforms and applications that lower the threshold of production have also been introduced. For example, the Tencent Video platform[26] launched an interactive video platform to encourage independent authors to actively participate in project production. The iQIYI platfor[27] released an interactive video platform and production plug-in (Figure 12) to enable the "zero-threshold" editing of interactive videos. The Bilibili platform[28] added the function of interactive video to its "creation centre", offering the uploader/content curator the opportunity to design their interactive videos (Figure 13). Furthermore, the Youku platform[29] also provided an interactive content platform. These emerging interactive video production platforms and functions provide a strong foundation for the user to become an inde-

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[26] https://m.v.qq.com/txi/ (Accessed: 14 June 2021)

[27] http://www.IQIYI.com/ivg/ (Accessed: 14 June 2021)

[28] https://www.bilibili.com/video (Accessed: 14 June 2021)

[29] https://icp.youku.com/guideline/index.html#menu-1 (Accessed: 14 June 2021)

pendent author of interactive documentary projects. Thus, the user can transform from a member of the audience to an author of a project. The identity of the user is also transferred from the spectator to the author and enters a more complex phase.

Figure 12

Interface of the iQIYI Interactive Video Production Plug-In on Adobe Premiere Software
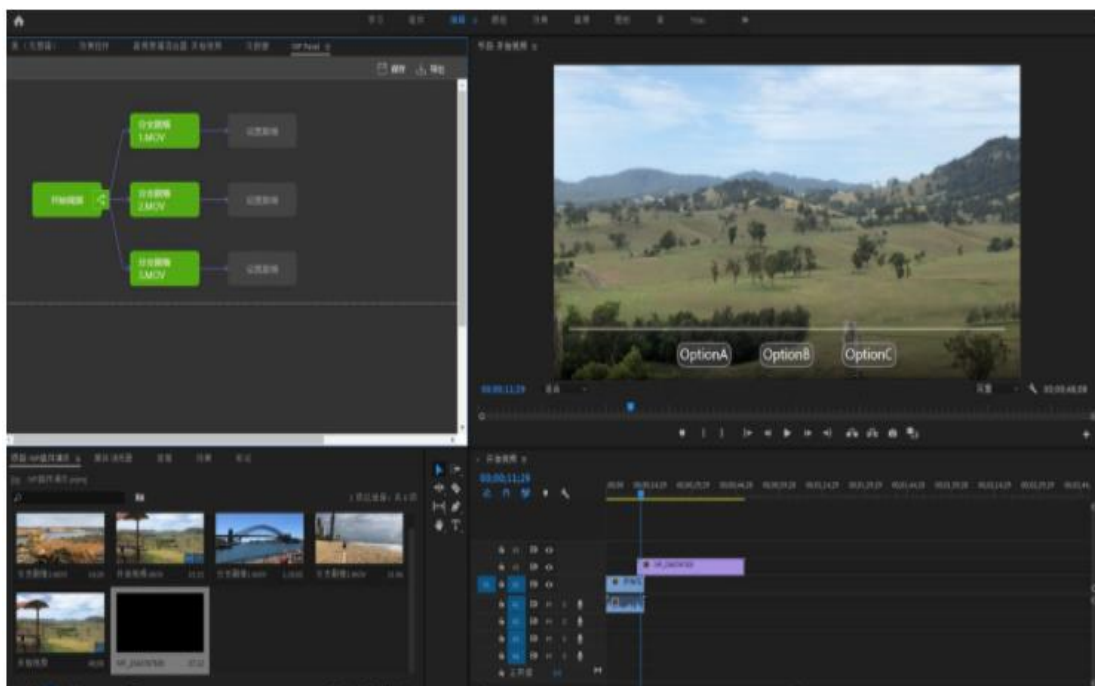
Figure 13

The Operating Interface of the Interactive Video Function on the Bilibili Video Sharing Platform

The Author-Project-User Relationship

Interactivity takes interactive documentaries out of the traditional linear documentary genre and attributes a distinctive new character to them, affecting their production, distribution and reception. The author, the user and the project have jointly influenced and shaped the modes and characteristics of interactive documentary projects. The projects in China and the West have exhibited their own features in the era of contemporary media.
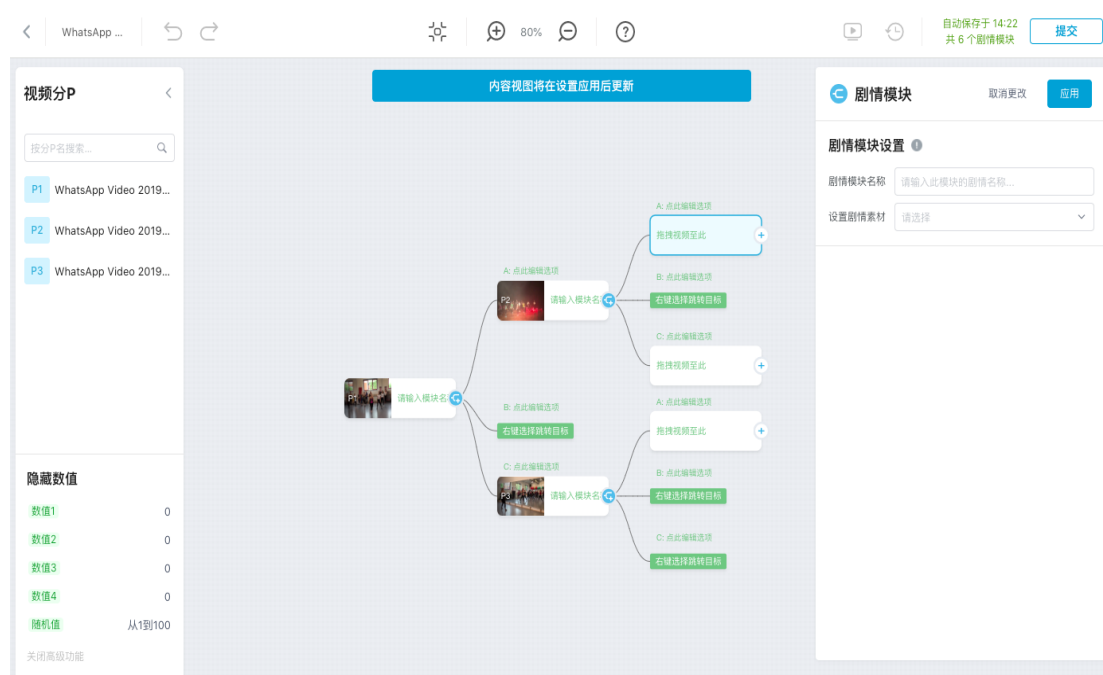
The medium continues to evolve and provides new creative vehicles and platforms for interactive documentaries. Accordingly, the identities of the author and the user become more complex and start to overlap and shift. The position of the user in the narrative of the project continues to rise; the demands on authorship also increase and become more complicated; and the author begins to take on new roles, like that of a programmer, an assistant and a new media artist. Furthermore, the narrative structure of the project also departs from the traditional manner, resulting in a non-linear structure that is arboreal and reticulated and the instantaneous generation of content, which have developed into increasingly diverse forms and continue to do so.

So far, interactive documentaries in the form of the web documentary are widespread in online media worldwide and are acknowledged by the user. Projects distributed on mobile devices have also emerged one after the other, contributing to the existing types and modes of interactive documentaries.

Interactive Documentaries Propose New and Different Approaches to Accessing Information

It is clear that interactive documentaries redefine the author-project-user relationship. Interactive documentaries propose new and different approaches to access information and the "interdependence" established between users and the portrayed reality (Aston & Gaudenzi, 2012, p. 135).

Firstly, with interactive projects, their setting or context grows in importance. A shared commitment of time and space is required to generate a feeling of immersion, as well as the involvement of interactivity as an approach to drive participation. Secondly, the wide variety of hypertext and audio-visual materials set the stage for an experience that the user is willing to interact with. The diverse combination of hyperlinks, short videos and photographs is set up so that the user has more control over their choices and decisions in the project, which makes it possible for them to better explore and customise the story. Thirdly, with its different degrees, interactivity is the unique characteristic of the project that has maximum potential, resulting in an enriched experience that is valued by the user. A weak or medium degree of interactivity involves interaction with the interface and the proposed visual dimension, allowing the user to select, navigate and move in a non-linear way. It depends on and is determined by the method of navigation. A high degree of interactivity allows interaction in two ways: on the one hand,

it allows interaction concerning the content of the project, including contribution to content, co-creation of content and participation in activities; and on the other hand, it allows interaction in terms of the interactor/user of the project, such as leaving comments or generating Danmaku comments. In general, digital generative forms of interactivity fall within a high degree of interactivity. The user accesses information through experiencing different levels of interactivity while generating the reality in flux.

In addition, an emerging strategy is the consumption of information as entertainment and personalisation as a part of immersive interactivity. It sets up an identity and scenario for the user and permits them to explore from a first-person perspective. In terms of role-playing, the personalised narrative experience is considered necessary by both users and authors (Vázquez & López, 2019, p. 254).

Interactivity and the Author-Project-User Relationship

The interactivity of interactive documentaries makes the author-project-user relationship more mixed and complex. It is quite clear that the interactive documentary project itself is based on the evolution of digital technologies, which have reformed the production and distribution of interactive documentaries. The user builds the stories according to their choices and contributes their own experiences into related branches to expand the story content, making it possible for the project to present reality from different perspectives.

First, the user interacts with the project interface, selects different paths through navigation and scrolls and clicks with the mouse to access additional content, thus strengthening the user's feeling of participation, and creating a sense of belonging to the author role. At the same time, the user makes decisions according to the scenarios and is no longer a spectator; this improves the emotional connection between the user and the project and enhances the user's sense of immersion.

Second, the user interacts with the project. The relationship between the interactive documentary and the user takes shape in the viewing process and is also generated in the content selection process undertaken by the user. The user has enough autonomy over the content, and in this dialogue, the project is no longer simply a text to be received but a conversational text that communicates with the user. Therefore, conversational interactivity goes beyond the features of the traditional documentary. In the selection process, the user has a deep understanding of the content and reflects further on it. In other words, interactive documentaries allow for more frequent and in-depth dialogue between the viewer and the content/project.

Third, there is interaction among the users. This is particularly well demonstrated in Chinese projects. Unlike with traditional documentaries, the ordinary user is not an invisible or weakened presence during the viewing process of interactive documentaries but an emphasised one; individuals are able to interact with others while exploring the project. Throughout the project experience, there are also zones specifically designed for interactivity. The first is Danmaku commenting, which is considered to be a standard feature in many video platforms

in China. The user can open this function in different places and at different times while watching the project to check the comments of others and also add their own, completing a sort of communication "time travel". The user can complete the interactive process through Danmaku. Danmaku is, to some extent, already a part of the text of the project. The second is the comments section, which exists independently of the project and is generally placed under the video, where the user may leave comments and generate interactions.

In summary, the interaction between the users, whether through Danmaku comments or the comments sections, is intended to provide a space for the exchanging of ideas. It helps the users connect with others and expands the content of the project. Interaction between users creates an interactive emotional chain.

Integration and Development with Multiple Platforms and Channels

The interactive documentary integrates diverse platforms and devices to make the project more personalised and give the user more options. Both computer-based and mobile-based projects make interactivity more flexible and unique. The integration and cooperation of the project with social platforms, video platforms, commercial platforms, professional project platforms and traditional media platforms make it possible to propose new approaches and ways of consuming information in the project. In a more global context, the project considers the entertainment factor and establishes a permanent connection with interactive mediums and communication technology.

Furthermore, the emergence of new professional production platforms provides the user with a simple way to construct the project, allowing more independent users to be the authors and generating interactive projects involving different forms of interactivity. Of course, with the integration of multiple platforms, traditional media finds fresh perspectives in collaboration with the interactive documentary project, which enriches its storytelling and explores coexistence with the production of traditional support. For instance, *A Short History of the Highrise* (2013) combined the practice of traditional media and the interactive project, transforming the reader of the newspaper into the user of the project. The role of the user switched from that of the gazer to that of a participant and generator. Thus, multiplatform integration and narrative innovation have an encouraging impact on the development of traditional media and also represent a way to attract new users. Another example is "*Wuhan: My Epidemic Diary*" (2020). Traditional media is committed to the integration of multiple platforms and the innovation of interactivity in order to hunt for younger users, who are accustomed to accessing information via social platforms and fluidly switching between screens. The interactive documentary can draw on a variety of resources, perspectives and experiences. It has become an increasingly hybrid way of telling stories and disseminating information.

In summary, this transformation of the author-project-user relationship generates new dimensions in the documentary field. The documentary has evolved from being a project with a high production cost, a sophisticated production team and specific operational requirements, to

a project in which the user is capable of becoming the author themself. The interactive project moves towards the development and integration of multiple platforms, gradually adapting to mobile formats and building in collaboration with video platforms. The goal of the project becomes clear: providing the user with a sense of immersion and companionship as well as maintaining the information dissemination feature and authenticity of the project. Transforming the author-project-user relationship provides a broader range of potential for young and active users to act as participants, contributors, co-creators and authors. The personalised combination of different degrees of interactivity and storytelling meets the expectations of the user concerning access to information, entertainment and companionship, as well as transforming interactive promises into real interactions.

The Online Generative Documentary as a Representative Type

As mentioned in the third chapter, Gifreu-Castells (2010, pp. 140–143) proposed a categorisation of the development of interactive documentaries in four primary levels: offline multimedia documentaries, online linear documentaries, online interactive multimedia documentaries and online generative multimedia documentaries. Based on this categorisation of interactive documentaries and their main characteristics, this chapter analyses online generative multimedia documentaries as a representative type of interactive documentaries. This is currently a type with several styles but less production experience, where the user acts as an interactor, author and contributor to the project itself. Instead of being limited to viewing the stories in a linear way or navigating through the different sections in a non-linear way, the user interacts; they can leave their thoughts or trail in the project. These thoughts can be shared in discussions in forums or, in the most prominent sense, be audio-visual contributions to the forum itself, thus adding material or experience to the project. These projects effectively stimulate interactions between the user and the project. In this type of interactive documentary, the new logic of representation is related to how the user navigates and interacts with the story/content or other users, rather than how the producer represents the reality of our world. In brief, the user of the online generative documentary is based more on their navigations and interactions than on a conventional linear representation of reality. Therefore, in order to establish and define this conceptual framework precisely and concretely, this chapter focuses on Chinese and Western projects and proposes how to implement generative and social interactivity with the aim of improving the approaches to the creation and production of interactive documentaries.

As a representative type of interactive documentary, the generative documentary calls into question traditional documentary research and dissemination approaches. The analysis of texts, a fundamental approach to documentary research since the 1970s, turns out to be challenging due to the multiple potential ways of relating to the texts (Zhao, 2008, p. 5). Research into this new phenomenon should take an international, multidimensional and complementary perspective, considering aesthetics, sociology, technology and culture. Furthermore, with the significant hybridisation of media forms in interactive documentary projects, thorough exploration is called for. Currently, challenges can be found in the analysis of specific types of interactivity due to the lack of interpretation of the characteristics of the interactive documentary. As such, in this chapter, the core parameters of the interactive documentary are first discussed from the perspective of the project itself, to provide a foundation for analysing the characteristics of generative documentaries, the representative type of the interactive documentary. Second, the hypertextuality and multimediality in generative documentaries are addressed through a case

study of Chinese and Western projects. Third, since interactivity is the most crucial characteristic of interactive documentaries, this chapter considers the four types of interactivity in generative documentaries to specifically examine the features of interactivity in the project while emphasising the significance of social and generative interactivity. Fourth, generative documentaries in different countries are compared to further explore the approaches of generative and social interactivity. Finally, it is pointed out that generative documentaries are now encountering issues that need to be addressed, and the current and future potential of generative formats are highlighted.

In order to carry out this research, a qualitative approach was used to observe, assess and draw conclusions in this emerging field of integration. In the current projects in China and the West, hybridisation is intrinsically present in interactive documentaries. The samples were selected for analysis based on the limited number of projects that had been developed. They consisted of seven referenced generative documentaries released between 2009–2020 from five countries (Table 7). These projects are published on new media forms such as websites and are available for viewing on different platforms and interfaces/devices. Also, the interactive format of these projects is a good method for providing information on and experience of topics. Thus, the projects all have interactive characteristics and involve both generative and social interactivity. Therefore, focus is placed on the designs of the structures in each project, and interactivity is highlighted without ignoring the development of the story and the user's experience. This can contribute both to the enrichment of the materials of the project as well as to the diversity of the presentation of the project. Furthermore, examples from the primary database of interactive documentaries (MIT Docubase, i-Docs, DocLab) have been presented with dimensions based on locations, topics or timelines. Of course, the selection of examples also considers the types of interactivity employed in the projects, the levels of user engagement, the use of different media resources, as well as their recognition of related activities in China and the West (IDFA DocLab, Sundance New Frontier, ANTI Festival, BigPond Adelaide Film Festival).

Table 7

Selected Samples of Online Generative Documentaries

Name	Year	Country	Production	Topics
Global Lives Project	2009–present	United States	Collective production	Lifestyle
A Short History of the Highrise	2013	United States, Canada	National Film Board of Canada and The New York Times	History, Memory, Urban Life

Name	Year	Country	Production	Topics
The And	2014	United States	Heran Abate and Julia Gorbach	Love and Relationships
Do Not Track	2015	France, Canada, Germany	Arte.tv, BR, National Film Board of Canada and Upian	Privacy and Surveillance, Digital Technology
无人生还演出后台的故事 "The Story Behind the Scenes of the Show"	2019	Mainland China	Border Notebook and Bilibili	Drama and Life
古墓派互动季：地下惊情 "The Legend Hunters Interactive Season"	2020	Mainland China	Central Studio of News Reels Production, Mango Entertainment and Youku	Archaeology and History
Motto.io	2020	Canada	National Film Board of Canada	Arts and Culture, Interactive Storytelling

In the context of globalisation, different countries play a role in the production of interactive documentaries. In a study focusing on America, Europe and Australia, Gifreu-Castell (2019, p. 52) argued that France and America are making the largest contributions to interactive documentary productions. As far as production is concerned, transnational co-production is also common. Some projects are co-produced by multimedia or production companies, organisations and institutions or other media institutions. In light of the above, interactive documentaries from Canada, France, Germany, the United Kingdom, the United States and Mainland China were selected as examples in this chapter. *Do Not Track* (2015) and the *Global Lives Project* (2009–present) are both co-productions; "*The Legend Hunters Interactive Season*" (2020) and "*Story Behind the Scenes of the Show*" (2019) are projects from Mainland China that contribute to interactive documentary research from an Asian perspective.

Data were collected through qualitative content analysis grounded in the data of project observations and experimentation in an analysis table, the analysis sheet of Vázquez et al. (2017, p. 405) and the model proposal of Gifreu-Castells (2015, p. 3). With these main parameters for interactive documentaries, hypertextuality, multimediality and interactivity of the generative documentary are analysed. Moreover, the projects are analysed through four types of interactivity. The quantitative approach to addressing how interactive documentaries affect the user experience and reconsidering the author-project-user relationship can initiate new avenues of research in this field.

Parameters for the Content Analysis of Interactive Documentaries

An interactive documentary is an emerging form of representation of reality. Deuze (2003, p. 211) pointed out that hypertextuality, multimediality and interactivity are the main characteristics of products published online; Vázquez et al. (2017, p. 405) put forward the three critical categories of interactive documentaries; and Gifreu-Castells（2017, p. 13）mentioned the four critical features of the development period of the interactive digital medium. On the basis of these, three major parameters for the content analysis of the interactive documentaries were set. In addition, an analysis model of the parameters was constructed by combining previous studies, such as Gaudenzi's interaction modes of interactive documentaries (2013, p. 71), Ji's (2019, p. 11) characteristics of interactive films and Fan's (2018, p. 26) three main classifications of interactivity. This model (Table 8) takes into account both product features and content, as well as the complexity and hybridity of interactive documentaries. Furthermore, through this analysis, the generative documentary, as a representative type of interactive documentaries, is in a position to effectively describe the pluralistic and dynamic features of the author-project-user relationship and thus, look into the characteristics and design approaches of interactive documentaries.

Table 8

The Parameters of the Analysis Model

Category	Parameter	Brief Description
Hypertextuality	Structure	The fundamental architecture/outline of the work
	Independent episode	Fragmented chapters or units that have independent content and combine to form a complete work
	Navigation	The way the user accesses and navigates the project
	Menu	Presents the main content, which is displayed on the project home page
	Hyperlinks	Internal and external links
Multimediality	Usable resources	Text, images, photos, videos, audio, graphics (GIF), maps, external devices and other interactive forms

Category	Parameter	Brief Description
Interactivity	Selective interactivity	The user selects and controls the project with the mouse, keyboard or other devices. They can choose the direction and viewing order and freely select options and explore the project.
	Immersive interactivity	The user feels like they are part of the story, for example, through role-playing. The user becomes immersed in the atmosphere of the project, for example, through a 360° panoramic view, giving them the sense of actually being there.
	Social interactivity	The user is given the space to express themself and has a sense of belonging to the community, for example, by sharing links, discussing or leaving comments in the forum or using their personal data.
	Generative interactivity	The user is a contributor and producer, submitting data that contributes to the project, i.e. user-generated content

Hypertextuality is the elaboration in interactive storytelling that allows for the breaking away from linearity and the ability to delve into the content/topic and into participation. Therefore, the hypertextual parameters of the content analysis concern the structure of the work, chapter units, navigation of the project, home page menu and hyperlinks. Similar to the contents of a book or the architectural frame of a building, the structure of the project can be made accessible to reflect the general thoughts and intentions of the producer. The project is constructed through its structures, which are described as axial linear, reticulated and arboreal. Chapters and units are an accurate representation of the project. In general, a project is comprised of several different chapters, each with distinct themes. Of course, there are sub-chapters within independent chapters, or links related to other chapters. For example, in *A Short History of the Highrise* (2013), there are four chapters, and each chapter contains several hyperlinks leading to the associated content, which gives the user greater freedom to explore the project. The navigation provides a way to get to the next section or step, including by moving the mouse, clicking a button or touching the screen to interact with the project. The menu contains all the buttons shown on the project home page. The buttons are displayed and categorised, making it possible for the user to control and experience the project. Hyperlinks include all the links in the project as well as external links, which complement the topic of the project. The approaches, types and number of hyperlinks affect the experience and acceptance of the project.

Multimedia is a resource used for the project, including text, images, photography, video, audio, graphics, maps and other interactive formats. There are various proposals for the use of multimedia, which have significant visual powers. Within a functional and intuitive interface, the integration of various elements can be a central issue in terms of engagement and attraction.

Interactivity is the most distinctive feature of the interactive documentary, which brings new vigour and vitality to the collaboration between the documentary and new media. The author gives partial control of the non-linear narrative process to the user, allowing them to be immersed or involved in the project. The levels of control over the project granted to the user depend on its authors' settings, which range from sharing to contributing to the projects. With regard to interactivity, selective interactivity, immersive interactivity, social interactivity and generative interactivity are emphasised here. Among these types of interactivity, the levels of user engagement incorporate the different roles of the users as participants in the project's activities, contributors to parts of the project's story, co-creators of the presentation of the depicted reality and authors of their own stories.

Content analysis of interactive documentaries using these three parameters allows for a better understanding of the interactivity practices and design of the interactive documentary project. Additionally, the interactivity embodied by generative documentaries is more hybrid and innovative. The types and preferences of interactivity in generative documentaries from different countries will be discussed later in the chapter.

Hypertextuality and Multimediality in the Online Generative Documentary

Hypertextuality in the Online Generative Documentary

In this analysis, three essential characteristics of interactive documentaries are examined: hypertextuality, multimediality and interactivity. Table 9 outlines the hypertextuality characteristics of the examined projects. Unsurprisingly, these projects are particularly distinctive in their structure and navigation style. The types of hyperlinks, the number of units and the menus are also visibly different.

Table 9

Hypertextuality in the Selected Samples

Name	Structure	No. of Episodes	Navigation	Menu	Hyperlinks
Global Lives Project	Reticular (map view and grid view)	7	Thematic (buttons)	7	Mostly internal links
A Short History of the Highrise	Axial linear with arboreal	4	Temporal (timeline) and thematic (buttons)	4	Mostly internal links
The And	Axial arboreal	4	Procedural (buttons) and thematic (scroll)	6	Mostly internal links

Name	Structure	No. of Episodes	Navigation	Menu	Hyperlinks
Do Not Track	Axial arboreal	7	Thematic (scroll and buttons) and temporal (timeline)	8	Mostly external links
"The Story Behind the Scenes of the Show"	Axial linear and arboreal	1	Procedural (buttons) and temporal (timeline)	-	Internal links
"The Legend Hunters Interactive Season"	Axial linear and arboreal	5	Procedural (buttons) and temporal (timeline)	-	Internal links
Motto.io	Axial linear with arboreal	6	Procedural (touch the screen) and thematic (buttons)	4	Internal links

As for the construction of the structure and navigation, first of all, the variety and complexity of these projects are considered. The user scrolls the mouse, clicks on buttons or uses other methods to navigate and explore the project. The navigation enables the user to experience the project flexibly. In this way, different projects have separate structures to stimulate the user's exploration and curiosity. However, certain risks are entailed by such structures and navigation systems, such as difficulties arising from following non-standard navigation systems or loss of attention due to the complicated structure of the project that leave the user confused or uncomprehending and demotivate them from exploring the project further (Liu, 2018, p. 19). Therefore, it is not correct to say that the more complexity, the better. Among the selected projects, a combination of an axial linear structure and an axial arboreal structure or an axial linear structure (temporal structure), which guides the user through the interactive paths of the projects, is favoured.

Second, the structure and navigation style presented in Table 9 illustrate the personalisation and interactivity of the project. Therefore, what makes interactive documentaries fascinating and engaging is that they are personalised, permitting the producer to display their materials within a different structure. As Morisset, the author of *Motto.io* (2020), pointed out, a project is a magic box that things go into; the user takes photos or micro-videos to present something of themselves, shares them with others and then gets the meaning/text that these things express (Mal, 2020). In *The And* (2014), the user engages with love and relationship topics through a quiz game, watching quiz videos of other users or purchasing quiz game products. The structure of the project is no longer limited to an axial linear structure or an arboreal structure, but begins to penetrate a wider hybrid structure with blurred boundaries.

Lastly, the non-linearity and independence of the project are expressed in the way the project is structured and navigated. From a structural perspective, the fragmented content and materials of the project contribute to a more interactive experience. Moreover, the navigation approach of the project makes non-linear storytelling possible as well. These independent steps and personalised themes allow the user to partially control the process of the project, giving the user an experience of freedom. In addition, this non-linear narrative and the navigation approach of the project make it more comprehensive and informative. Thus, in contrast, traditional linear documentaries are longer and can last an hour or more. Interactive documentaries can be viewed depending on the user's preferences, and most of the materials or clips are in short forms. Here, it is more challenging for the producer to design interactive documentaries that allow the fragmented and informative content to fit into a dynamic structure. In the *Global Lives Project* (2009–present), which has different protagonists, each of the protagonists has several separate videos. The topics of these individual videos are complete, independent and short in length. Therefore, the user can decide the order in which those videos are watched, as, for example, the user is free to choose different videos of a certain character. With this in mind, the openness and diversity of the structure and navigation of these projects allow for a unique user experience.

The average number of chapters of the analysed projects is around five, and they contain appealing and easy-to-understand titles. This way, the user gets to take a closer look at each chapter. In general, chapters organise the story in chronological order, operational steps or location, and, in most cases, they follow a linear axial flow. The settings of these chapters help the user understand the intent and key ideas of the project. Generative documentaries in which the topics of the different episodes are independent but connected represent a step beyond tradition.

Furthermore, different projects utilise a main menu to different degrees. It is common for the menu of the project to include options like "Share", "Language", "About" and "Chapters". The menu buttons on the main page have an important function within projects such as *A Short History of the Highrise* (2013), *Motto.io* (2020) and *Do Not Track* (2015). The user gets an overview of the content and its structure through the main menu and can explore each chapter in a practical way. In *A Short History of the Highrise* (2013), the main menu contains instructions that let the user quickly get an idea of how to view and interact with the project. In *Motto.io* (2020), the main menu is designed to be more concise and simple due to the fact that participation in the project is only available via mobile devices. *The And* (2014) menu even includes a purchase button, which closely integrates the project with relevant commercial products. Based on the above, it is easy to see that different designs of the main menu of the project enable the user to rapidly take control of the project without getting confused or lost, thus providing a sense of belonging and confidence.

Table 9 highlights the implementation of the hyperlinks of the project that provide the user with further relevant information so as to emphasise the informative feature of the documentary.

For instance, *Do Not Track* (2015) contains a large number of external hyperlinks that lead the user to external sites for more information on the topic presented. In *A Short History of the Highrise* (2013), while the video is playing, hyperlink buttons are provided to complement the topic material. In these projects, the complexity and multiplicity of hyperlinks are converted into an alternative structure of the story. Furthermore, the user can get closer to a certain reality through different controls: depth, width and content selection.

Next, the hyperlinks of these projects are all independent of each other in a non-linear and non-sequential format. By accessing these hyperlinks, the user can get a more personalised experience. Also, the content of the hyperlinks is displayed in the form of images, text and video, which makes the project fulfilling and impressive. However, a project with fragmented and independent hyperlinks also carries some risks, such as the user losing attention and getting exhausted during navigation, or the project employing unconventional navigation approaches, for example, non-systematic, excessive hyperlink indications and cluttered displays.

Thus, with the exception of *Do Not Track* (2015), most of the hyperlinks of the projects are internal hyperlinks. Internal links enable the producer to personalise the content and structure of the project to present what they have in mind so that the user is engaged and immersed in the project according to their preferences. In general, external links will lead to a new page, and the user will lose the sense of immersion or not return to the project after viewing the external content. Therefore, internal hyperlinks are widely used in current projects and are considered to be a more advanced and complex method of display that coordinates the narration. Such hyperlinks allow the user to be more immersed in the project, making the viewing more dynamic and fresher.

In summary, the current generative documentary brings the active user into an open space of the narrative world and maintains its interactivity. The wide-ranging adoption of hypertextuality in projects is frequently mentioned, particularly regarding their structures, navigation systems and external and internal hyperlinks. On the one hand, projects are structured and navigated in multiple ways, for instance, with an informative or entertaining focus. On the other hand, the boundaries of the structural designs and production of the project are more blurred, and the current projects are starting to consider integration with mobile, commercial and social features.

Furthermore, there are differences in how hypertextuality is presented in projects in China and other countries. First, recent Chinese generative documentaries are more conservative and conventional; they are basically constructed in a linear and arboreal structure that allows the user to control and participate in the project. Second, Chinese projects are navigated by completing instructions, and the user discovers the story through a timeline. The producer maintains a high degree of control, and the user only makes a selection from the resources that have been given. Third, projects in China emphasise a game-based or conversational mode, and at present, there are still very few types of projects. Fourth, Chinese projects are presented on mass online video platforms instead of specialised websites, thus enabling users to access the projects

promptly and efficiently. Fifth, since the presentation platform of the Chinese projects is not based on a standalone web page, the project itself is dominated by internal hyperlinks that supplement the content, and these hyperlinks are fragmented and insufficient. Finally, these projects in China provide a strong sense of immersion, and the user enters the next step of the story through the controls. Each project has distinct and easy-to-identify methods of navigation, which helps to retain the user's attention.

Multimediality in the Online Generative Documentary

The employment of multimedia in generative documentaries (Table 10) demonstrates a broad range and mix of resources, and the role of videos remains especially prominent. There is no doubt that audio-visual elements are the primary components in every project chapter. For example, in *A Short History of the Highrise* (2013), mainly videos up to 3 minutes long were used, and in *The And,* there are a total of 182 short videos.

Table 10

Multimediality in Selected Samples

Name	Description
Global Lives Project	10 videos, graphics, texts, images, photographs, maps
A Short History of the Highrise	4 videos, graphics, texts, images, photographs and audio
The And	182 videos, graphics, texts, images and photographs
Do Not Track	23 videos, graphics, texts, images and maps
"The Story Behind the Scenes of the Show"	10 videos, graphics, texts, images, Danmaku text and graphics
"The Legend Hunters Interactive Season"	189 videos, graphics, texts, images, photographs, audio clips, animated graphs, Danmaku texts and graphics
Motto.io	Thousands of micro-videos (without sound), images, texts and photographs

Compared to in traditional linear documentaries, multimedia in generative documentaries are presented in a variety of forms and languages that are integrated into the documentaries. For instance, in *Do Not Track* (2015), *Motto.io* (2020) and the *Global Lives Project* (2009–present), different language options are available. Moreover, in the context of a transmedia strategy, the projects are presented through different platforms/devices, such as "*The Story Be-*

hind the Scenes of the Show" (2019), which supports mobile and computer interfaces to experience generative documentaries. The multimedia features of the projects can be enhanced by user-generated content or the content available in the project databases themselves.

The projects not only converge various media and languages that contribute to the storytelling, but also provide alternatives for the user. In *Motto.io* (2020), the text, graphics, images, micro-videos and photographs are combined with interactive features and a specific practice, which requires the user to participate. Nowadays, generative documentary projects have adopted different multimedia forms and resources, and the combinations of these forms through the projects' interfaces are accepted.

As Vázquez and Gifreu-Castells (2019, p. 122) mentioned, "digital support" grants the capacity of combining at least two of the following three elements in a single message: text, image and sound. Currently, media composition has expanded towards videos, graphics, photography, geolocation, maps, mobile devices, interactive applications and more.

In short, first, the use of multimedia in the project is becoming increasingly multiplatform, entertaining and diversified. Second, audio-visual materials are more fragmented and shorter, making it possible for the user to obtain more information and knowledge within a short time. Third, the design and production of the projects have started to favour mobile devices, so more mobile formats have been introduced, such as the vertical screen or live streaming videos. Fourth, the multimedia resources of the project are presented noticeably and are easy to access, thus allowing the user to immerse themselves in the project.

Furthermore, since the Chinese projects are presented on mass online video platforms, the Danmaku comment system permits the user to be more participatory and dynamic. This system uses collaborative video annotation (Howard, 2012, p. 167), which permits the user to post comments on specific frames. These comments are located on a text field that runs across the screen from right to left (Zhang & Cassany, 2019, p. 20). The interactivity of the Danmaku comment system will be described further in the following section on interactivity. Projects in China are more oriented towards multimedia formats for mobile devices.

Interactivity in the Online Generative Documentary

Interactivity is the most influential element of interactive documentaries, allowing them to discover more potential and possibilities for growth. Although, in this sense, the analysed samples are conservative in the types of interactivity they employ, these projects also present the new functions of the users with regard to the content of the project. According to Aarseth (1994, p. 60), the user is described as having a four-fold function: an explorative, a configurative, role-playing and poetic function. Gifreu-Castells (2010, p. 112) also pointed out that interactive documentaries redefine the author-project-user relationship and considered that the status of the user has changed from that of the viewer to that of the participant, contributor and interactor. Also, Gaudenzi (2013, p. 38) proposed a systematic classification of the modes of interactions

in ascending order based on the potential contributions of the user: hypertext mode, participatory mode, conversational mode and experiential mode. As can be seen clearly, researchers focus on the functions and features of the user while the role of the user in the project becomes important and active.

Concerning the aspect of media, the hypertextuality and multimediality of interactive documentaries have undergone significant development. For instance, a wide variety of structures, navigation approaches and diverse multimedia forms are employed in the analysed projects. Also, different levels and types of interactivity can be further explored in the context of the exploration of different experiences.

In terms of interactivity, Deuze (2003, p. 214) stated that the interactive options on the website can be divided into three types: navigational, functional and adaptive interactions. These three categories emphasise the basic interactive approaches of the website, but do not take into account the contribution of the users. Furthermore, Vázquez and López (2019, p. 252) mentioned three parameters of interactivity: the function of the user, the mode of interaction and the mechanism of participation (which includes sharing, discussions and contributions). However, these three main parameters are not sufficiently refined, and overlaps exist within them. For example, role-playing, gamification, simulation, physical immersion and selective interactivity are both mentioned in the function of the user and the modes of interaction. Also, the user-generated content of interactive documentaries is not acknowledged as a part of these parameters. The Chinese researcher Fan (2018, p. 26) classified interactivity into three principal categories based on the technical characteristics of information systems, the processes of communication and user perception. The classification focuses on the functions of the user, but is not explicit about how the user contributes and participates in the projects. In addition, the White Paper on China's 5G Advanced-format and New-concept Video-Interactive Video Technology indicated that there are three types of interactivity: event-based, spatial and temporal interactivity (Liu & Deng, 2020b, p. 7). Based on the above, this section classifies the interactivity of interactive documentaries into four types: selective interactivity, immersive interactivity, social interactivity and generative interactivity.

Selective interactivity is a fundamental feature of interactive documentaries. The user selects and controls the projects with the mouse, the keyboard or other movable devices. Choosing directions and paths, selecting the viewing order and options and clicking on hyperlinks allow the user to explore the expanded content of the project. These projects are non-linearly structured, providing personalised space where the user takes control of how the story is narrated. But while the author gives the user options to select, the control of this interactivity remains in the hands of the author. For instance, the user follows the instructions to choose to move to the next step in the project, or the user accesses relevant information within the limited media resources provided by the author.

Immersive interactivity is based on the support of technology, the content of the project, the navigation of the project and the current surroundings. The user experiences the project through role-playing or reality simulation, in which they feel like part of the story. They can also be immersed in the project through a series of actions, such as user action-text reaction,[30] to explore each episode of the project. Of course, technological tools, such as 360° spatial navigation, are available to the user to enhance realistic perspectives. Here, immersive interactivity is a combination of physical immersion (like VR, AR and real-time location) and topic immersion (like implication,[31] simulation, gamification and immersive environment).

The boundaries of social interactivity are continuing to widen, and currently, it is comprised of the user sharing, commenting, logging in (using personal information) and associating with commercial platforms, such as in the projects that provide information or a link to project-related merchandise. The user can participate in the project by commenting and sharing, such as using Danmaku to comment on or decorate the project.

Generative interactivity is the most crucial feature of interactivity, as well as the one that holds the greatest potential and challenges. As Gaudenzi (2013, p. 26) stated, in the participatory mode of the project, the user becomes an interactor, not a spectator. Thus, the user no longer fills the role of a member of the audience. Instead, the user can contribute to the interactive documentary, and the author gives partial control of the project to the user so that the user and the author can co-create the content of the project, or the user can contribute to the project by uploading multimedia materials of their own experiences or lifestyle.

As previously mentioned, the feature of interactivity is crucial for opening up new possibilities with regard to the production of interactive documentaries. Among the different types of interactivity, social interactivity and generative interactivity give the user a place to contribute to the project. For now, most interactive documentaries are constructed by the author establishing their path in a closed database or by the author mapping a world and its rules that keep the user involved in the project. There are just a few projects in which the user can extend the content of the project or where the author directly creates an open and dynamic scenario of the experience.

Thus, because of the transfer of control from the author to the user, the contribution and participation of the user in the project are changed. The types of interactivity in the selected samples are presented in Table 11. As the table shows, the options of selective interactivity are more conservative and traditional; immersive interactivity emphasises the immersive environments and gamification of projects; while social interactivity and generative interactivity are designed to be more multiplatform and use cross-media integration.

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[30] The user action-text reaction refers to the user taking an action, and the text giving a reaction/response to it.

[31] Implication refers to the potential impact on the user by participating in the project and empathising with the project topic/reality (Vázquez et al., 2017, p. 410).

Table 11

Interactivity in Selected Samples

Title	Selective Interactivity	Immersive Interactivity	Social Interactivity	Generative Interactivity
Global Lives Project	The user selects a theme of the project and order of viewing	Engagement	The user shares a link to the project on Twitter, Facebook, YouTube, Instagram, leaves a comment on the blog, logs in	The user joins in shooting the video, participates in the filming
A Short History of the Highrise	The user selects the path of the story and the order of viewing	Immersive environment	The user shares a link to the project on Twitter, Facebook, Google+, LinkedIn, leaves a comment (after a certain time, they can only view)	The user uploads photographs to the New York Times within a specified period of time
The And	The user is called to action for decisions, chooses the order of playing, selects a point of view to play	Engagement, simulation, gamification	The user shares a link to the project on Twitter, Facebook, Instagram, leaves a comment on Tumblr, link to project products for purchase (card games)	The user shares their story on Tumblr
Do Not Track	The user has control over the story, selects the topic and order of viewing	Implication, simulation, engagement	The user shares a link to the project on Twitter, Faccbook, Google+, leaves a comment on the blog (after a certain time, they can only view), logs in	The user registers to contribute their data. The project collects and records user data while the user is browsing the web
"The Story Behind the Scenes of the Show"	The user selects the option to move on to the following plot and chooses the path of the story	Engagement, user control; user action-text reaction, both web- and mobile-based	The user shares a link to the project on WeChat, Weibo, QQ, leaves a comment below the video, adds to favourites, gives a thumbs-up, gives coins to the uploader, logs in	The user contributes a Danmaku comment

Title	Selective Interactivity	Immersive Interactivity	Social Interactivity	Generative Interactivity
"The Legend Hunters Interactive Season"	The user selects an angle to move on to the following plot and chooses the path of the story	The user participates in role-playing, simulation, gamification, user control, user action-text reaction, mobile-only	The user shares a link to the project on WeChat, Weibo, QQ, leaves a comment below the video, adds to favourites, logs in	The user contributes a Danmaku comment
Motto.io	The user controls the process, making decisions, choosing the path and content for participation	The user feels like a part of the story; user action-text reaction, engagement, mobile-only	The user shares the link to the project on Twitter, Facebook	The user acts as a contributor and a producer, taking photos and recording micro-videos via their smartphone

However, in the currently established and well-known interactive documentaries, the author/producer tends to explore the immersive interactivity and selective interactivity of the project. In this context, this chapter focuses on the social and generative interactivity of the Chinese and Western projects and examines their design approaches and trends, which is the reason why generative interactive documentaries are taken as the representative type of interactive documentaries for this research.

Selective Interactivity

This feature is shown in every project. As with other interactive documentaries, the user can choose different paths of the story and access the chapters they are interested in or view related materials according to their preferences. As Fan (2020, p. 40) pointed out, the selection is the ability of the user to explore information in the project, which supports the user in hunting for hidden interactive buttons on their own to get information or trigger a plot. In the case of *A Short History of the Highrise* (2013), the *Global Lives Project* (2009–present) and *Do Not Track* (2015), the abundance of multimedia resources allows the user to have control over the narrative of the story and enables the user to move on to the next plot by choice. In "*The Story Behind the Scenes of the Show*" (2019), the producer provides various path options, which the user can click on to select certain extended materials or jump directly to the next episode. Furthermore, the user can select the options by responding to the questions posed in *The And* that analyse the user's thoughts on love and relationships.

Generative documentaries are equipped with various personalised paths, storytelling options, perspectives and endings of the project. Thus, the user is free to choose the exact order and approach to participate in the project, but in a closed or limited data resource, which can

make the project gradually become monotonous and tedious. Also, projects receive much attention when published, but tend to be ignored within a few years. As such, the *Global Lives Project* (2009–present) is an ongoing project, and the author continues to add additional resources and topics to update the project. Furthermore, this project calls for user participation and hands-on practice. The user can be the filmmaker or the filmed subject and hold exhibitions of the project in different ways, which leads to a vibrant, pluralistic and global project. Moreover, the selective interactivity of *Motto.io* (2020) is not about how to control the narrative of the story or how to complete the quiz game, but about photographing or recording the user's objects and personal items on cue. This project serves as a space where users can share their things and then give them new meaning. In short, in generative documentaries, selective interactivity is not limited to making choices under limited menu options or closed resources, but tends to co-create and share in the context of the user's content, such as their lives, surroundings and cultures.

Immersive Interactivity

Generative documentaries exhibit a pluralistic presentation of hypertext, multimedia and interactivity features and yet another concept has to be added: immersion, which is the result of the entire combination of all the features. In recent years, immersive interactivity has attracted much attention, especially in the design and application of immersive devices. VR versions of interactive documentaries or 360° spatial navigation are designed to create a sense of immersion. The physical interactivity or physical immersion of the projects is not included in the scope of this discussion due to the unique nature of this feature's production and design (e.g. VR interactivity). The author not only explores the techniques to allow the user to be immersed, but also develops and refines the content and navigation of the project in order to discover new forms of immersive interactivity.

Immersive interactivity differs from other types of interactivity because it arises in the stories of the projects, from their narrative approaches to their multimedia integrations, which create a sense that the user is diving into the represented reality; close and with the possibility of action. For example, *A Short History of the Highrise* (2013) is presented in full-screen viewing mode, with concise and easy-to-use hyperlink buttons, familiar themes and intuitive archive photographs that allow the user to immerse themselves in the building edifices of the project, giving the user a sense of belonging and satisfaction. The users are immersed in projects of this form, which helps them to empathise with the stories. *Motto.io* (2020) creates a sense of immersion through brief and obvious tips, simple and straight operations that the user can undertake, such as photographing the things around them according to the theme. The user can feel the power of photos and text throughout their experience of the project.

"*The Legend Hunters Interactive Season*" (2020), a project based on a mobile device/interface with a strong plot and hanging questions, drives the user to uncover the truth. The user is role-playing as an archaeologist discovering the truth by following clues. For example, the

user selects different options and immerses themself in the archaeological scenes (Figure 14). As Fan (2020, p. 39) pointed out, the project grants the user the ability to change perspectives to experience different identities and viewpoints fully. The project provides intricate and intriguing plots that immerse the user in the joy of exploring the mystery. In addition, the principles of the game entail a high level of user engagement in the different chapters. The role-playing, games or spatial simulations should not be considered as a negation of the informational purpose of the documentary. As such, immersive interactivity is the approach to promote the user's empathy with the reality shown.

Figure 14

Selective Interactivity in "The Legend Hunters Interactive Season" on Youku

Therefore, it can be seen that gamification or simulated reality creates a sense of immersion for the user. The project's user-generated or user co-created content serves to provide a sense of belonging and satisfaction. So, while developing the immersive interactivity of the project, diverse immersion approaches should be considered.

Social Interactivity

Social interactivity acts as a special feature by integrating social networks in generative documentaries. Sharing and commenting are actions available in the conventional media interface, which nevertheless contribute to the expansion of current generative documentaries. In all cases, user engagement includes the ability to share links to the project on social media networks. The user posts comments on the project website or on external social platforms. In the current projects, social interactivity includes sharing, commenting, logging in, personal data

use, questionnaires and interactive quizzes, among others, and these elements of social inter-activity are still in the primary stage of exploration and evolution (Zhang & Cui, 2019, p. 57). As the user demand increases, social interactivity is faced with the challenge of incorporating traditional forms and innovating new ones.

Nowadays, projects provide the links that enable their sharing on social platforms. Due to geographical and copyright restrictions, the social platforms on which Chinese and Western projects can be shared differ greatly. For example, projects in China allow the user to share the project link on WeChat, Weibo, QQ and other social platforms, while projects in the West can be shared on Twitter, Facebook and Instagram.

With regard to the elements of social interactivity, the comment is often neglected. However, it should be considered an important element. At present, almost every project has set up its own comments section or forum, and many have left space on social media platforms for their users to communicate and discuss their projects. For instance, in *Do Not Track* (2015), comments are displayed on each unit so that the user does not have to jump to a new page to read and comment while experiencing the project. In *A Short History of the Highrise* (2013), the comment button is visible on the home page of the project, which also shows the total number of comments. When the user clicks on this button, the project will jump to a separate discussion page of the project. Likewise, in *The And*, the discussion section or forum of the project is set up on Tumblr, an independent social networking website.

However, the comments in most of the projects, whether on the separate external forum pages or on the projects' internal comments section pages, were posted in the respective year of each project's release, with no comments having been posted recently. For instance, the latest comment on the forum of *Bear 71* was made in November 2011. In *The And*, the most recent question on the forum was posted in May 2017. Also, comments and images in the forum can only be viewed but not discussed, and the forum only provides a place for the user to post questions. , In *A Short History of the Highrise* (2013), it is clearly stated that the comments are closed (Figure 15), meaning that new users can only view comments in the project, but cannot reply to them or post new ones. Similarly, in *Do Not Track* (2015), each unit page of the project only shows the total number and content of comments; users are not able to respond to them or post new comments (Figure 16). Also, new users are unable to give a thumbs up to the comments they're interested in. The only place where the user can comment and communicate is through the project's comments section on the social media platform. This seems to be a common and accepted phenomenon.
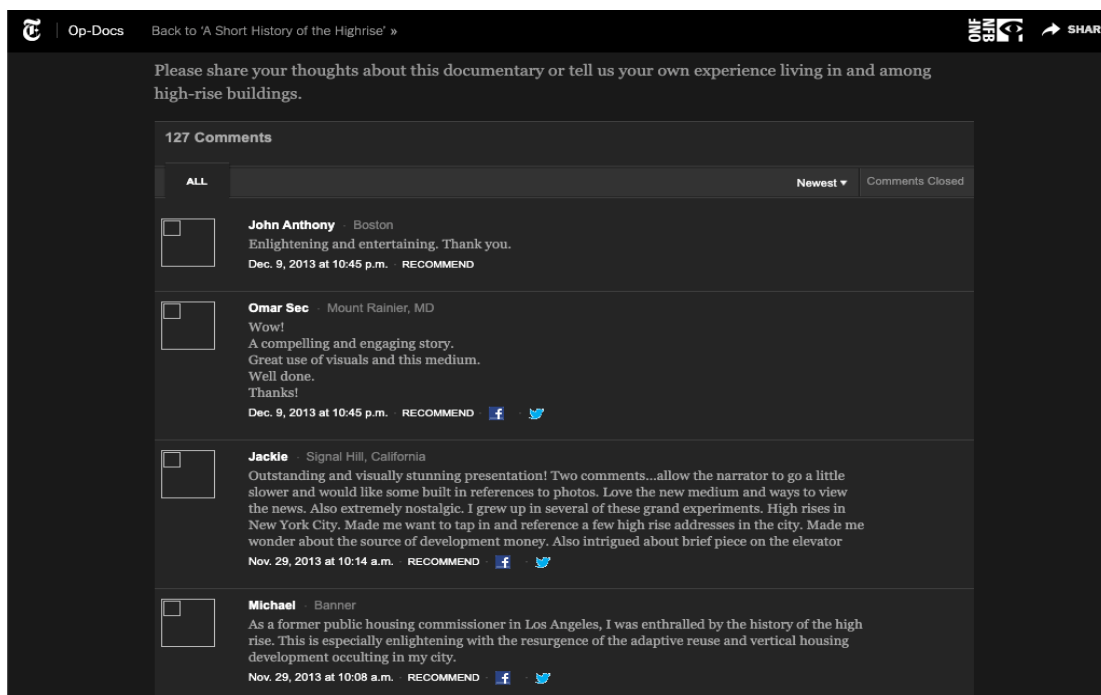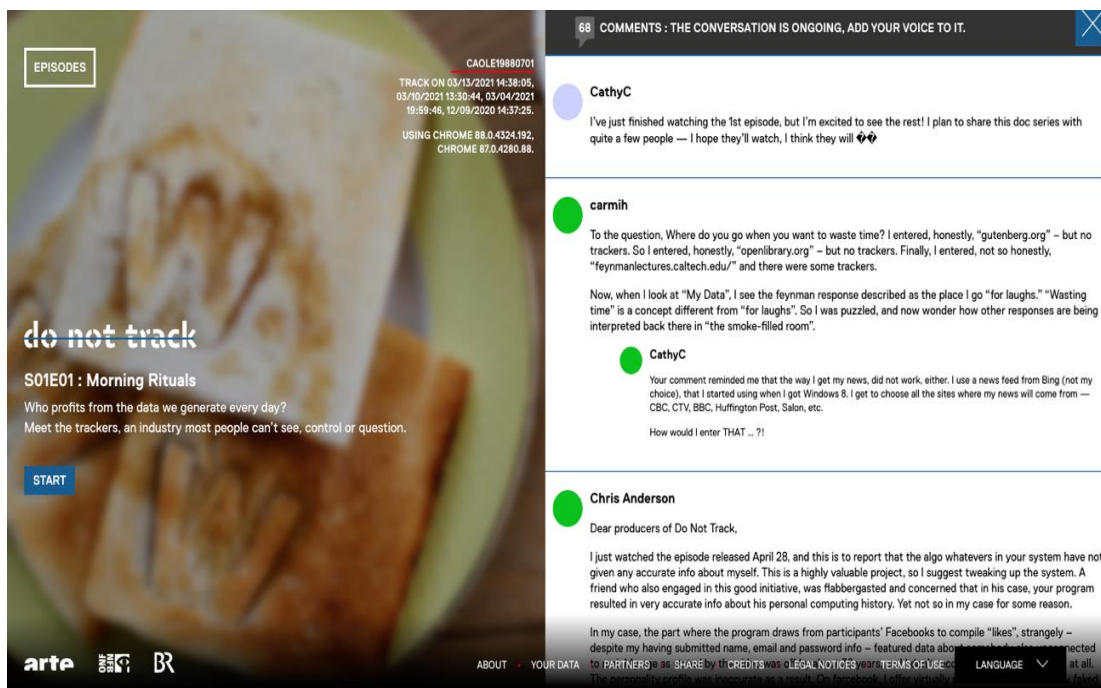
Figure 15

The Comment Forum of A Short History of the Highrise

Figure 16

The Comments Section in Do Not Track

Motto.io (2020) is a project created based on a mobile interface and contains only a link that can be shared on social platforms. Furthermore, there is no comments section in the project.

Thus, it can be seen that comments, which are a kind of social interactivity, are highly ineffi-cient and barely interactive. In all the projects examined, comments were scarce and the periods open for commenting were very short (comments were posted only in the year the project was released), and the interactivity between the users in the comments of the project was extremely weak.

In the case of generative documentaries in China, there are distinct differences in terms of comments due to the different interfaces and platforms of the projects. "*The Legend Hunters Interactive Season*" (2020) was released on Youku, a well-known domestic online video plat-form in China, which offers both a traditional version and an interactive version of the project; the latter is only available on a mobile interface/device. "*The Story Behind the Scenes of the Show*" (2019) is shown on Bilibili, where the user can view and post a Danmaku comment on the project. On this platform, the user is able to participate in the project, both via their mobile device and computer interface. Besides, as described in the third chapter, the Danmaku com-ment system is very fashionable in China and is accepted by all Chinese video platforms (Lili et al., 2016, p. 3). In the two Chinese projects analysed, Danmaku comments are set up where the user is able to view and post them anonymously while experiencing the projects. For ex-ample, in "*The Legend Hunters Interactive Season*" (2020), Danmaku comments are displayed from right to left while the user is experiencing the project. Of course, the user has the option to turn off Danmaku comments or to select the display area of Danmaku comments (quarter screen, half screen, etc.) (Figure 17).

Figure 17

The Danmaku Comments in "The Legend Hunters Interactive Season"

Although these projects were released in 2019 and 2020, the Danmaku comments are still ongoing, which keeps the projects vibrant and lively. Also, these comments are informative and entertaining, enhancing the sense of immersion and companionship within the project. Furthermore, a conventional comments section is available under the videos, where the user can leave a comment or interact with other users at any time.

Thus, as we can see, Chinese projects may bring fresh approaches and perspectives to the production of generative documentaries. First, the Chinese projects place a strong emphasis on integration with mobile devices, which extends the projects to a more diverse platform that is no longer limited to the web-based version of the project. Second they highlight the importance of comments in the context of social interactivity, which has the potential to tighten and deepen both user-project and user-user interactions. Third, most Chinese projects are published on mainstream video platforms, rather than existing as independent web documentaries, thus allowing more potential users to explore the projects. In addition, since these projects are presented on these platforms, they also contain each platform's elements of social interactivity, such as options to repost, like, favourite, follow, perform coin tosses and more. Fourth, all of these projects contain both regular comments and Danmaku comments; that is, comments are accessible at all times, which keeps the projects active and available to attract new users to interact with these projects.

The social interactivity of the generative documentary also includes the user logging in and sharing their data or information on the project. The projects take some information from the profiles filled out by the user as a way to create a more personal experience for them, for example, assigning the user's name to the role in the project when the user is viewing it. In *Do Not Track* (2015), the user can voluntarily participate in an activity titled *Tracking Your Data* (includes browsing history, geolocation and social network activities), and the project ensures the security of this personal information. Of course, some projects allow anonymous social interactivity. In *The And*, the user is able to post questions anonymously in the project forum. Also, in "*The Legend Hunters Interactive Season*" (2020) and "*The Story Behind the Scenes of the Show*" (2019), the Danmaku comments posted by the user are also anonymous.

Finally, it is necessary to point out the commercial potential of social interactivity. *The And* (2014) builds a bridge between the user, the project and the associated products by placing a link to purchase the related products on the home page of the project. After viewing the project, some users are willing to purchase some related products, which shows their commitment to implementing the project's ideas and opinions in their lives. Also, the projects that create their own online shopping site or collaborate with mass e-commerce platforms can benefit from additional financial support, which contributes to the sustainability of the projects. In some cases, both regular and interactive versions of the project are released, such as "*The Legend Hunters Interactive Season*" (2020); the interactive version of the project requires the users to become registered members of the video platform in order to engage in the experience. Such video platforms provide technical support for the projects, while the projects contribute to the

revenue of the platforms. Furthermore, the projects are displayed on well-known video platforms that involve members of the platform in a way that can open up a new door for the production of generative documentaries. In addition, the projects can continue to collaborate intensively with e-commerce platforms and mainstream video platforms. Such platforms play an essential role in designing and rebuilding projects, and since the project is characterised as a digital and online product, they may attract a more diverse group of audiences.

In summary, several elements of social interactivity have been found in the projects, such as questionnaires and quiz games. However, the existing social interactivity in the current projects generally does not get a lot of attention. Moreover, the development of social interactivity is still in its early stages.

First, in the projects examined, the total number of comments is low, and the comments are inactive, both in the internal comments section and the independent external forums of the projects.

Second, most projects in Western countries have granted the user a limited period of time to post comments, and currently, the comments sections of these projects are closed, leading to the interactions between the users being limited.

Third, most of these projects are independent web documentaries that do not work with social media platforms or e-commerce platforms, with the result that no new users can be acquired through those avenues.

Fourth, currently, the projects provide both anonymous and non-anonymous approaches for the user to experience the project. Other steps could be tested to provide the user with different levels of interactivity (more detailed), which would involve anonymous experiences for certain portions of the content.

Finally, in the Chinese projects, the social interactivity is mainly shown by the user participation in Danmaku comments, with these projects having the tendency of being released on online video platforms in order to acquire more users of the platforms.

Generative Interactivity

In the interactivity of the project, generative interactivity sufficiently initiates the user to actively participate in the production or the design of the project. The most prominent contribution of the user in generative documentaries is user-generated content, which is one area that has not yet been studied in depth. *A Short History of the Highrise* (2013) had particularly high levels of generative interactivity, as it set up a gallery unit to share photographs of high-rises taken by *the New York Times* readers from all over the world (Figure 18). These photographs enabled the project to become more international, while the readers gained a sense of accomplishment and satisfaction from this experience. And of course, other users also empathised with the stylised photographs they were viewing.

Figure 18

Generative Interactivity in A Short History of the Highrise
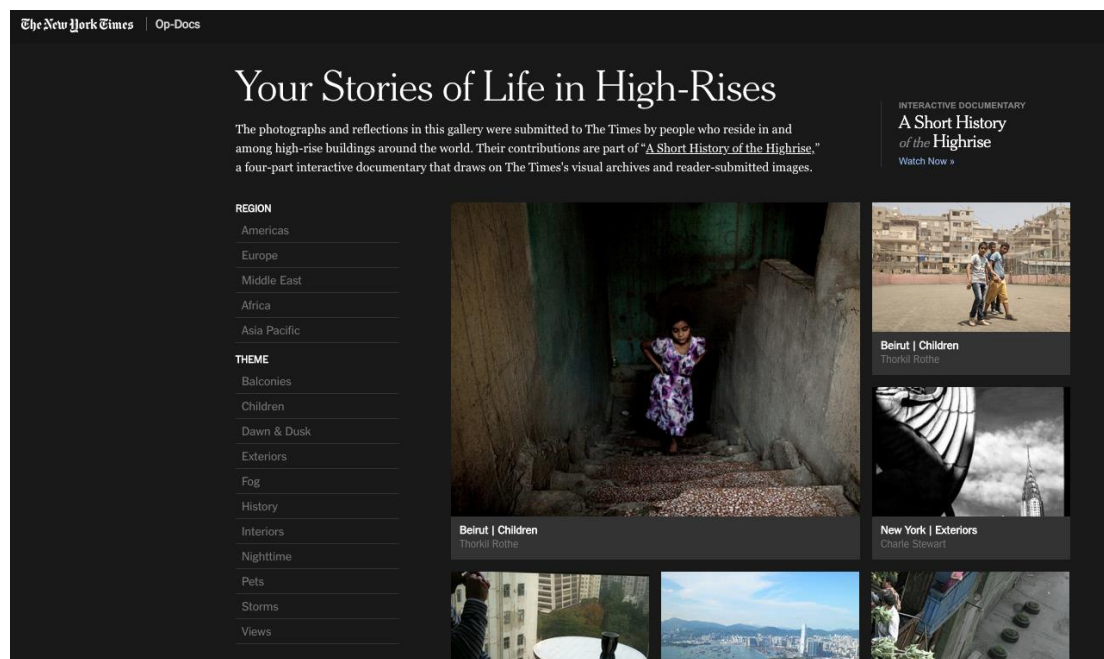
This aspect is a part of the project and provided a space where the user could participate in generating a certain part of the project. Although the project activity in which the user uploaded photographs has ended, users can still view the photographs that were previously uploaded.

In its basic sense, generative interactivity describes the contribution of users to the content of the project, for example, by providing audio-visual materials or personal stories. In the *Global Lives Project* (2009–present), the user can register to be a project producer on the project home page and is required to provide certain personal information so that the producer can get a clear picture of their profession and expertise. Of course, only a few users participated and contributed to the project on the basis of the strict selection carried out by the project producer.

Then, the project production includes the user's contribution to the content of the project, for example, the user posts videos, pictures and other data liberally, as on social media platforms. However, if this approach can be considered acceptable, the quality of the project may be challenged, and the initial intent of the producer might be deviated from. For this reason, it is critical to balance the relationship between the user, the project and the author. *Motto.io* (2020) is a project based on a mobile interface/device that allows the user to take pictures or record micro-videos and upload them to the project's database (Figure 19). All of these uploaded videos are subjected to a regular and manual curation. Some are permanently added to the project's image gallery, while others are only visible to the author. The author and producer designed and built this project to last over time. As time passes, a kind of aggregated documentary will continue to emerge, which will finally inform us about the times we are living in. As

a result, the user may see their photos or videos again, but with new texts or meanings, as it is a new exploration and experimentation by the producer of the project. Here, in both the *Global Lives Project* (2009–present) and *Motto.io* (2020), the projects in which the user is involved in generating the project content take a long time; the longer the users wait for the projects to generate the final product, the less motivated they are to participate continuously.

Figure 19

Generative interactivity in Motto.io
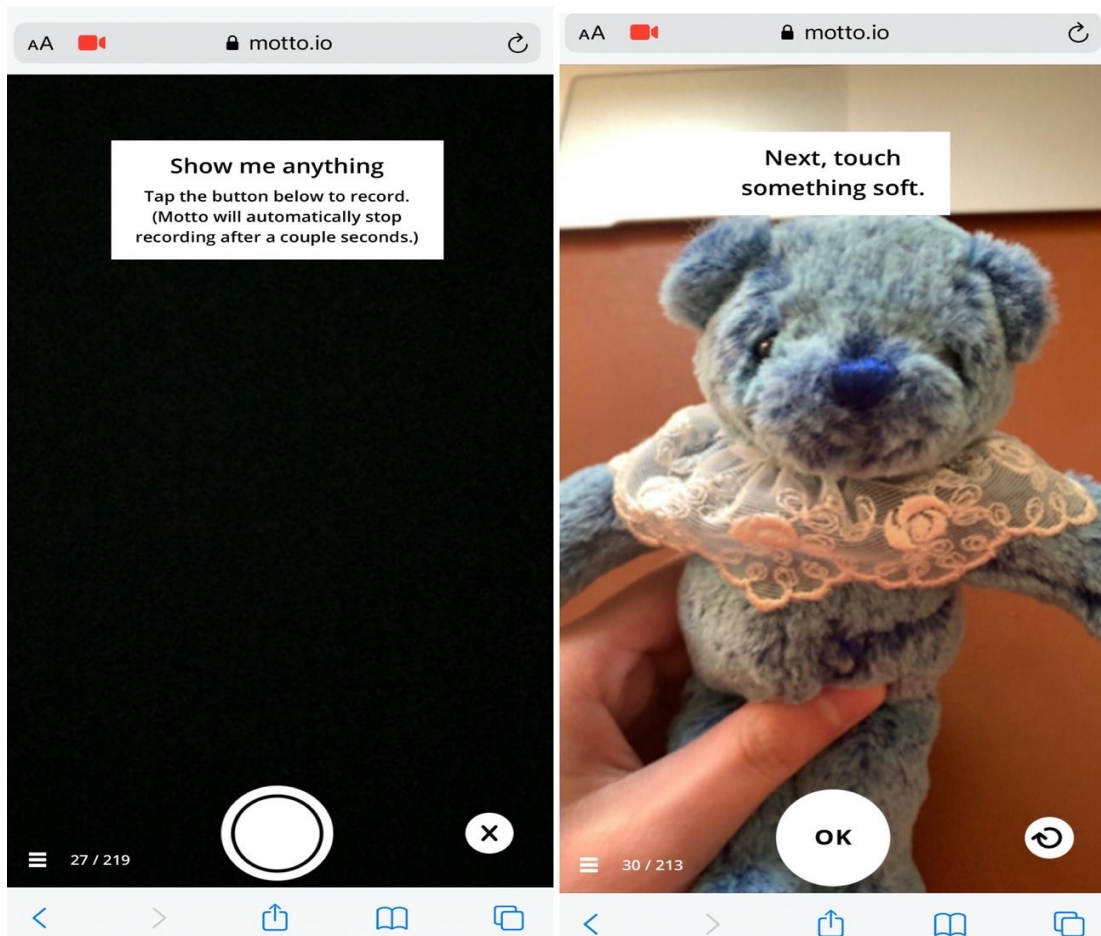
Generative interactivity relates closely to the main content of the projects. In *Do Not Track* (2015), the user logs in to their account, and the project then shows, in a tangible way, how personal data is collected while the user browses the web and used. Also, the project states that it only uses user information within the confines of *Do Not Track* (2015) (Figure 20). It is obvious that, according to the content of the project, the user's personal data also contributes to the project.

The And (2014) is a project that focuses on love and relationships, and the user is able to share their love stories to the producer of the project through its forum, in which the users cannot read the stories shared by other users. Therefore, in the production of the project, the producer is still entitled to choose the content that the user contributes to the project.

Figure 20

Using personal data in Do Not Track
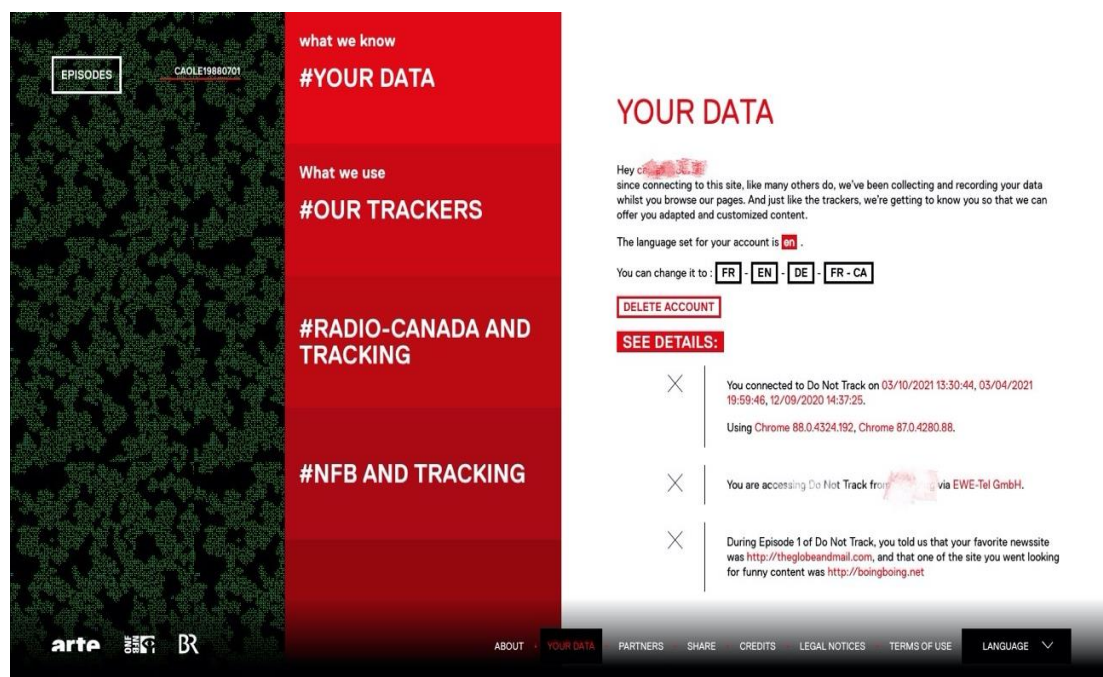
Moreover, the different interfaces and platforms provide a distinctive presentation/display of generative interactivity. As in the case of "*The Legend Hunters Interactive Season*" (2020) and "*The Story Behind the Scenes of the Show*" (2019), the projects employ the Danmaku comment system, which enables the user to contribute to the content of the projects anonymously, such as by decorating the display screen with their comments. As the number of views and Danmaku comments on the project increased, the Danmaku comment system itself became a part of the project. The contribution of Danmaku is to make the project more accessible and unpredictable, with each user being able to contribute something to the content of the project. Also, the companionship created through Danmaku comments should not be overlooked.

In most cases, the generative interactivity of the projects emphasises the different levels of user contributions to the content of the projects and is capable of giving them a sense of belonging, identity and accomplishment. In addition, generative interactivity also places an emphasis on the interactions between the users.

In short, the generative interactivity of generative documentaries is currently in the early stage of its practice and innovation. First, in terms of user-generated content, the projects take a long time to sort and aggregate materials such as photos and videos contributed by users, which inevitably reduces the freshness of the project topics and the users' involvement.

Second, the user-generated content of the projects takes on different albeit limited forms; as we have seen, the user contributes to the project mainly by uploading photos and videos; text, sound and other forms are often neglected.

Third, the organisation and aggregation of content contributed by the user rely on the project's own software or platform system, which can be a challenge for the implementation and production of the project.

Fourth, most of the projects that involve the user in the generation of its content are one-way actions (user-to-project), and the user is not able to obtain timely feedback after uploading the material.

Finally, in the current projects, different levels of user contributions to the content of the projects, for example, user participation in the projects' activities and in generating certain parts of the projects, also emerged. The higher the level of user participation, the greater the urgency to safeguard their privacy. So, it is equally important to consider how to secure the user's personal data and information when they contribute to the content of the project.

Approaches to Social and Generative Interactivity

Generative documentaries, as a representative type of interactive documentaries, are currently in a stage of diversification. They incorporate features from other interactive formats such as geolocation, 360° spatial navigation and virtual games. These changes and new technologies make it challenging to properly understand the generative documentary as a form of documentary. It is the emergence of generative documentaries that blurs the boundaries of documentaries, following the convergence of new technologies and media. This integration or evolution does not end there, however, as the generative documentary has extended its territory from web-based formats to multiplatform and mobile formats. As a result, generative documentaries are classified as interactive non-fiction and user-generated content, which is a more expansive notion covering multiple formats of presentation that are reality-based and, from an analytical standpoint, also developed in the media. As a result, new avenues for working with new technologies and different platforms as mediators for the production of projects are being further explored and practised.

Social interactivity and generative interactivity are two of the most remarkable features of the generative interactive documentary, which breaks the linear narrative of storytelling and enables the user to provide in-depth contributions to the content. The navigation and interactivity of projects underline and stimulate the potential role of the user. Within the evolving context of generative documentaries in English-speaking countries, the form of such projects is shifting and transforming into an immersive kind of documentary within a concept and virtuality continuum, which can be denominated as "mixed reality"[32] (Gifreu-Castells, 2019, p. 53). Innovations in social and generative interactivity may also contribute to the immersion of

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[32] The "virtuality continuum" refers to various classes of objects that can be seen in every given display condition. Thus, "mixed reality" environments display both real world and virtual world objects simultaneously within a single display, i.e. somewhere between the extremes of virtuality (Milgram & Kishino, 1994, p. 1324).

the user in the project without external devices. Also, these two kinds of interactivity are in a position to make the author-project-user relationship more dynamic and hybrid. They can be further reformed in a continuous manner, contributing to the integration and internationality of interactive documentaries. Furthermore, in China, generative documentaries are moving directly towards a form that incorporates projects with mobile devices and their social networks. In other words, working on the development of social and generative interactivity will help to immerse the users in the project.

A New Approach to Conventional Social Interactivity

In the case of social interactivity, the user has the capability to share personal data according to their preferences and experiences personalised projects with their contributions. Social interactivity includes sharing, commenting, answering questionnaires, playing quiz games and using personal data. Of course, these are the basic and traditional indicators of social interactivity, and fresh approaches are required to allow social interactivity to be more diverse and active. For instance, most questionnaires are one-way operations/communications, and the interaction ends when the user submits their survey. This interactivity has no follow-up feedback or suggestions, its duration is short, and the user's sense of interest is weak. Therefore, the projects can provide real-time data on the users involved in these interactions, such as showing the number of participants, their gender, language, country and other information, or providing feedback following the completion of steps to create a sense of belonging and anticipation.

In *The And* (2014), the user participates in two sets of quizzes: one completed with a friend and the other completed independently by the user. The latter contains four questions and two options for each question (Figure 21). Here, it would be more attractive and interesting if the user gets timely feedback based on their answers or is able to view the number of users with different results, which would also present an informative and entertaining feature of the project.

Also, in the production of the projects, the author grants more control to the user to make the use of their data more flexible and versatile, such as their choice to be anonymous or not. In the *Do Not Track* (2015) project, the user gets to choose whether to be tracked or not, making social interactivity more dynamic and creative.

In short, firstly, projects can deal with the personal data of the user in a more refined/advanced manner, such as by providing more detailed options. In this way, the user explores the projects based on the protection of their personal data, and their active participation drives the development of social interactivity.

Secondly, projects can attract and retain the user's attention by providing timely feedback that meets their need to access information in real-time. Two-way communication maintains their interest in the project, which is both a challenge as well as an opportunity.

Thirdly, these traditional indicators of social interactivity make it possible to aggregate user data when exploring projects, and this data leads to a more personalised project.

Lastly, today's social interactivity requires innovative approaches, such as optimising the user data settings, which offer more options to the user, or regularly updating the content of quizzes and questionnaires so that the user is willing to access and share the project frequently. For this reason, the control that the user currently enjoys in social interactivity is now partially handed back to the author, and a more detailed and specific framework and project content need to be designed and presented.

Figure 21
The Quiz Section in The And
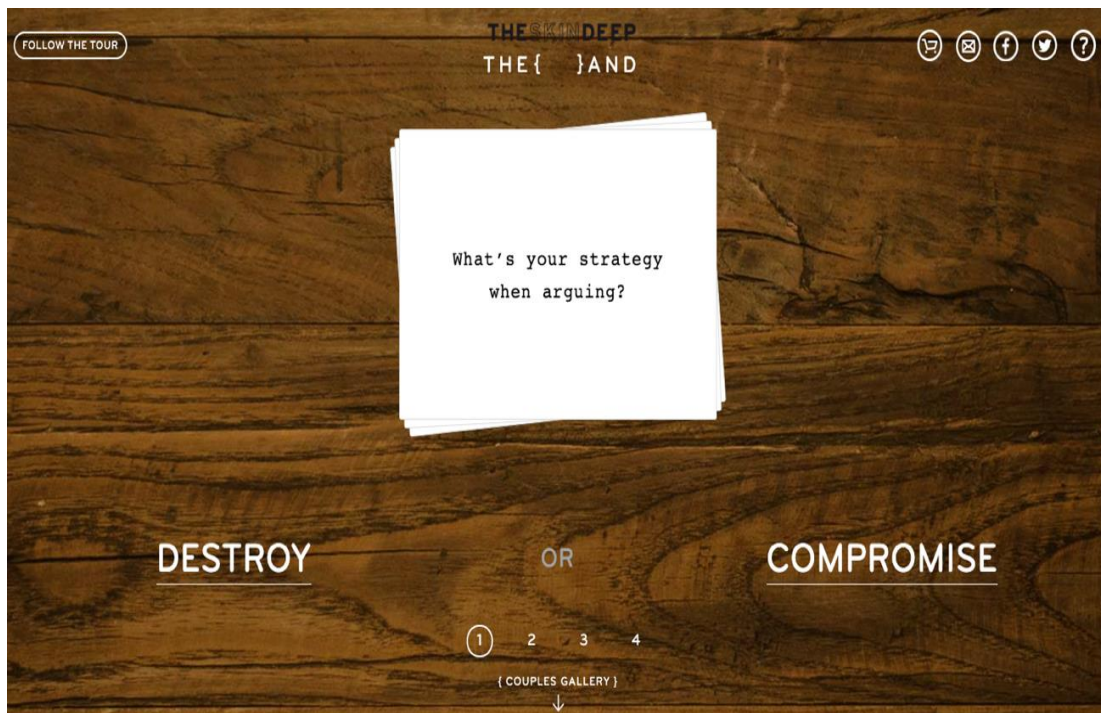
Comments: The Fundamental Element of Social Interactivity

As mentioned in the previous section, commenting is the most fundamental indicator of social interactivity, and it tends to be overlooked. Among the discussed projects, most comments, including those in separate external forums and internal comments sections, are closed or inactive. Although each project has its own account on different social media platforms such as Facebook, few of its users engage in interacting through comments. In the *Global Lives Project* (2009–present) (Figure 22), the comment interactions between the user and the project, as well as between the users, were extremely scarce in the comments section of the project's Facebook page. These closed or inactive comments struggle to maintain the interest and attention of the user, while the features and advantages of comment interaction are lost.

Figure 22

The Facebook Home Page of the Global Lives Project
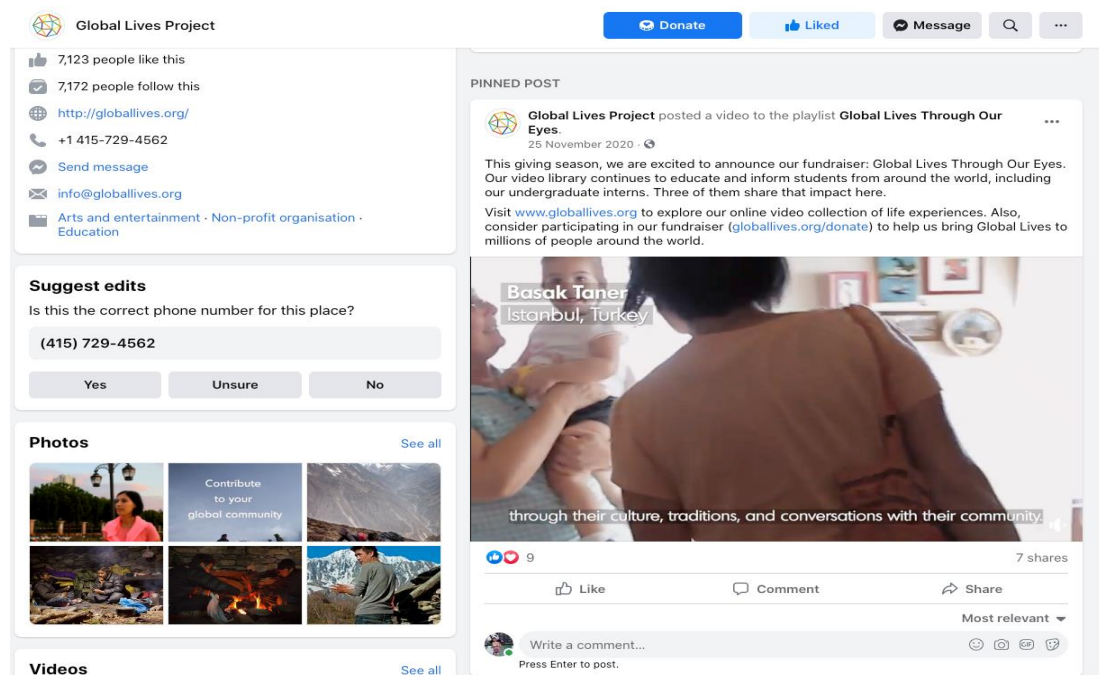
For this reason, a comment button should be added to the project's home menu or a comments section can be placed on each unit page so that the user no longer has to jump to an external forum to post a comment; instead, they can share their stories in an immersive environment. Also, the comments section of the project should be kept open, enabling the user to share their experiences in the form of images, texts, sounds and emojis for a more active and updated comments section. In addition, projects should enable the user to repost the content of their internal comments sections on different online platforms such as social media platforms, where more users can contribute their ideas to the projects. These active comments shared on different platforms can drive the user to explore the projects, and the informative and entertaining features of the project can be displayed.

Additionally, in Chinese projects, the Danmaku comment system serves as a place of communication not only between the user and the project, but also between the users. The Danmaku comment system is also available as a plug-in version（software extension) that can be installed on YouTube, allowing the user to chat with other users via Danmaku while watching videos. Furthermore, the user is able to set Danmaku parameters according to their preferences (Figure 23). For instance, all videos of the *Global Lives Project* (2009–present) are shown on YouTube. The YouTube logo and its associated feature icons are displayed on each video screen of the project (Figure 24). Therefore, by introducing or employing the Danmaku system to the project, the user gets more options for a unique viewing experience, which favours comment interactions between users. Moreover, this project contains a blog section, which is limited to only

submitting comments and does not display the comments of other users. Thus, highlighting and opening an interactive space to discuss this project is essential.

Figure 23

The Danmaku Extension/Plug-In in the Global Lives Project on YouTube
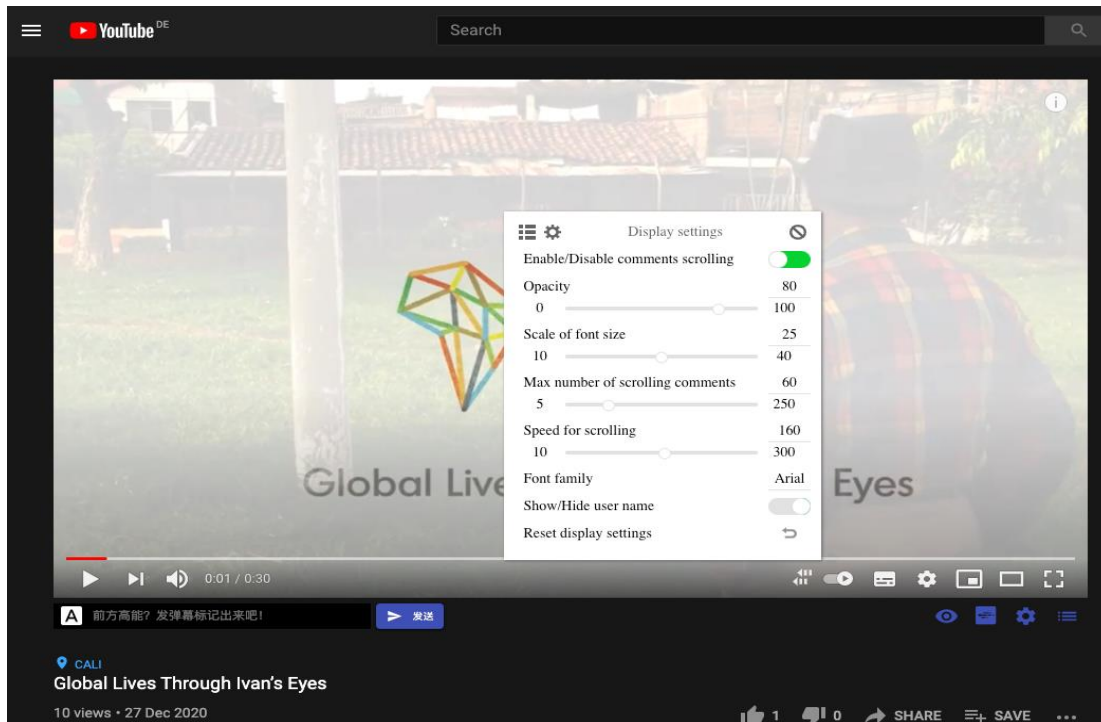
Figure 24

The Home Page of the Global Lives Project

Since Chinese and Western projects are presented on different platforms, the independent web-based projects can consider creating a space where the users interact with each other in real-time, enabling them to contribute their ideas to the project while also opening up additional options for user interaction. Creating a dynamic space for comment interactions makes the project social, entertaining and informative. Interactions in the comments give the project a certain direction and impetus, rather than simply leaving the comments as part of the project's display.

Collaboration and Consolidation of Multiple Platforms

Generative documentaries are considered to be complex and avant-garde. The Internet is the quintessential medium of their distribution, and web-based generative documentaries are the most widespread type of presentation. In recent years, this type has not been free of challenges, but by its character, holds an ability to incorporate new forms and technologies. As Bolter and Engberg (2016, p. 156) noted, despite the situation of being challenged by new technologies, these projects are characterised by the integration of different media so that they are able to adapt to new forms of media in the future, rather than being replaced by new forms.

Within interactive documentaries, several projects belong to the field of generative documentaries, and some well-designed and executed transmedia projects, such as *A Short History of the Highrise* (2013), *Do Not Track* (2015) and *The And* (2014), can also be found. These projects partnered with other platforms; for example, *A Short History of the Highrise* (2013) collaborated with *the New York Times*, enabling its readers to become potential new users. As this example demonstrates, users switching between different platforms get a richer experience of a specific topic. Most of these widely spread Western projects are published and distributed based on professional platforms such as Arte.tv, NFB, France 24 and Documentary Organization of Canada (DOC), Toronto Chapter. These professional platforms are multilingual and include a section on interactive documentary projects. Similarly, institutions such as the Massachusetts Institute of Technology (MIT) in Boston host a web portal. It introduces the development of some of their interactive media projects, and thus, interactive documentaries as well. Links to those projects can be found on the MIT Open Documentary Lab web page.[33] In addition, *A Short History of the Highrise* (2013) found its place in online media, such as the multimedia/online reporting of *the New York Times*. It would also be fascinating to explore its dynamic evolution within journalism and entertainment, as well as its innovative reformation of the web interface. Gifreu-Castells (2017, p. 8) described this as transmedia documentaries having multiplatform support and hybridity.

And yet, both in China and the West, the production and distribution of generative documentaries projects are trending towards collaboration and integration between multiple media and platforms. Here, the collaboration and consolidation of multiple platforms of generative

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[33] https://docubase.mit.edu/ (Accessed: 14 June 2021)

documentaries can be explored from three perspectives: the integration of the projects with social and online video platforms, the combination of the mobile interface and traditional web interfaces (mobile devices and computers) and the cooperation of project products with commercial platforms.

The Integration of the Project with Social and Online Video Platforms. Interactivity contributes towards a substantive evolution of projects into personalisation, which complements the narrative with user-generated content and user engagement, whereas social media facilitates the user's contribution to the project. Projects in China and the West are currently testing collaboration with online video and social platforms, such as the *Global Lives Project* (2009–present)*,* "*The Legend Hunters Interactive Season*" (2020) and "*Wuhan: My Epidemic Diary*" (2020). The potential advantages of these, and the initial integration of the existing resources of platforms are highlighted in the following discussion.

Connecting the content of the projects with resources on multiple platforms creates a more comprehensive and informative view of the project and involves a wider range of platform users. However, the integration of these resources is a challenge in order to maintain the user's attention and the ease of project operations. Moreover, most Western generative documentaries are displayed in an independent web format, which shows limited integration with social platforms like Facebook and mass online video platforms like YouTube.

For example, the *Global Lives Project* (2009–present) has partnered with Facebook and YouTube, but there is still a large gap between these three that has not been effectively integrated. While the project is ongoing and presented on its independent web page, it has not been updated with new episodes on its web page since 2009. However, on the collaborative video platform YouTube, the number of productions that have been filmed by the project has increased to 14. In addition, the latest updated video is a short clip of "*Global Life Through Ivan's Eyes*", uploaded on December 2020, which has been viewed only 11 times as of February 2021. Also, comments on social platforms such as Facebook are extremely inactive in terms of user interactivity. Although the *Global Lives Project* (2009–present) combines video platforms and social media platforms like YouTube, Facebook and Flickr, the integration between them is still limited. In addition, on the project's independent web page, there is no space for its users to discuss the project, which limits the interactivity of the project across multiple platforms.

In the Chinese projects, the producers are also attempting to get the projects to work with social platforms, video platforms and video sharing platforms. For instance, "*The Story Behind the Scenes of the Show*" (2019) (Figure 25) is a project created and presented on the Bilibili video sharing platform. The platform members are the potential users that can experience the project. There are also projects that collaborate with mass video platforms, such as "*The Legend Hunters Interactive Season*" (2020). The traditional version and the interactive version of the project are available, allowing the member to choose how to view the project according to their interests.

Figure 25

"The Story Behind the Scenes of the Show" is Presented on the Bilibili Video Sharing Platform

Therefore, in general, social platforms and online video platforms are media resources of the project that should not be neglected; the integration of multiple platforms with projects to attract user attention is starting to be taken seriously.

The Combination of Mobile and Traditional Web Interfaces. An interface is a place in which the user connects to the content of the project, generally through the screen. As Manovich (2002, p. 67) discussed, the content and interface of the project integrate into a single, inseparable form. The interface plays a role as a transitional context between the users, projects and technological devices (Vázquez & Gifreu-Castells, 2019, p. 121). It is a window that contributes to the continuity of the reality presented between users and stories. It coordinates interactions by providing a navigation channel for content. Usually, the projects in new forms of media establish one central characteristic to draw attention and build their stories.

A fundamental component of generative documentaries is the interface, as it mediates between authors and users and also acts as a bridge between different media resources. Designs for project interfaces usually make use of the whole screen in order to create a more intuitive and immersive experience. As a rule, maps or timelines are adopted to display the user's current location, or to indicate relationships between different chapters of content. It is easy to find that web-based projects are more well-established and elaborate, where the author presents a linear story, at the beginning of which, users can choose their viewing order. Based on the designing

relationship between the authors and the projects, the interactivity adopted by the projects has typically been limited. As such, several kinds of technologies like 360° navigation or real-time location have been adopted into the projects. From the projects analysed, it was found that the author of the project generally has a medium-high level of control, so they usually limit user actions. Also, in order to accommodate the integration of the user into the informative product, the project presents a usable and intuitive interface and diverse design that harbours a rich, entertaining and distinctive experience.

Thus, the combination of mobile and web interfaces creates a more diversified and flexible approach to participation. In the case of current projects, it can be observed that they are beginning to be produced in the form of mobile interfaces, which provides the author with more options to design the interactive content of the project. In addition, the presentation of the user's experience of the world is made more convenient through mobile devices. With the easier operation of the mobile interface, the user contributes material to the content of the project through intuitive navigation, making the media materials of the project more informative and abundant. The mobile interface drives the presentation of the projects to be more concise so that only the basic elements, such as units, chapters, languages and instructions, are generally displayed. The projects on the mobile interface emphasise user-generated content, so a clear chapter structure, brief instructions and an easy-to-understand process make it practical and efficient for the users to contribute content. As a result, the mobile interface of the project accentuates its ease of use and its intuitiveness. Examples such as "*The Legend Hunters Interactive Season*" (2020) and *Motto.io* (2020) stand out since they place the user in the time and space of the project and clear instructions are given, which also grants the user more options to interact and be immersed. Instead of sitting in front of the computer and paying full attention to the project, with a mobile device, the user is able to participate in the project anytime, anywhere, which enables them to manage their fragmented time perfectly. It is like browsing information on social media platforms, where the user accesses the mobile interface and surfs through the project. Also, as with web-based projects that contain extensive resources, the user accesses the essential information while viewing mobile-based projects.

In short, generative documentary projects continue to be combined with mobile interfaces. As such, the project is an independent mobile application designed by the producer, such as 我们的节日若木纽 "*Our Festival Ruomuniu*" (2016); the project is built on the web browser of a mobile device, such as *Motto.io* (2020); the project is created based on the interactive video production centres of video platforms, such as "*The Story Behind the Scenes of the Show*" (2019); and the project depends on interactive video platforms, such as "*The Legend Hunters Interactive Season*" (2020). In any case, generative documentary projects have initiated in-depth work with the mobile interface. Projects with a mobile interface have a simpler screen design, and the user contributes to some parts of the project.

Collaboration with Commercial Platforms. As mentioned previously, appropriate funding strategies and business models are being explored by the projects. Furthermore, two challenges present themselves due to the current projects being financed and produced by public institutions (e.g. NFB) or public television channels and media stakeholders (Braida, 2013, p. 94): the funding is often insufficient, and these institutions often establish specific rules that the projects need to follow. The NFB and Arte.tv are exceptional because of their interest in documentaries and long-term investment in innovation and culture. For example, *Motto.io* (2020), *Do Not Track* (2015) and *A Short History of the Highrise* (2013) have received funding from them. Of course, some other options have emerged, for example, the so-called "Crowdfunding". Ordanini et al. (2011, p. 444) described it as the group efforts by individuals who network and pool their funds online to invest in projects initiated by others. This is a certain approach to raise funds, as the current production landscape of generative documentaries still relies on public television or the few production companies that focus on network and interactive products. However, generative documentaries are technically complicated and expensive projects because they require multidisciplinary contributions, and their production demands special skills and expertise. High investment and low returns put the future of generative documentaries at risk.

For this reason, the producer looks for and considers collaboration between project products and e-commerce platforms to develop a multi-channel approach to fundraising. In *The And* (2014), with the relationship cards purchased from the project's *The Skin Deep Shop* website, the user can explore the topics of the project offline with friends or family (Figure 26). The *Global Lives Project* (2009–present) has also placed a link on its home page to purchase the project book titled *Unheard Stories. Building Empathy through the Global Lives Project* on Amazon. Although these projects are beginning to focus on cooperation with e-commerce platforms, the products don't have a high volume of purchases, which might be linked to the type of items offered being too homogenous and traditional. Consequently, the types of products can be pluralised, and their practicality or cultural value emphasised. The *Global Lives Project* (2009–present) builds immersive video installations and hosts film screenings in several countries; these can be considered to provide more opportunities for the project to offer other types of merchandise, not just related books, video collections or bookmarks, which will improve the impact of the project and incorporate the content of the project into the users' daily lives. Similarly, in *A Short History of the Highrise* (2013), an activity that enables the user to vote for the favourite building in the project is included, and the elements of the high-rise in the project can also be customised or designed in its products. Moreover, these products of the project are sold on its standalone shopping platform/webpage or offered in the official flagship store on mass online e-commerce platforms that ensure the collaboration of the project with e-commerce platforms. Following that, the project's related products also complement its content, which adds to the cultural and commercial value of the project. Similarly, the rich content generated by users presented a new commercial potential for the project.

Figure 26

Online Shopping Platform for Products of The And
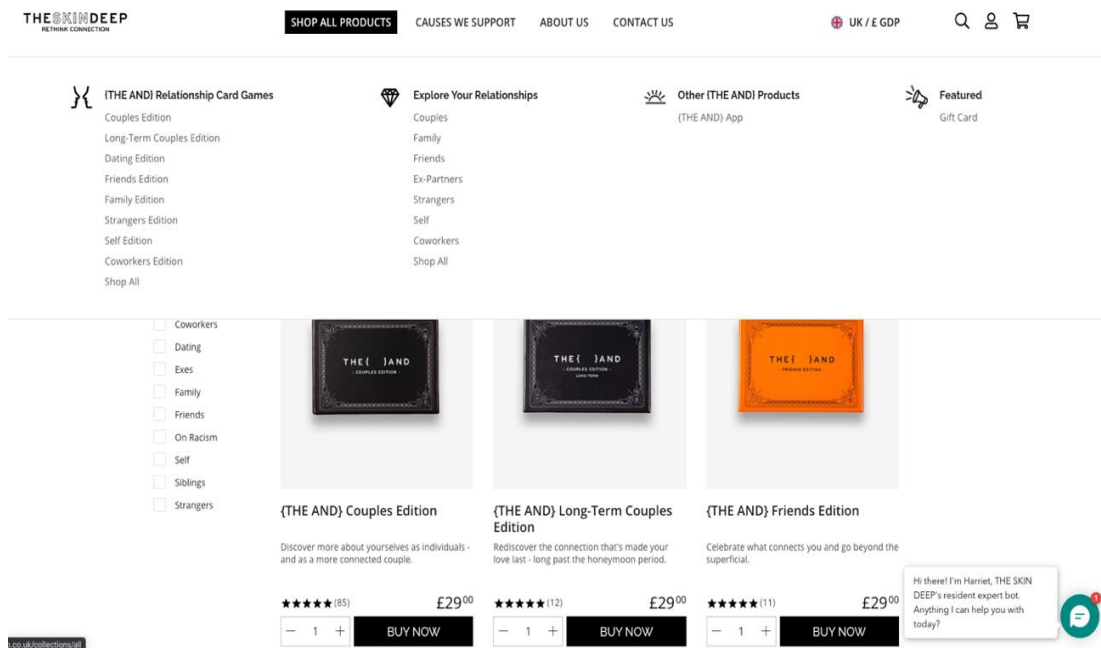
In addition, Vázquez and Gifreu-Castells (2019) provided a broad database of interactive documentary production. Within the 125 interactive documentaries they analysed, projects from France, the United States and Canada are highlighted, alongside their prominent international co-productions (Vázquez & Gifreu-Castells, 2019, p. 116). Therefore, it is easy to see that there are already many generative projects co-produced internationally, such as *Do Not Track* (2015) and *A Short History of the Highrise* (2013). Among these, the composition of project funding is more dynamic, with a tendency towards combining projects with commercial platforms.

Finally, the integration of projects with multiple platforms has become a general trend. As the experience of web-based projects demonstrates, generative documentaries have moved away from the consumption forms of traditional documentaries. The integration of multiple platforms in the project allows generative documentaries to become more energetic; it is still in the process of improving their quality. In addition, the engagement of users in the production of project content through the mobile interface is regarded as a more open approach to their contributions, making the design of generative documentaries more intuitive and innovative. The gradual adaptation of the project to mobile devices has created a distinct form of consumption and a new space for interaction. Also, the co-production of projects between different teams has become a phenomenon and projects that work with multiple platforms will no doubt receive more attention. The relationship between the public benefits of the projects and the commodities of their content amplifies their impact while also financially supporting their sustainability.

Integration and Contribution of Multimedia Resources

Generative documentaries are an emerging form of multimedia language constructed through the combination of various texts, audio-visual materials, interactive technologies and user-generated content. Audio-visual products have moved beyond the limits of traditional media as a result of evolving network standards. All forms of network media are in a position to display multimedia content (Ding, 2019, p. 88). This characteristic creates heterogeneous products that stand out because of their intuitiveness. Videos and photographs are generally the most dominant elements of the project. By taking advantage of them, their information can be accessed in an immersive way, and users may find out more about the reality presented through their own observation. The use of multimedia in the projects offers a more open position for the users, granting them a greater degree of freedom.

Nowadays, video resources show a tendency towards micro-formats and independence in generative documentaries. For example, in *Do Not Track* (2015), seven individual chapters and 23 videos are presented, and the videos are all within 3 minutes in length. Videos in micro-format are common in existing projects such as *A Short History of the Highrise* (2013)*,* the *Global Lives Project* (2009–present) and *The And* (2014). Micro-formatted contents promote the integration of different media forms. Such short clips are often rich in information and knowledge. They enable users to capture and receive information rapidly, in a way that is more up-to-date and novel than with traditional linear documentaries. These micro-formats, which serve as independent and detailed content, allow the user to access them as required, creating a more effective and practical experience of the project.

Moreover, the role of text in the project is weakened as excessive text easily exhausts users who favour the visual presentation of videos or images. From this point of view, these preferences of the users integrate different forms of media into the project itself, as in the case of *Motto.io* (2020), where the user's mobile phone camera is utilised to make the presentation of multimedia resources in the project more individualised.

Notwithstanding, the integrated content of the project is sometimes contributed to by the users. Within this type of interactive documentary, users find an appropriate position from which to contribute to the project's narrative by sharing their own stories, such as in *Motto.io* (2020). Although the micro-formatted content contributed by the users in generative documentaries still has limitations, other cases, such as the *Global Lives Project* (2009–present), demonstrate the strength of the user-generated content of the project. Furthermore, generative documentaries take into account how this user-generated content/fragmented content can be selected, aggregated and presented in a timely manner. The integration of multimedia resources also makes the author-project-user relationship more fluid and dynamic.

The User-Generated Content Projects: A Digitised Global Exhibition That Keeps on Collecting and Changing

Constructing stories that are both educational and enjoyable is a core principle of the traditional linear documentary. Interactive documentaries should follow suit and attempt to provide a comparable experience that combines entertainment and information dissemination in the most effective, practical, innovative and engaging way. A combination of different forms of navigation and interactivity does exactly this, as it allows for multiple exchanges between the user, the project and the author. Therefore, a range of parameters indicating the various levels of user engagement can be created from the combination of web features, new technologies and user participation (Li, 2016, p. 116). In current generative documentaries, the users are involved in the production of the project as participants, contributors or producers/co-creators, depending on the levels of interactivity between the user and the project.

Furthermore, an involved user can delve into the parts of the project that they consider most attractive, access additional content or follow pathways arising from the main storylines. The narrative of such a project changes from a closed and linear structure to an open and non-linear one that develops continuously. The proposals of the distinct chapters, which work independently but are interlinked, represent development beyond traditional media. Such an expansion of narratives involves active users in an open and continuously evolving intuitive world while maintaining the definitive characteristics of interactivity, navigation and engagement.

Among them, projects designed based on user requirements stand out, where the project system uses the personal data provided by the user to personalise their experience of the project, as in *Do Not Track* (2015). Likewise, in *Motto.io* (2020), the specific contents or resources submitted by the user contribute to the content of the project. Also, in *A Short History of the Highrise* (2013), the users contribute to the content of the project by participating in the project activities. Additionally, these ongoing projects can serve as records of the times and witnesses to change. Here, the potential elements for users to feel as though they belong to the story emerge: the visual presentation of the project, space for interaction between its users and user-generated content. Therefore, user-generated content is described from high to low levels of user contribution to the project in terms of the user as the producer of the project; the user and the producer as co-creators; the user as a contributor engaged in producing parts of the project; and user participation in project activities.

The highest level of user-generated content is when the user creates the project themselves, which is seen as a great opportunity for generative documentaries. As Kapur (2018, p. 49) pointed out, the capacity to produce images and narratives can easily be located in the field of "amateur" users. With the introduction of production platforms and the convergence of new media technologies, there is no doubt that the user can be the author. As previously mentioned, in 2019, the major Chinese video platforms released interactive video production platforms that were intended to lower the threshold of project production; the user follows the guidelines

provided by the interactive video production platform to get to know the steps of project creation. Therefore, interactive or generative documentaries are no longer the exclusive domain of professional teams and interdisciplinary experts. Through easy operations, every user of the platform can create their own projects. As Xiao (2020, p. 127) noted, digital technologies can increasingly be found in the area of open exploration, and the roles of the user are enriched. In a certain sense, production platforms offer a more advanced way for the user to "play" with the project, and the process of creating the project satisfies both the user's need for entertainment and the user's need for information. The user-generated content offers a new approach for interactive documentary projects to discover the innovation of their narratives with the added value of information.

Interactivity is the most prominent feature of generative documentaries, and different types of interactivity allow the user to provide audio-visual materials to complement and enrich the project, making it more diverse, comprehensive and immersive. In this way, selective interactivity offers different options of navigation and content structures, which exhibit the informative and educational features of the project. Generative interactivity provides a more detailed way for the user to play with the project. The process of user participation in the project also entails the user recreating the project and getting a sense of entertainment from its creation. Furthermore, immersive interactivity is intended to offer a sense of perspectives and interactive abilities that enhance the user's engagement with the materials through a convergence with the power of cinema. Social interactivity creates a space for discussion between its users. The user is able to gain a sense of companionship through sufficient discussion.

In terms of attraction, generative documentaries may be equated with perspectives that are similar to games or biographies due to their combination of informative, communicative and entertaining characteristics. Producers currently have few incentives to convert traditional linear documentaries into interactive projects since doing so would restrict their dissemination in the platforms and reduce the projects' spreading impact and immersion owing to their small screen experiences. In the case of the users, however, it is fascinating to be in a position to give their fragmented materials a new meaning through a production platform.

Conclusion

Interactive documentary projects consist of forms of expression of user-generated content, which emerge as a result of new approaches permitted by the documentary genre with technological advancements. At present, countries with prominent work and production in this field are Canada, the United States, Australia and Europe. In this thesis, some interactive documentary projects in China were discussed, with the aim of contributing to the classification of different interactive forms and ways of producing projects.

In the beginning of the thesis, the genres and typical forms of documentaries in China and the West were compared from the perspective of historical development. In China, in the last decade of the 20th century, the documentary underwent a transformative process that took Western documentaries 80 years (see the second chapter). After this period, the development of Chinese and Western documentaries showed different dynamics. Thus, based on their distinct historical evolution, Chinese documentaries exhibit specific types/forms that are different from those of Western documentaries (e.g. Jishi-ism documentaries, vertical screen documentaries, independent documentaries and micro-documentaries). As can be seen, these forms of documentaries are closely related to the advancement of technology. Additionally, in China, documentaries are generally categorised as documentary films, television documentaries or new media documentaries, according to their production and distribution platforms. Therefore, in terms of different classifications and forms, Chinese documentaries emphasise the role of new media and technology, with the new media documentary being noted as a specific category.

As such, new media and other related terms were explained, and the different media environments in China and the West were depicted. For example, China is a mobile-dominated nation when it comes to digital information consumption or digital interactions; the current trends of software/applications and platforms in China tend to have an all-in-one format; and in the Chinese media landscape, the "Live streaming + one industry" model is starting to be emphasised. Furthermore, in 2019, President Xi highlighted the in-depth development of media integration on the basis of the improvement of the information revolution (see the third chapter). In this context, the essential concepts of "media integration" and "integrated media" are introduced. Media integration refers to the combination of traditional media, such as newspapers, TV and radio, with new media, such as the Internet, mobile phones and portable smart devices. In this way, the user is provided with more options to access information or to interact more efficiently with other users. The introduction of new media production platforms and applications such as IVP, Klynt and the XingTu platform, initiated the potential for user-generated content.

In this case, when the documentary meets new media, it leads to the emergence of a new form, the interactive documentary, with its own specific characteristics. The logic of documentary presentation in this new form relates more to how we navigate and interact with its content and other users than how documentary filmmakers present versions of reality. In short, the new terms which identify the types of documentaries are more grounded in the types of interactivity than in the traditional linear narrative.

From a Western perspective, based on Nichols' (1991, p. 12) viewer-text-filmmaker relationship, the interactive documentary can be defined through the user-interactivity-documentary relationship (Gifreu-Castells, 2010, pp. 106–112) or the broadcaster-text-interactor relationship (Alkarimeh & Boutin, 2017, p. 7). The interactive documentary is a broad concept in a state of ongoing generation, which is the result of multiple mixes: the project involves the co-production of professional producers and users, highlighting that the user can select and generate the content of the project. Also, the project consists of an advanced integration of audio-visual elements (video, images, animation, audio, etc.) and text (information). The production and distribution of the project occur through a combination of multiple devices (mobile, computer and TV) and platforms, giving the user a balanced experience that provides not only entertainment and knowledge but also a sense of immersion and companionship.

Furthermore, the interactive documentary is intended both to present an experience of reality and interact with it. Thus, four types of interactivity in existing projects were outlined: selective interactivity, immersive interactivity, social interactivity and generative interactivity (see the fourth chapter). The design of the current Western interactive documentary projects favours selective interactivity and immersive interactivity. Their navigation and structures are more diverse and individualised, while the Chinese projects, for their part, emphasise social and generative interactivity. Regardless of which type of interactivity a project tends to work with, there is no denying that the user takes on a more active role, one that is beginning to increase in significance.

Such interactive documentary projects are not just non-linear narrative documentaries produced with new media; they provide their users with a specific control or power. The author facilitates an immersive experience in which the user is an active participant. Each step of these dynamic exchanges may lead to a shift in the narrative structure and result in different outcomes. Firstly, the author of the project is no longer set up as a unique individual, like a filmmaker or professional director. However, this is not a loss of authorial control but a more advanced stage of control and dissemination. Secondly, the project itself transforms from a closed structure to a pluralistic and open one, that is, it becomes a living project that generates and presents the users' experience of the world in a fluid context. Thirdly, with the popularity of these interactive documentary projects, the traditional roles of the reader, audience and viewer are increasingly being shifted into those of the player, user, participant and contributor. This transformation of the author-project-user relationship generates new dimensions of the documentary field (see the fifth chapter).

Based on the fact that the interactivity of the projects is seen as a transformational power in the form of autopoietic behaviour, the unlimited dynamical connection between the factors with which it relates can be established. Within this context, existing generative documentary projects, which stand out as a type of interactive documentary project with the most potential for interacting with the user, were analysed according to three parameters: interactivity, hyper-textuality and multimediality (see the sixth chapter).

Among these, first of all, conventional social interactivity is often neglected by the producer, as it requires innovative approaches. For instance, this could be designing the user data settings in a more advanced way in order to provide the user with more choices, or regularly updating the content of quizzes and questionnaires so that the user is willing to access and share the projects frequently. Furthermore, the projects can enable the user to access information in real-time by delivering timely feedback. Two-way communication in the project can help to keep the user interested in the project.

Second, independent projects can consider creating a space where the users engage with one another in real-time, enabling them to contribute their ideas to the project while also opening up additional options for user interaction. In this way, a more active discussion between the user and other users as well as the user and the project can take place, which will make participation in the project social, entertaining and informative. Interactions in the comments can also give the projects a certain direction and impetus, rather than leaving inactive comments to simply decorate the project.

Third, both in China and the West, generative documentary projects should be viewed in the context of a multiplatform approach and media integration. The production and distribution of the projects tend to go in the direction of collaboration and integration between multiple platforms: the integration of the projects with social and online video platforms, the combination of the mobile interface (devices) and traditional web interfaces (computers) and the collaboration of project merchandise with e-commerce platforms (see the sixth chapter). In other words, the integration of multiple platforms in the projects allows generative documentary projects to become more engaging, with the projects continuously improving in quality. Also, the gradual adaptation to mobile devices has introduced new forms of interaction. In addition, the exhibition and sale of project-related merchandise can enhance the project's impact as well as support its sustainability in a financial sense. Nowadays, the co-production of projects between different teams has become a phenomenon, and those projects that work with multiple platforms will undoubtedly receive more attention.

Fourth, based on the micro-format of multimedia resources in projects, integrating the project with mobile devices makes it more flexible in how user-generated content works. In such a context, the transformation of the user to the co-creator/author can be performed because of the interactivity of the project.

Finally, the generative documentary is an advanced integration of the traditional documentary and new media. As the project becomes more open and liberal, the user becomes more

active and autonomous. To be more precise, the combination of different types of interactivity in the project allows for multiple exchanges between the user, the project and the author. In this sense, selective interactivity offers various options of navigation and content structures, which show the informative and educational features of the project. Immersive interactivity aims to offer the perspective and opportunity to interact through integrating the power of film to improve the user's engagement with the material. Social interactivity creates a space for discussion between its users. The user is able to gain a sense of companionship through sufficient discussion. Generative interactivity fleshes out the path for the user to engage with the project. The process of user participation in the project is also the process of recreating the project and getting a sense of entertainment and accomplishment from its creation.

In this context of the social and generative interactivity of interactive documentary projects, the position and role of the user become more hybrid. The user is involved in the production of the project as the participant, contributor, co-creator and author, depending on the level of interaction between the user and the project. In this context, the user-generated content offers a new approach for interactive documentary projects to discover the innovation of their narratives with the added value of information.

Options for Further Evolution

As noted in the fourth chapter, in the West, interactive documentary projects are prevalent in a web documentary format and are beginning to be recognized by users, such as *A Short History of the Highrise* (2013) and *Bear 71* (2012). Unlike in the West, interactive documentary projects in China only became involved in their practice and research process later. These projects tend to be partnerships with already established online video platforms and focus on the experience through mobile devices, such as "*Our Festival Ruomuniu*" (2016) (Figure 27) and 记忆像铁轨一样长 "*Memories as Long as Railroad Tracks*" (2019). Thus, depending on these different types of platform collaborations presented, the level of engagement that users are invited to, and the production stages influenced by that involvement, endows the Chinese and Western projects with different methods of user engagement.

Over the past decade, the projects have experimented with various approaches to involve users in their content production. For example, *Do Not Track* (2015) and "*The Legend Hunters Interactive Season*" (2020) permit their users to participate in the project by commenting, adding personal data, etc. Furthermore, *Motto.io* (2020) and "*Wuhan: My Epidemic Diary*" (2020) require them to engage with the projects by uploading photos, audio, text or videos. Projects with this type of collaboration between the author and the user are dominated by the author and do not extend collaboration to the level of collective governance as the author still retains the same level of control over various phases of the project production process. Using the content

contributed by the user who has no control over how these materials are finally used has not achieved a good cultural and liberal expression.

Figure 27

The Home Page of "Our Festival Ruomuniu" (2016)

Due to this, projects that attempt to push for a more advanced co-creation, with an emphasis on the user's voice, have emerged and are mixing the role of the author with that of the user and the content generation with the collective governance, as can be observed in the *Global Lives Project* (2009–present). While all interactive documentary projects permit different levels of power to their users, those that allow the users to be co-creators build, rather than present, a world in which users are not simply required to carry out a task but are freely able to decide where to fit in, and what to establish. Here, the users as co-creators of the project are not just documenting and presenting an external reality, they are part of a process in which their actions and expressions are influential in shaping the shared reality of life. For now, such co-creation projects with collaborative governance are scarce and face some risks, such as the users/co-creators losing motivation over time and not being flexible and connected enough in each section of the project.

In order to give the user more freedom of expression and participation, production platforms of interactive documentary projects that enable the user to become the author were launched. Such platforms fundamentally empower the user to choose their preferred type of interactivity and populate the database of projects by presenting different versions of reality and, ultimately, shaping the shared environment.

Based on these, in the existing projects, the types of user engagement, collaborative governance and content generation of the project are both hybrid, dynamic and multi-layered.

Therefore, a classification of the further growth of interactive documentaries based on the level of user engagement is proposed (Table 12).

Table 12

Proposed Classification of Interactive Documentary Projects Based on the Level of User Engagement

| The User Participation Modes	Description	Examples
User as author	The user is the author of the project, designing and producing their projects. The user is able to edit, design and post their projects through project production platforms or software. Interactive documentary projects are no longer the exclusive territory of professional teams and interdisciplinary experts.	"Memories as Long as Railroad Tracks" (2019) "The Story Behind the Scenes of the Show" (2019)
User as co-creator	The user and the author co-create the project. The author grants the user more space to portray their experience of the world. In a co-created project, the author often sets up the main framework or its rules, and the user can upload or edit their related materials in the project based on its system. The author holds power to select and monitor the content provided by the user and apply it as needed. Alternatively, more advanced co-creation approaches are employed, in which the author and the users co-produce the content of the project with collective governance.	Global Lives Project (2009–present) Motto.io (2020)
User as contributor	The author is responsible for designing and constructing the project, while the user contributes to parts of the project's topics, for instance, by contributing to the content of a sub-chapter or a non-core chapter. Thus, the author maintains central control over the content and its pace, while the user contributes to the content according to the author's requirements. User material is intended to supplement or extend the project and has an impact on its integrity and completeness.	The And (2014) "Our Festival Ruomuniu" (2016)

The User Participation Modes	Description	Examples
User as participant	The user is involved in the activities held by the project, those activities do not factor into the narrative structure of the project, such as the user getting involved in the commenting sessions, questionnaires and interactive quiz games of the project. The author has a high level of control over the critical concept and structure of the project. These projects create the space for user discussion and interaction between users in order to increase their participation and enrich the presentation of the project. This also includes, for example, using user's personal data, posting photos or emojis, commenting, etc..	A Short History of the Highrise (2013) Do Not Track (2015) "The Legend Hunters Interactive Season" (2020)

The left-hand column shows a possible classification into four main modes depending on the different levels of user participation. The right-hand column gives a description of each section and some actual examples belonging to this tier. The structure of the table is pyramidal (Figure 28), which means that the further up the table, the more involved the user is and the higher the requirements placed on the user (basically, the degree of openness, the assignment of control and the type of interactivity in which it is presented).

In the first tier, the user is the author, which equates to the user being able to produce an independent interactive documentary through a simplified, mainstream project production platform or software. With the highest level of engagement and the least experience in project production, this is by far the type with the highest demands on the user. In the second tier, the user is a co-creator, with two aspects of co-creation being present: one is the co-creation of its content, and the other is a higher level of co-creation, that is, getting to the co-management of the project. In the third and fourth tiers, user participation is mainly driven by the intentions of the author. As it stands, more interactive documentary projects in both China and the West are carried out with the user as a participant, whereas the projects with the user as a contributor are currently underway. However, the types of projects in which the user and the author co-create the project and the user controls the entire project are still scarce. Therefore, within this proposed classification based on the levels of user engagement, social interactivity and generative interactivity of the project are strongly emphasised. For the user, it is exhilarating and satisfying to present their contributions or personal materials through any project or production platform. Interactive documentary projects are no longer a presentation of a singular version of reality by their author; they present multiple and layered versions of reality as seen by both the user and the author in the context of dynamic space and interaction.

Figure 28

The Four Levels of User Engagement in Interactive Documentary Project
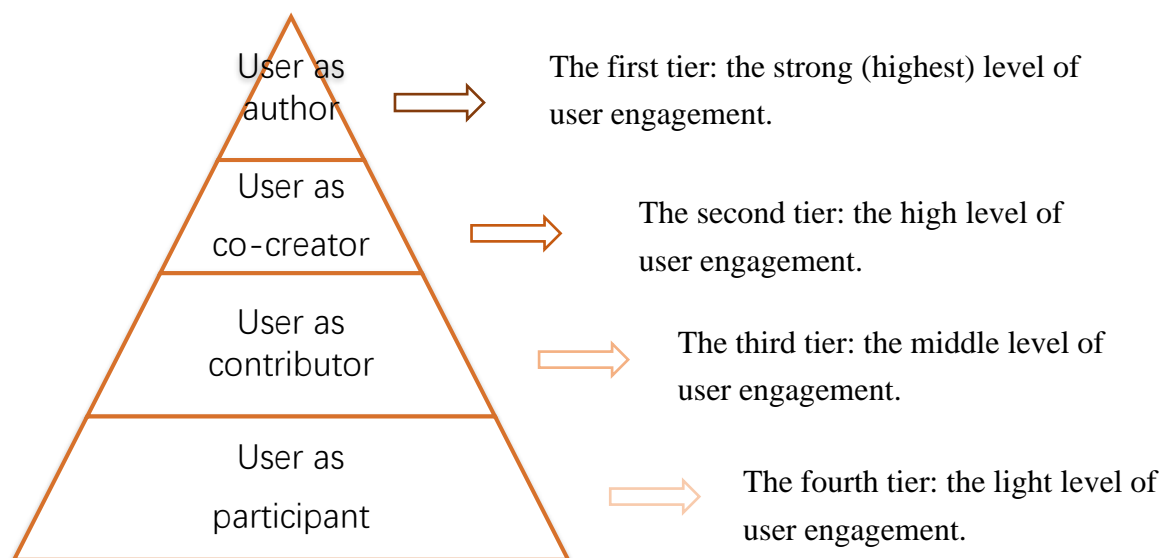
Production, Distribution, and Reception in the West and China

After listing some innovative projects, we considered how the process of digitalisation and online content distribution had affected the form and logic of interactive documentary production in the West and China.

Firstly, from the perspective of production, productions in the West are centred in Europe, Canada and the United States. They are also highly international co-productions. Their productions involve multidisciplinary specialists that combine audio-visual and technological competencies. Among these collaborating specialists are creative technologists, web developers, web designers and transmedia producers (see the fifth chapter). Of these, the production of interactive documentaries is based on the collaboration between traditional documentary producers, public institutions (e.g. NFB), broadcasters, multimedia researchers and other stakeholders (newspapers, private institutions, etc.).

Chinese production teams attempt to draw a two-line dynamic relationship in which the professional production team and the user co-create the project, and the user directly produces the project. Since May 2019, the major domestic online video platforms mapped out their interactive video layouts and accelerated the process of their application and the standardisation of interactive video technology (see the third chapter). One after another, these major platforms launched interactive video platforms or functions to lower the threshold of the creation of such, such as the Interactive Video Platform (IVP) and IVP plug-in of the iQIYI video platform and the XingTu platform of the Tencent video platform. These domestic interactive video produc-

tion platforms provide technical support for user-generated content projects. Therefore, in comparison to the West, domestic interactive documentary projects in China place more effort on the levels of user contribution to the content of the project.

Secondly, from a distribution standpoint, interactive documentary projects strongly connected to the Internet represent an innovative approach to dissemination that differs from traditional cinema circuits. These fundamental approaches to distributing the projects are via web pages, exhibitions and festivals regarding interactive narratives, like the ANTI Festival. Moreover, in the Western context, these projects are mainly presented through web documentaries; Jorge Vázquez-Herrero (2017, p. 7), in an analysis of 125 interactive documentaries from 2010 to 2014, found that 94% of the projects employed this format. Just a few projects adopted other media or platforms (feature documentaries and applications) to expand the story or engage the user, such as Highrise - *Out My Window* (2010) and *Alma, A Tale of Violence* (2012).

In China, these projects are mainly available for user participation through mainstream online video platforms (Bilibili, iQIYI) or other platforms (CCTV documentary channel, Kuai application). The fact that they encourage more users to design their own interactive documentary projects enhances the ways in which the projects are presented and related to the user. Since some footage of the project is displayed on mainstream social media platforms, the form of expression of the content is combined with live streaming, vlogs or other video forms. Although distribution platforms and their types of interactivity differ greatly between China and the West, all these projects drifted away from the traditional consumption forms associated with audio-visual products. In other words, the demands of participating in the progress of their stories moves users away from the typical passivity of viewing while the compatibility of most Chinese interactive documentary projects with mobile devices initiates the new logic of documentary representation and consumption forms.

Thirdly, the experience of interactive documentary projects in the West appears to be individual and independent, requiring a low level of user interaction but a high level of navigation. In general, users can control the progression of the narrative and contribute to its expansion according to the distinct types of interactivity set by the author. Compared to the West, the reception of interactive documentary projects in China not only emphasises the relationship between the author-project-user but also the user-user relationship, which creates a sense of immersion and companionship.

Through these projects, which are a combination of informative, communicative and entertaining elements, the roles of the user and the author are combined for better co-expression and the reshaping of their shared environment. Instead of just using the navigation to experience the project, the user plays an active part in its production by, for instance, co-creating a project through sharing different versions of reality.

Outlook

Making the documentary's content open and accessible to the user and enabling it to grow and change as a continuously evolving system seems to demonstrate a new dimension of documentary production that places emphasis on the co-creation between the user and author, rather than on the presentation of the author's version of reality, as the reason for this new form existing. While it has been found that some interactive documentary projects are indeed potentially more transformative than others, the critical question is not only how open the structure of the projects is but mainly what types of interactivity it provides.

Interactive documentary projects are co-created through different versions of reality and types of interactivity. The level and specificity of such engagement depend on which interactivity is employed and how it is used. If selective interactivity offers multiple paths and choices to take part in a pre-written set of content and perspectives, immersive interactivity makes it possible to re-enact and perceive the realities at hand. Social interactivity can add new dimensions to pre-production, such as by making Danmaku comments containing spoilers for later scenes. Also, it allows for experiencing different versions of reality and opening a new affective space for the user through user-user and author-project-user interactions. Interactive documentary projects fundamentally transform the role of the user, shaping parts of their version of reality according to their contributions to the content.

As with any growing field, more types of interactivity will emerge, sharing more perspectives for negotiating the realities of our world in various dynamic ways. For instance, web documentaries are no longer a synonym for interactive documentary projects. The latest emergence of media technologies and interactive video production platforms opens interactive documentary projects to a possible future where everyone can be the author of the project, that is, in a real-time format. For example, the user can share different thematic videos or photographs of their lives in real-time, with relevant information or item links on the platform, from anywhere, at any time, which other users can discuss or contribute their own audio-visual materials to by setting up a dynamic and interactive autobiography project. The projects enable each user's data to become the lens by which different versions of reality are negotiated. Their innovative features launch numerous fresh areas of investigation.

These integrated platforms can also launch interactive documentary projects with different cultural themes: the user shares and interacts with others in real-time for the purpose of co-creating or co-managing the projects, and functionalities such as offering items related to these themes are added for better dissemination and the integration of heritage. This process would move media integration to an advanced stage.

Throughout this research, some issues came to light. Most Western interactive documentaries are currently published or distributed on specialised platforms, like Arte.tv, the NFB and France 24. Meanwhile, Chinese interactive documentaries are starting to be distributed and produced in collaboration with video sharing platforms and online video platforms like Bilibili,

iQIYI, Youku and Mango TV. Therefore, the assessment and definition of these projects which are created entirely by the user or co-created by both the user and the author must be discussed in further research.

Nevertheless, whether these projects are produced by professional teams or by the user themself, the integration between multiplatforms and media should be considered. As such, research on the relationship between the project and social and e-commerce platforms must be conducted. An open question also remains: how can projects created by professional groups be made compatible for mobile devices?

In addition, the author-project-user relationship shows that each interactive documentary employs and embraces different types of interactivity and that such interactivity is not simple and fixed. In some cases, the projects can be very complex and challenging to understand. Thus, usability and intuition are essential features of interactive projects which can maintain users' interest. Based on this, how to design and classify the different types of interactivity or interactive systems needs to be considered.

Overall, as analysed in this thesis, the types of interactivity are not invariant and neutral. Only a few types of interactivity exhibited in the projects are predictable and controllable. The exploration undertaken in this thesis was not only to describe what interactive documentaries can be but also to ruminate on the potential of what we can represent or change through them.

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Appendix

Interactive Projects

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2020)

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