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**Submitted**

July 10th, 2018

**Approved**

December 21st, 2018

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Communication & Society

ISSN 0214-0039

E ISSN 2386-7876

doi: 10.15581/003.32.3.1-15

[www.communication-society.com](http://www.communication-society.com)

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2019 – Vol. 32(3)

pp. 1-15

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**How to cite this article:**

Navarrete-Cardero, L. & Vargas-Iglesias, J. J. (2019). The ability of video games to depict cancer as a dramatic experience. A comparative study with literature and cinema. *Communication & Society*, 32(3), 1-15.

## The ability of video games to depict cancer as a dramatic experience. A comparative study with literature and cinema

**Abstract**

Given that the democratisation of video games has allowed this industry to appropriate a series of themes traditionally the exclusive preserve of other expressive media, this work analyses the capacity of videoludic expression to elicit emotions and convey the seriousness of cancer by performing a comparative study with literature and cinema. To this end, three works (one per medium) were selected to be respectively read, viewed or played by all the study subjects (n=90). A two-step methodology was employed. Firstly, the concepts of *emotion* and *narrative scheme* were defined in the context of disciplines relating to the three media and then shared with the subjects. Secondly, once both variables, i.e. the concepts of *emotion* and *narration*, had been controlled, a questionnaire was designed to determine which of the three works comprising the corpus best conveyed the experience of cancer. The results reveal that the sample game, in spite of its shortcomings in character design, was judged to be the one that most poignantly described the development of the disease. Therefore, it is possible to claim that the common belief that video games are trivial devices, solely designed to entertain, contrasts with their true expressive ability to convey dramatic experiences.

**Keywords**

**Video game, literature, cinema, narrative, emotional response, cancer, serious games.**

### 1. Introduction

The current democratisation of video game development, thanks to the general public's easy access to graphic engines (Marchiori *et al.*, 2012; O'Donnell, 2009), has led to the incorporation of marginal topics far-removed from the blockbuster phenomenon in this new intelligent object of popular culture. These new byways down which video games are currently journeying were formerly the exclusive preserve of expressive media, such as literature and cinema, legitimised by the transmission of day-to-day, emotional and dramatic experiences. Notwithstanding this unquestionably humanistic drawback, it should be noted that the video game phenomenon has always been closely related to patient therapy (Baranowski *et al.*, 2008; Granic, Lobel & Engels, 2014; Kato, 2010) and has been recognised as a medium with a huge potential for fostering creativity (Green & Kaufman, 2015; Hutton & Sundar, 2010), improving thought processes (Dye, Green & Bavelier, 2009; Latham, Patston & Tippett, 2013) and promoting socialisation in learning spaces (Przybylski, 2014; Stokmans & Nieuwenhuijsen,

2015). However, the intention here is to employ a different approach by comparing the characteristics of this medium with those of literature and cinema, laying stress on the means of narrative expression and on its capacity to offer the public at large moving accounts of intimate human experiences.

Accordingly, we could say that this research is framed in the comprehensive –taxonomic, semantic and pragmatic– redefinition of the canonical concept of the *video game* which is currently being undertaken in different scientific fields. The reason behind this crisis is the existence of different interactive digital experiences that have overwhelmed a notion that is now incapable of defining them. For instance, in which category would all those narrative experiences with a notable lack of entertainment value, but which are engaging an increasingly larger number of players, fall? It is precisely in that epistemological framework in which this research makes sense (Bogost, 2017; Keogh, 2018).

Hence, the aim of this paper is not to inquire into recent developments pertaining to cancer (Stewart & Wild, 2017), its social implications (García, 2017) or its repercussions on the family circle (Villa, Retamal & Martínez, 2017). It has more modest pretensions, since rather than focusing on the factual reality of the disease, its aim is to gain further insights into the fictitious world of its mediated representation, regardless of the fact that the events recounted and the characters created can be real representations. In two of the three selected works, the fictional characters represent real people; in the third, the former represent universal individuals (Doležel, 1999).

This study was performed on a sample of 90 subjects (n=90), all students of the BA programme in Audio-visual Communication of the University of Seville, with a confidence interval (CI) of 80% and a margin of error of  $\pm 6.6$ . The sample's gender and age distribution was as follows: 58.9% of the subjects were female and 41.1% male, 81.1% were aged between 20 and 23, 15.5% between 24 and 29 and 3.3% over 30. The study subjects, surveyed during three academic courses, were not experts in health issues and, in the majority of cases, their knowledge of cancer had been acquired through its representation in literature and cinema. This premise is inherent to the study's main objective, namely, *to gauge the capacity of videoludic expression* (Genvo, 2005) *to elicit an emotional response* (Isbister, 2016) *from a sample of specialists in audio-visual discourses and to raise their awareness about the seriousness of cancer*. For obvious reasons –i.e. the medium's relative newness, public nature and dependence on commercial genres– cancer has been less present in video games than in literature and cinema and, consequently, has contributed very little to the disease's imaginary. This state of affairs has been exploited to assess the real emotional power of video games versus that of literary and filmic discourses, two legitimate media free from the preconceptions affecting the former (McCarthy *et al.*, 2016).

The differences between these three media were overlooked here in the interest of underscoring the structural coincidences between literature, cinema and video games as narrative devices. This licence led to the side-lining of the considerable amount of scientific literature produced more than two decades ago in the field of game studies, whose purpose was to legitimise video games (Aarseth, 1997; Mäyrä, 2008). Consequentially, recourse was made to an analytical model, common to the three media, characterised by the absence of expressive devices –different for each medium in terms of the substance of expression– and by the presence of narrative devices—shared by all in terms of the means of expression. Structurally speaking, the substance of expression was dispensed with, but not so the form of narrative expression.

The semantic short circuit caused by the name chosen for a medium like the video game, capable of telling serious stories despite containing the term 'game' in its nominal construction, was also disregarded here. In game studies, this problem has been resolved by creating the oxymoron of 'serious games' which defines experiences whose purpose is not only to entertain, but also to reach social goals of a diverse nature (Breuer & Bente, 2010).

Thus, far from the frivolous image of video games as entertainment devices, ludological and procedural currents have favoured the production of serious games with the ability to convey moral and social messages and the potential to influence the sensitivity of gamers so as to bring home to them the nature of certain aspects of our social reality. To our mind, nonetheless, the industry has begun to take on a new dimension with the advent of a large number of games labelled, sometimes pejoratively, as narratives –*non ludo, non processus*– which also pursue these serious ends. The game analysed here falls into this last category.

## **2. Materials**

Different materials were employed to conduct this research: on the one hand, those of an immaterial nature, such as the use of the concept of *emotion* in the novel, film and video game analysed here; on the other, physical materials, as was the case with the novels, films and video games initially forming a concise repository of works dealing with cancer, from which only three were chosen for reasons of time. But before describing how the study corpus' three works were selected from the aforementioned repository, it is essential to define the concept of *emotion* used here and shared by the study subjects.

The closest approximation to the concept of *emotion* employed in this research is to be found in the dictionary of the Real Academia Española: '*Alteración del ánimo intensa y pasajera, agradable o penosa, que va acompañada de cierta conmoción somática*'<sup>1</sup> (DRAE, 2013). Somatic commotion is an emotional disturbance that has an actual physical impact on our bodies. Fictional stories, irrespective of their nature, have always strived to thrill and move us. As Descartes suggests in *Passions of the Soul* (2017), emotion is the perspective of action, ultimately the essential basis of any story. The concept of *emotion* introduces subjects in the statement through their assessment of the object that has triggered it during the reading process (Pérez Juliá, 2004), but there are evidently certain peculiarities depending on whether a novel, film or video game is involved. These differences were examined with the respondents before asking them to fill in the questionnaire supplementing the study methodology. Before moving on to its description, it should be noted that the concept of *emotion* was not analysed from the perspective of neurology or cognitive psychology (Mercadillo, Díaz & Barrios, 2007), disciplines beyond our scope, but by approaching it from those of linguistics, cinema studies and game studies. The main ideas employed when working on the concept, with an eye to shaping a sole one shared by all the respondents, are described below.

As a result, this study's unit of analysis derived from a synthesis of the ways in which, according to the cited authors, this trio of discourses elicits an emotional response from the receptor. These forms of emotion are shared by the three types of narrative, derive from abstractions of the works listed in Table 1 and can be defined as follows:

- 1) **Captivating emotion.** Emotion is a mechanism through which discourse irresistibly captivates the spectator.
- 2) **Designed emotion.** Emotion can be shaped by linguistic structures, audio-visual techniques or game design types and, therefore, can be elicited using pre-established patterns. In this respect, the ethical debate on the invocation of emotion and its legitimacy is unavoidable.
- 3) **Revealed emotion.** Emotion for emotion's sake highlights the discursive superficiality of its construction and the reader/spectator/gamer's rejection of it.
- 4) **A priori emotion.** Emotion that is not only produced discursively. The reader/spectator/gamer feels a prior emotion that can be enhanced favourably during storytelling –maximum effect– or unfavourably –detachment or contempt.

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<sup>1</sup> 'An intense and fleeting, agreeable or distressing mood swing that is accompanied by a certain degree of somatic commotion' [our translation].

- 5) **Paratextual emotion.** Emotion peripheral to the story that impinges positively or negatively on the final result of the subject's relational process with and general view of the work.
- 6) **Evaluative emotion.** Readers/spectators/gamers assess the work and their emotional response to it, leading to a purely intellectual or performative action. This is where the reflective processes and subsequent actions that the work triggers in the reader/spectator/gamer occur.

**Table 1:** Concepts and authors studied to construct the concept of emotion.

STORY	CONCEPTS AND REFERENCES
Literature	<p><b>Expressive language function:</b> symptomatic function of language: model of the 'organon' and genesis of the concept developed by Jakobson.  <b>Author:</b> Karl Bühler (1950).</p> <p><b>Emotional language function:</b> designed to elicit emotions.  <b>Author:</b> Roman Jakobson (Rodrigo, 1995).</p> <p><b>Speech act theory:</b> establishing illocutionary and perlocutionary acts to elicit an emotional response from the reader.  <b>Author:</b> John L. Austin (1962).</p> <p><b>Emotional participation through transtextuality:</b> subjects are emotionally captivated by the work when they recognise the footprints of the creative process through transtextuality.  <b>Author:</b> Gérard Genette (1989).</p>
Cinema	<p><b>Dual emotion of the cinematographic story:</b> projection: the spectator shows solidarity with the character. Identification: the incorporation of the spectator's emotions in the story.  <b>Author:</b> Hugo Munsterberg (Montiel, 1992).</p> <p><b>Montage of attractions:</b> all those moments at which the spectator is subject to scenes of violence.  <b>Author:</b> Serguei M. Eisenstein (1989).</p> <p><b>The spectator's affective participation:</b> automorphism, anthropomorphism and duplication.  <b>Author:</b> Edgar Morin (2001).</p> <p><b>Primary and secondary identification:</b> Primary: camera; secondary: actor.  <b>Author:</b> Jean Louis Baudry (1975).</p>
Video game	<p><b>The gamer's choices:</b> an emotional response is elicited through the design, obliging the gamer to make choices that are not always ethical.  <b>Author:</b> Katherine Isbister (2016).</p> <p><b>Mechanics, dynamics and aesthetics model:</b> the aesthetics of a video game, with its mechanics and dynamics, elicits an emotional response from the gamer.  <b>Authors:</b> Robin Hunicke, Marc LeBlanc and Robert Zubek (2004).</p>

Source: Own elaboration.

Although this procedure aimed at rationalising emotion may seem both counterproductive and impossible for research, we believed that its analysis was essential in order to align its domain with that of the experience and knowledge of shaping narratives and stories which the respondents already possessed. Admittedly, if they had all been able to identify the underlying structure of a story and its power to elicit an emotional response from them using different strategies, their answers to the questionnaire would have met the

primary objective of a study supported by expert knowledge. Our ultimate intention was to substitute the intuition that any of the readers/spectators/gamers might have had about these issues with an experience filtered by their understanding when *reading* the three selected works.

Thus, the respondents were involved in a study of language functions aimed at eliciting an emotional response from them –valid for the three media– became familiar with the emotion contained and conveyed in the cinematographic story through the genre’s key authors and, lastly, had access to the main methods for tailoring emotional experiences in recreational environments. The concepts learnt by the respondents are shown in Table 1, the types of *emotion* employed here resulting from an analytical intellectual exercise performed on them. For example, in the ‘Novel’ section, the concept of emotional participation through *transtextuality* stems from the study of the terminology employed by Genette (1989) to discover how texts speak openly or secretly to one another, something that ends up undermining the concept of originality. In our view, it is undeniable that the discovery of this secret process elicits an emotional response from readers –also extensible to viewers and gamers. So, the results of the analysis of the Genettian categories led, on the one hand, to the concept of *captivating emotion* –also confirmed by other strategies– and, on the other, to that of *paratextual emotion*, to wit, an application of one of Genette’s ideas –the paratext– to the description of an emotion that affects the study text –without emanating directly from this– by contagion or proximity.

### 3. Method

The first step involved building a corpus of cancer-related works. In order to achieve the right balance between the samples of the three media, firstly a list of video games was drawn up, fully aware that the difficulty lay in finding suitable videoludic examples. This resulted in the selection of three groups with eight works apiece:

**Table 2:** Novels selected for the study.

NOVEL	AUTHOR	LOCATION	ROLE
<i>Hoy es primavera</i>	N. da Lua, 2017	Hip sarcoma	Relevant
<i>The Story of My Tits</i>	J. Hayden, 2016	Breast	Relevant
<i>Juan tiene bichos en la sangre</i>	R. Mirapeix, 2014	Leukaemia	Relevant
<i>The End of Your Life Bookclub</i>	W. Schwalbe, 2013	Pancreas	Relevant
<i>Puto cáncer</i>	M. Sánchez, 2013	Intestine	Relevant
<i>The fault in our stars</i>	J. Green, 2012	Lung	Relevant
<i>Love Life</i>	R. Kluun, 2008	Breast	Relevant
<i>The Death of a Beekeeper</i>	L. Gustafsson, 2006	Spleen	Relevant

Source: Own elaboration.

**Table 3:** Films selected for the study.

FILM	DIRECTOR	LOCATION	ROLE
<i>Ma ma</i>	J. Medem, 2015	Breast	Relevant
<i>The Bucket List</i>	R. Reiner, 2007	Brain	Relevant
<i>Emmas Glück</i>	S. Taddicken, 2007	Pancreas	Relevant
<i>El juego de la verdad</i>	A. Fernández, 2004	Brain	Relevant
<i>La puta y la ballena</i>	L. Puenzo, 2004	Breast	Relevant
<i>The Cry of the Butterfly</i>	F. Strecker, 2003	Leukaemia	Relevant
<i>Terms of Endearment</i>	J. Brooks, 2001	Breast	Relevant
<i>Sweet November</i>	P. O’Connor, 2001	Lymphoma	Relevant

Source: Own elaboration.

**Table 4:** Video games selected for the study.

VIDEO GAME	AUTHOR	LOCATION	ROLE
<i>That Dragon, Cancer</i>	R. Green, 2016	Brain	Relevant
<i>Everybody's Gone to the Rapture</i>	J. Curry, 2016	Untraceable	Occasional
<i>Re-mission 2. Nanobot's Revenge</i>	HopeLab, 2015	Leukaemia	Relevant
<i>Play to Cure: Genes in Space</i>	Guerrilla Tea, 2014	Multiple	Relevant
<i>Saints Row IV</i>	S. Phillips, 2013	Untraceable	Occasional
<i>To the Moon</i>	K. R. Gao, 2011	Untraceable	Occasional
<i>Re-mission</i>	P. Omidyar, 2006	Leukaemia	Relevant
<i>Ben's Game</i>	B. Daskin, 2004	Leukaemia	Relevant

Source: Own elaboration.

When building the corpus, it was decided to include the author, the location of the cancer and the relevance of the disease's role in the plot. This last criterion was introduced following the classification proposed by García-Sánchez, Fresnadillo and García-Sánchez (2002) for establishing the importance of diseases in filmic discourses. It was also deemed appropriate to employ an identical criterion for the novels and video games. According to these authors, films are classified as 'healthy' when disease is totally absent, 'occasional' when there is some or other reference to it, 'relevant' when the main characters suffer some or other morbid process and, finally, 'argumentative' when the film focuses on the repercussions of the disease in question.

This information proved to be fundamental for reducing the number of study samples to three. A higher number would not only have required a greater effort on the part of the respondents, but a much longer study time frame. So, with a view to performing the second and final selection, the following four criteria were adopted: (1) the three works had to be classified as 'relevant' in relation to cancer; (2) it was decided that, given the age of the respondents, the works should be recent; (3) so as to vary the type of cancer, a different type was chosen for each one of three media; and (4) finally, each work was associated with a stage of life: infancy (video game); maturity (film); and old age (novel). The application of these criteria resulted in the definitive corpus which was then distributed among the respondents:

**Table 5:** Definitive works selected for the study.

WORK	TYPE	AUTHOR	LOCATION	ROLE	STAGE OF LIFE
<i>That Dragon, Cancer</i>	Video game	R. and A. Green, 2016	Brain	Relevant	Infancy
<i>Ma ma</i>	Film	J. Medem, 2015	Breast	Relevant	Maturity
<i>The End of Your Life Bookclub</i>	Novel	W. Schwalbe, 2013	Pancreas	Relevant	Old age

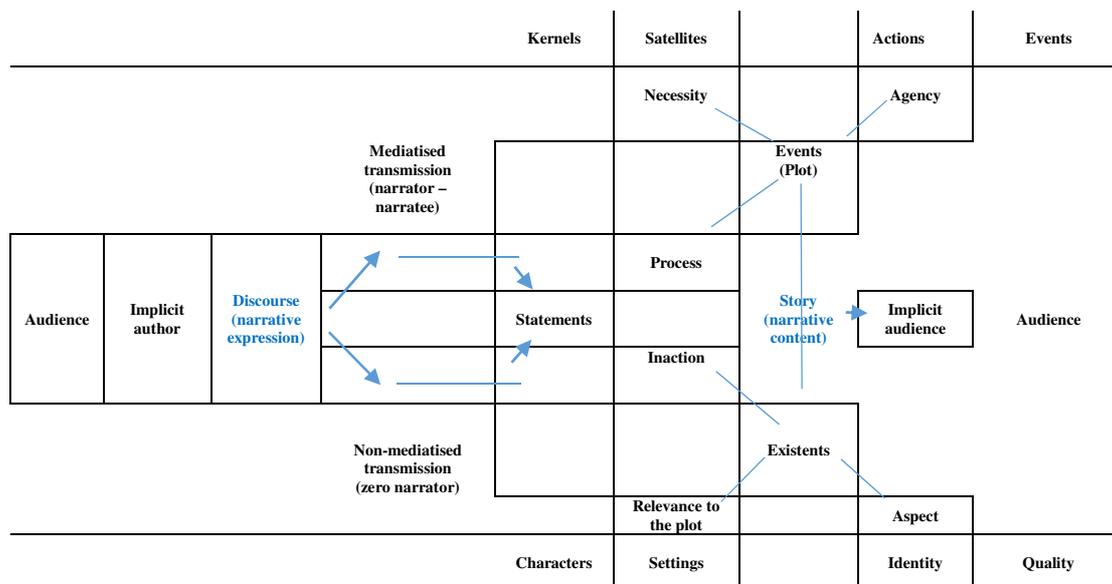
Source: Own elaboration.

As already noted, a dual methodology was employed. Firstly, this involved creating a diagram of the narrative structure as a sort of theoretical model common to the three study media, which was then distributed among the respondents with the aim of providing them with a set of guidelines during the reading/viewing/gaming process. This model dispensed with the substance of narrative expression to focus on its forms, that is, on the elements that the narratives had in common, regardless of the medium. The model's prominence in the study, as with the concept of *emotion*, served to clarify the final results, enabling us to gauge and delimit the scope of the respondents' answers by standardising the reading/viewing/gaming experiences of the three works. The model's role was to guide them in this process, so as to ensure that their pneumatic reflections had a minimum common

denominator; i.e. to take note of the events and existents of the narrative structure and to delve deeper into each one of the model's ramifications.

In sum, all the respondents could consider themselves to be experts in the terminology employed in this narrative model, their familiarity with each one of the its concepts guaranteeing its intelligibility and, above all, applicability to the objects of study.

**Table 6:** Model based on the theory of the narratologist Seymour Chatman (1990).



Source: Own elaboration.

The principles of structuralist narratology for the study of narratives are shown in Table 6. In order that the respondents should apply them during the reading/viewing/gaming process, it was decided to generate a diagram of the narrative structure on the basis of the theory proposed by Seymour Chatman (1990). Structuralist theory posits that each narrative has two parts: a story formed by the content or chain of events –kernels, satellites, actions and events– plus those known as existents –characters, items of setting, identity and quality; and a discourse, namely, expression, the means by which the content is conveyed. Paraphrasing Chatman, the story is the *what* of the narrative and the discourse is the *way* (1990, p. 20).

This diagram, established as a methodology to analyse the elements of a narrative, irrespective of the medium, was thought to be just as valid for the study objectives, in analeptic mode, as the Aristotelian principles set out in *The Poetics*, the theory of the Russian formalists or, in an updated fashion and therefore in proleptic mode, Doležel's *Heterocosmica* (1999). Chatmanian structuralism was chosen because of the clarity and simplicity of its model. Furthermore, as observed above, the respondents were already very familiar with the model's essential concepts through their curriculum.

As the final method for obtaining results, a questionnaire divided into four thematic sections was designed. The first of these contained generic items aimed at:

- 1) Gathering information on the number of novels, films and video games consumed by each one of the respondents on a yearly basis (Items 1, 2 and 3).
- 2) Identifying the efficiency of the narrative model employed, checking after its application in the reading/viewing/gaming process whether or not the respondents considered the novel, film and video game to be legitimate expressive media, well-suited to their

purpose. The real interest lay in discovering the thoughts that the video game provoked in them (Items 4 and 5 –*structural and evaluative emotions*).

- 3) Identifying whether or not the respondents believed that the way in which the novel, film and/or video game depicted cancer was ethical. As before, the main concern was to discover their views on the video game, insofar as their assessment of the novel and film was anticipated (Items 6, 7, 8 and 9 –*evaluative emotion*).

The second section included generic questions designed to gauge the respondents' emotional response:

- 4) Assessing the respondents' appraisal of the emotional power of the study media, regardless of the reading/viewing/gaming experience to which they had been subjected (Items 10 and 11 –*a priori emotion*).
- 5) Checking whether or not the works had emotionally fulfilled their role and the ultimate message of each one of them had been effectively conveyed to each respondent (Items 12, 13 and 14 –*designed emotion*).

The third section of the questionnaire included questions pertaining to the emotional power of the assessed discourses:

- 6) Determining whether traumatic experiences, overwhelming because of their dramatic nature, were accepted by the respondents. In this case, it was essential to check whether they identified with the emotions conveyed in the works or rejected them for some reason or another (Item 17 –*captivating and a priori emotions*).
- 7) Evaluating which work elicited the most positive emotional response and was the most remarkable and striking of all (Items 15, 16, 18, 19, 20 and 21 –*evaluative and captivating emotions*).
- 8) Identifying which character was the most moving and had the best constructed psychological profile, plus assessing the extent to which these considerations influenced the respondents when asked to choose the work that best conveyed the experience of cancer (Items 23, 24, 25 and 26 –*designed and evaluative emotions*).

Finally, the fourth section of the questionnaire was aimed at gauging paratextual emotion, particularly in the case of the video game:

- 9) Contrasting the mood and emotions elicited from the respondents with information that might have undermined the emotional response triggered by each one of the works, especially the video game (Items 27, 28, 29 and 30 –*paratextual emotion*).

#### **4. Analysis and results**

The answers to the questions in the first section of the questionnaire showed that:

- 1) Films were consumed more than novels and video games and, as to these last two media, the former more than the latter.
- 2) The three media were apparently recognised as means of expression suitable for crossing the threshold of mere entertainment.
- 3) A high proportion of the respondents believed that works on cancer were socially beneficial and ethically acceptable.

**Table 7:** RESULT 1. Generic questions.

<u>1. How many books do you read a year?</u>			<u>2. How many films do you watch a year?</u>			<u>3. How many video games do you play a year?</u>					
None	3	3.3%	None	0	0%	None	20	22.2%			
From 1-5	43	47.8%	From 1-5	1	1.1%	From 1-5	45	50.0%			
From 5-10	31	34.4%	From 5-10	4	4.4%	From 5-10	14	15.6%			
From 10-15	4	4.4%	From 10-15	4	1.4%	From 10-15	3	3.3%			
Over 15	9	10.0%	Over 15	81	90.0%	Over 15	8	8.9%			
<b>4. Do you believe that it is appropriate (more than one option):</b>											
For writers to use their way with words to offer an account of their experiences?						89 (98.9%)					
For directors to use their ability to create images to offer an account of their experiences?						87 (96.7%)					
For video game developers to use mechanisms to offer an account of their experiences?						88 (97.8%)					
<b>5. Do you regard (more than one option):</b>											
A novel as a means of expression?						88 (97.8%)					
A film as a means of expression?						89 (98.9%)					
A video game as a means of expression?						76 (84.4%)					
<b>6. Do you approve of people writing about cancer?</b>			<b>7. Do you approve of people making films about cancer?</b>			<b>8. Do you approve of people developing video games about cancer?</b>			<b>9. Do you believe that these works are socially useful?</b>		
Yes	90	100%	Yes	89	98.9%	Yes	85	94.4%	Yes	87	96.7%
No	0	0%	No	1	1.1%	No	5	5.6%	No	3	3.3%

Source: Own elaboration.

In the second section of the questionnaire, the results indicated that:

- 1) Initially, the respondents were inclined to be more emotionally moved by films than by the works of other expressive media.
- 2) Notwithstanding this, to the normative question of which medium was the most suitable for conveying emotions, literature gained ground on cinema, although without surpassing it.
- 3) The respondents defined each one of the works with a statement that clearly indicated that they had understood its narrative structure and the ultimate purpose of its author.

**Table 8:** RESULT 2. Emotion I.

<b>10. Regardless of the study works, I have always felt more emotionally moved (more than one option):</b>	
By novels	48 (53.3%)
By films	74 (82.2%)
By video games	13 (14.4%)
<b>11. Irrespective of my experience, I have always known that of the three media (more than one option):</b>	
Literature best conveys emotions due to its capacity to reveal the inner world of the characters	63 (70.0%)
Cinema is best suited to conveying emotions because, in addition to revealing the inner world of the characters, it can visually show us their actions	68 (75.6%)
Video games more appropriate for conveying emotions because you control an avatar through which you can express your own feelings	25 (27.8%)
<b>12. Indicate which statements are true (more than one option). <i>The End of Your Life Bookclub</i>:</b>	
Deals with the acceptance of death and the fortitude with which we face it	73 (81.1%)

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Is a good novel about cancer	43 (47.8%)
Is a boring novel	13 (14.4%)
13. Indicate which statements are true (more than one option). <i>Ma ma</i> :	
Is a good film about cancer	41 (45.6%)
Is a boring film	9 (10%)
Deals with life and death as the same process	68 (75.6%)
14. Indicate which statements are true (more than one option). <i>That Dragon, Cancer</i> :	
Is a good video game about cancer	52 (57.8%)
Offers a boring gaming experience	6 (6.7%)
Deals with getting over the death of a son	64 (71.1%)

Source: Own elaboration.

The third section of the questionnaire yielded the following results:

- 1) The work that evoked the most positive feelings was the novel, but the most surprising of all was the video game.
- 2) The video game was the work that most caught the attention of the respondents: many of them felt the need to search for further information about it.
- 3) The video game was the work that was the most emotionally moving for the respondents, but the film was the one that made them cry most and which they would recommend to some or other friend.
- 4) The character with the most complex psychological profile appeared in the film, although this did not prevent the respondents from identifying more closely with the characters of the novel and, above all, especially with those appearing in the video game.
- 5) The work thought to be the most suitable for conveying the experience of cancer was the video game.

**Table 9:** RESULT 3. Emotion II.

<p>15. <u>Which work did you enjoy most and evoked the most positive emotions?</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">The novel</td> <td style="padding: 2px;">43</td> <td style="padding: 2px;">47.8%</td> </tr> <tr> <td style="padding: 2px;">The film</td> <td style="padding: 2px;">32</td> <td style="padding: 2px;">35.6%</td> </tr> <tr> <td style="padding: 2px;">The video game</td> <td style="padding: 2px;">15</td> <td style="padding: 2px;">16.7%</td> </tr> </table>	The novel	43	47.8%	The film	32	35.6%	The video game	15	16.7%	<p>16. <u>The work that most surprised you was</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">The novel</td> <td style="padding: 2px;">8</td> <td style="padding: 2px;">8.9%</td> </tr> <tr> <td style="padding: 2px;">The film</td> <td style="padding: 2px;">14</td> <td style="padding: 2px;">15.6%</td> </tr> <tr> <td style="padding: 2px;">The video game</td> <td style="padding: 2px;">68</td> <td style="padding: 2px;">75.6%</td> </tr> </table>	The novel	8	8.9%	The film	14	15.6%	The video game	68	75.6%	<p>17. <u>Did the representation of the macabre aspects upset you (overwhelming due to their morbidity, cruelty or dramatic power)?</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">No, they form part of life, so pondering on them is necessary</td> <td style="padding: 2px;">81</td> <td style="padding: 2px;">90%</td> </tr> <tr> <td style="padding: 2px;">Yes, I would rather avoid them, consuming works that only amuse or interest me for other reasons</td> <td style="padding: 2px;">9</td> <td style="padding: 2px;">10%</td> </tr> </table>	No, they form part of life, so pondering on them is necessary	81	90%	Yes, I would rather avoid them, consuming works that only amuse or interest me for other reasons	9	10%
The novel	43	47.8%																								
The film	32	35.6%																								
The video game	15	16.7%																								
The novel	8	8.9%																								
The film	14	15.6%																								
The video game	68	75.6%																								
No, they form part of life, so pondering on them is necessary	81	90%																								
Yes, I would rather avoid them, consuming works that only amuse or interest me for other reasons	9	10%																								
18. <u>Did the experience captivate you (more than one option)?</u>																										
I could not stop thinking about the novel	28 (31.1%)																									
I could not stop thinking about the film	37 (41.1%)																									
I could not stop thinking about the video game	52 (57.8%)																									
I forgot about them all	8 (8.9%)																									
19. <u>Did you feel the need to search for further information (more than one option):</u>																										
About the novel?	36 (40%)																									
About the film?	23 (25.6%)																									

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About the video game?		53 (58.9%)	
No need whatsoever		15 (16.7%)	
20. <u>Did you have to stop reading/viewing/gaming because you felt emotionally involved (more than one option)?</u>			
With the novel		6 (6.7%)	
With the film		6 (6.7%)	
With the video game		12 (13.3%)	
In none of the three cases		71 (78.9%)	
21. <u>Did you cry (more than one option):</u>			
While watching the film?		42 (46.7%)	
While reading the book?		16 (17.8%)	
While playing the video game?		32 (35.6%)	
No		35 (38.9%)	
22. <u>Which of the works would you recommend (more than one option)?</u>			
The novel		35 (38.9%)	
The film		46 (51.1%)	
The video game		43 (47.8%)	
None of them		6 (6.7%)	
23. <u>Did you identify more with the anguish of some of the characters?</u>		24. <u>The character with the most complex psychological profile was</u>	
In the novel	16 17.8%	Will, Ann's son in the novel	43 47.8%
In the film	26 28.9%	Magda, the film's main character	31 34.4%
In the video game	48 53.3%	Ryan, the father of young Joel in the video game	16 17.8%
25. <u>Did you identify more with some of the characters?</u>		26. <u>The work that best conveys the experience of cancer is:</u>	
Will and Ann, in the novel	41	The novel	16 17.8%
Magda and Arturo, in the film	27	The film	32 35.6%
Ryan and Amy, in the video game	22	The video game	42 46.7%

Source: Own elaboration.

Lastly, the final section of the questionnaire, aimed at modifying the emotional assessment of the works, particularly the video game, through the inclusion of paratext, showed that:

- 1) The respondents did not believe that it was odd that these works should be sold commercially, despite the fact that many of them offer accounts of the harrowing experiences of the authors' immediate family.
- 2) More than half of the respondents considered that the profit-making aspect was not important. They held that making a film about cancer with imaginary characters was more profitable than writing a novel or developing a video game about real-life characters with cancer.
- 3) When asked about the price of the video game, most of the respondents thought that it was reasonable.
- 4) The vast majority of the respondents recognised that there were misgivings and preconceptions about video games, but that they would end up being accepted in the near future.

**Table 10:** RESULT 4. Commercial considerations.

27. <u>All these works are sold commercially.</u>	28. <u>Do you believe that it is more profitable:</u>
I approve 89 98.9%	To write and sell a novel about the death of your mother from pancreatic cancer? 4 4.4%
I approve, provided that they are not based on real facts 0 0%	To make and sell a film about breast cancer? 28 31.1%
I approve, provided that they are not based on real facts and that they do not describe the authors' personal experiences 1 1.1%	To develop and sell a video game about the death of a son from cancer? 5 5.6%
	The profit-making aspect is neither here nor there 53 58.9%
29. <u>The video game costs 8.99 €.</u>	30. <u>Are there misgivings and preconceptions about video games as a means of expression?</u>
It seems like a reasonable price 74 82.2%	Yes, logically so, insofar as it is an entertainment medium that trivialises serious issues 7 7.8%
I believe that the authors, Joel's parents, are turning a profit 13 14.4%	Yes, they exist, but with time they will be accepted as a means of expression to recount any experience 79 87.8%
It is ethically unacceptable 3 3.3%	There are no such misgivings, since it is a medium that just is not suitable for certain topics 4 4.4%

Source: Own elaboration.

## 5. Discussion and conclusions

- 1) According to the results, it was generally held that the ability of video games to allow for an accurate identification with the characters and their optimum psychological construction fell short of that of literature and cinema. Nonetheless, the respondents believed that the video game analysed here was more effective in this regard than the novel and that it was the most suitable medium for conveying the distressing experiences of the main characters. In light of these considerations, identification, psychological construction and conveying the feeling of anguish seem to be correlated, although not linked by any cause-effect relationship. As to this study, it can be concluded that the video game was more closely associated with evaluative emotion, while the novel and the film elicited a more primary captivating emotional response from the respondents.
- 2) Notwithstanding the fact that the video game was thought to be the best medium for conveying the experience of cancer, the respondents were more inclined to recommend the film to an acquaintance. The reason behind this may lie in the immediacy of cinema versus the complex videoludic experience in which the development of the discourse is accompanied by further paraphernalia –peripherals, computer, etc.
- 3) The respondents' preconceived ideas about the emotional power of the study media contrasted starkly with the final results for the video game, which was the preferred medium for conveying the experience of cancer through its own narrative expression.
- 4) Nevertheless, the respondents' preconceptions about the ability of video games to describe experiences relating to topics far-removed from pure entertainment did not seem to have affected them after playing *That Dragon, Cancer*. This finding is linked to the fact that the video game was the study medium that most surprised the respondents, when discovering its huge capacity to depict the disease process.

- 5) That fact that the three works had been produced for financial gain did not prevent the respondents from offering a positive assessment. It should be recalled that *That Dragon, Cancer* has received a great deal criticism from different sectors for gamifying distressing experiences and selling the product for 13.49 € –8.99 € when this paper was written. Literature and cinema are, in the main, legitimate media for recounting human experiences. Video games, pigeonholed as entertainment formats, come under scathing attacks when they overstep those limits. The study results are conclusive: once the respondents had played the video game, their doubts about the medium's expressive ability were dispelled, along with any suspicion about its commercial nature –also shared by the film and the novel– whether they were fully aware of this or not.
- 6) In view of this, the results reveal the need for a positive review of the videoludic medium, employing approaches strictly related to communication, which does have to be associated with the good reputation that it currently enjoys among education and health professionals. Video games are an adult medium not only because they serve educational purposes, but also because they can depict human beings –on the whole– from other perspectives that hitherto have been the exclusive preserve of literature and cinema.
- 7) This process can perhaps be expedited by creating, in the field of game studies, a taxonomy that faithfully reflects the humanistic revolution –pertaining to human values– occurring in the medium. It is not enough to create new generic labels under the umbrella of the *video game* concept. It is imperative that this primal taxon be reviewed to create another of the same level and order that reflects this process.
- 8) As shown by the results, 86.8% of the respondents held that it was only a question of time before video games would be accepted as a legitimate medium for recounting multiple experiences. As the age of the respondents indicates, the generational factor is apparently decisive for the medium's necessary *humanistic* development.
- 9) We are fully aware of the limited applicability of these results owing to the size of the sample employed. Nonetheless, it should not be forgotten that the objective of this paper was to gather the opinions of a group of experts. Therefore, despite its limitations, this preliminary study opens up new avenues for future research, while regarding video games as a narrative discourse capable of conveying emotions as effectively as literature and cinema.
- 10) Moreover, we admit that the study could have been more challenging if other aspects, which were disregarded despite forming an essential part of the works read, viewed and played by the respondents, had been taken into consideration. We are referring, for instance, to the complete lack of attention paid to the issues of realism, a crucial element for helping subjects to identify with narratives and very closely related to their capacity to elicit an emotional response from them. The ontological realism of the photographic image is an element that hypertrophies emotions in the spectator (Bazin, 1966; Bordieu, 2016). When bearing in mind that the video game analysed here is not strictly realistic – the characters' faces have been eliminated– and notwithstanding the fact that it was considered to be the best medium for conveying the experience of cancer, what conclusions can be drawn from the relationship established by the concepts of emotion and realism in this new means of expression? These are doubtless enthralling topics that should be explored in future research.

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