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► **To cite this version:**

Elodie Jarrier, Dominique Bourgeon-Renault, Maud Derbaix, Christine Petr. Narrative transportation scale: Measure development for transmedia experience. 14th International Conference on Arts and Culture Management, Jun 2017, Beijing, China. hal-02139849

HAL Id: hal-02139849

<https://hal.science/hal-02139849>

Submitted on 25 May 2019

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**Narrative transportation scale:
Measure development for transmedia experience**

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Abstract

To better understand transmedia experience in the cultural context, one needs to focus on narrative transportation as a prototypical form of experiential response with transmedia display. The present article focuses on narrative transportation scale development and presents the results drawn from a first data collection. Dimensions of narrative transportation and an initial pool of items are based on previous research, as well as on an exploratory study intended to understand transmedia experience in a cultural context and the process of narrative transportation. Exploratory factor analysis is implemented, the scale structure is presented and its reliability estimated. This measurement tool will namely enable to highlight causal relationships between narrative transportation and transmedia experience outcomes such as commitment and attachment towards the object of narration.

Keywords

Transmedia experience, narrative transportation, scale development, quantitative research, cultural context

Narrative transportation scale: Measure development for transmedia experience

Introduction

Recently several museums and performing arts companies have used digital technologies and implemented transmedia experiences trying to improve relationships with their current audience and to develop new relationships with new visitors/spectators. In France, some examples are *Léon Vivien, le Facebook de 1914* (a project initiated by le Musée de la Grande Guerre du Pays de Meaux), *le Défi des bâtisseurs* (Cathédrale de Strasbourg) or *le Théâtre sans animaux* (Théâtre du Rond-Point in Paris). First developed in the area of film and video, transmedia (or transmedia storytelling) consists in expanding a single universe through different contents/stories across multiple media/platforms with the aim of delivering more interactive and immersive experiences to users. Transmedia storytelling must be differentiated, on the one hand, from cross media which produces an adaptation of the same story across different forms of media and, on the other hand, from multimedia which is the diffusion of different contents on a single medium.

The main challenge of transmedia strategies is to engage and immerse different audiences in story that is told across all different platforms. Transmedia storytelling has the potential to create value for consumers by facilitating participation and proliferating potential touchpoints where engagement can occur. Transmedia stories have thus to offer to consumers the opportunity to immerse themselves or to be transported in their universe in order to ensure loyalty and long-term relationships with audiences.

To better understand transmedia experience in the cultural context, one needs thus to focus on narrative transportation as a prototypical form of experiential response with transmedia display. In this context, we explore how narrative transportation within the created universe is facilitated by transmedia storytelling. The present paper deals with measuring issues with the development of a narrative transportation scale. This measurement tool will namely enable to highlight causal relationships between narrative transportation and transmedia experience outcomes such as commitment and attachment towards the object of narration.

1. Theoretical framework

1.1. Transmedia consumption experience

The concept of transmedia was first suggested and defined by Jenkins in *Convergence Culture* (2006) as “*a process where integral elements of a fiction get dispersed systematically across multiple delivery channels for the purpose of creating a unified and coordinated entertainment experience*”. According to Jenkins (2006, 2009), transmedia entails a paradigm shift – the convergence paradigm which does not see new media as replacing old media, but rather that they will interact in more complex ways and reshape audience expectations about the entertainment experience. Thanks to convergence culture and new narratives, consumption moves from an individual and passive practice to a collective and active process through social interactions.

Besides convergence culture, previous research attempted to identify transmedia storytelling main components based on existing literature as well as on expert interviews (Bourgeon-Renault, Derbaix, Jarrier and Petr, 2015, 2016). Indeed the search for an accurate and consensual definition of transmedia storytelling has proved an enduring endeavor for professionals and researchers in this sector. Transmedia storytelling is sometimes considered to be a *process*, other times a *strategy* or a *user experience*. More specifically there are different views with regard to transmedia’s overall purpose: whereas transmedia designers assume that transmedia is part of the core product (e.g., transmedia narratives complete and improve the core product), marketers see transmedia more as part of the promotion strategy. However, everyone emphasizes the content and density of narratives scattered on multiple media platforms consistently and in a coordinated manner. Hoguet (2015) prefers the term *interactive narrative* and thus highlights the interactivity dimension of transmedia. Four major components of transmedia seem to be unanimous among researchers and professionals:

- *Richness of the fictional universe (contents, stories, characters, etc.)*

At the heart of transmedia, a story is told and exploited beyond the main plot. Messages, information, facts and statements must be woven into a narrative super-structure that adopts classic story arcs, metaphors, emotions, drama, conflict and resolution. The core architecture – and the thing that really sets transmedia apart from multimedia or cross-media – is the storyworld (Wood, 2013). Moreover, characters are essential story engines and are the driving forces of any story as story receivers will try to understand the experience of a story character, that is, to know and feel the world in the same way in order to immerse themselves in the story. More generally, the concept of transmedia refers to cultivating the imagination through characters and worlds in which they live.

- *Diversity of platforms, interfaces and rabbit holes*

In transmedia storytelling, elements of the story are scattered on diverse and multiple platforms and interfaces with the purpose of creating a unified entertainment experience, where each medium (Internet, television, smartphones, digital tablets, etc.) really makes its own contribution to the expansion of the story (Hoguet, 2015). Several touchpoints are thus needed in order to develop universe and related stories reach and attract the largest number of users. These touchpoints are called *rabbit holes*. Each bit of content can thus be approached independently and constitutes a point of entry into the transmedia universe. This diversity of platforms is quite similar to the principle of continuity/multiplicity evoked by Jenkins (2013).

- *Interactivity*

The fictional universe and the diversity of platforms are complemented by interactivity in transmedia strategies. Interactivity was defined as “*the degree to which two or more communication parties can act on each other, on the communication medium, and on the messages and the degree to which such influences are synchronized.*” (Liu and Shrum, 2002, p. 54). Scholars (Liu and Schrum, 2002; Song and Zinkhan, 2008; Voorveld, Neijens and Smit, 2011) recognized the multidimensional nature of interactivity and, commonly, three interactivity dimensions stand out: *active control* (voluntary and instrumental action that directly influence the controller’s experience); *synchronicity* or *responsiveness* (degree to which users’ input into a communication and the response they receive from the communication are simultaneous) and *communication* (ability for reciprocal communication between companies and users, and users and users). A transmedia platform is thus perceived as interactive by its user if it takes into account in real time its actions (input, selection of information, exploration, etc.), it rapidly delivers a response and allows it to communicate with the device or others users. When personalized, interactivity facilitates the processing of information and increases the sense of being socially connected to others (Liu and Shrum, 2009; Dholakia, Zhao, Dholakia and Fortin, 2011).

- *Temporality*

Time is not only a frame within which consumption takes place but an inherent feature of the consumption experience itself. Experience temporality can be an important factor for consumer attitudes, wellbeing, or willingness to consume (Woermann and Rokka, 2015). Temporality of transmedia storytelling refers to temporality of the story itself as well as the temporality of the user’s consumption experience (moment of consumption and duration of use). Time in a story can stretch, slow down, stop; it can be eluded, reassembled, and then deconstructed. Moreover the user most often controls how transmedia platforms work (advancing, pausing, rewinding, etc.). Revisit of transmedia platforms is possible: to discover all the contents of the fictional universe, on multiple interfaces, some users can spend lot of time browsing transmedia platforms and returning to them.

In this context of transmedia storytelling, our theoretical framework relies on the experiential paradigm (Holbrook & Hirschman, 1982) as well as on *Consumer Culture Theory* (Arnould & Thompson, 2005). More precisely, we support the perspective of Ilhan, Kozinets and Otnes (2013) who adapt the idea of transmedia storytelling by grounding it in consumer culture theory and initiate the study of transmedia consumption experience (*TCE*). These authors namely explore how consumers engage with interrelated narratives across a set of media platforms and how they co-create the

transmedia world. According to them, consumers do not necessarily engage with every media platforms but weave together different media elements to create a single, unique narrative and world (*patching* process). Particularly, their analysis shows that transmedia consumption experience involves four types of appropriation practices: 1) *mapping* (exploration of the terrain to establish and learn the elements, features, and details of transmedia universe), 2) *dipping* (consumption of the secondary texts or media via reading recaps, synopsis from blogs, forums or Wikipedia, or through other personal resources), 3) *digging* (consumers' first-hand experiences with the secondary text and intertextual popular titles to find clues, interpret mysteries, and make sense of the transmediated world), et 4) *stitching* (how consumers put clues together and make their own versions of transmedia worlds). The first three types of appropriation practices are comparable to appropriation operations involved in any immersion process depicted by Carù and Cova (2006) in the context of cultural services: *nesting* (feeling at home, finding comfort), *investigating* (identifying new products or activities to develop points of anchorage or control) and *stamping* (attribution of a specific meaning to the experience). The *stitching* practice (Ilhan, Kozinets and Otnes, 2013) reveals in some way that, in transmedia consumption experience, the experience is even more customized by consumers who can produce, and so co-create, their own stories and universe and identify themselves to the main protagonists and characters of these stories.

As at the core of transmedia consumption experience there is a universe, stories/narratives and characters, it seems relevant to focus on the concept of narrative transportation to better understand this particular experience. We assume that narrative transportation is an experiential response to narrative stimuli and thus a particular form of immersion.

1.2. Narrative transportation

Narrative transportation occurs whenever the consumer experiences a feeling of entering mentally a world evoked by the narrative because of empathy for the story characters and imagination of the story plot (Green, 2008; Green & Brock, 2000; Van Laer, De Ruyter, Visconti and Wetzels, 2014). Deighton, Romer, and McQueen (1989, p. 335) were the first to investigate the construct of narrative transportation by arguing that a story invites receivers into the action it portrays and, as a result, makes them lose themselves in the story. Narrative experience is thus a journey that leads an individual to a certain distance from his/her original and real world and transforms him/her (Gerrig, 1993). Green (2008) added that "*once individuals get lost in history, their attitudes and intentions can change to reflect this history*". Going a step further, Chronis (2008) argues that consumers are actively participating in narrative experiences by using their knowledge, struggling to fill narrative gaps, re-contextualizing their new experiences, and using their imagination to immerse in the story.

Some authors also highlight that once transported, consumers delve into different stories where they can experience another self and engage with the characters in the story (Batat et Wohlfeil, 2009; Gerrig, 1993). Iguarta and Paez (1998) show that identification with a character occurs when the individual develops a cognitive and emotional empathy (understanding the character and his feelings), he/she sees him/herself as being him/herself a protagonist of the story, and that he/she is able to imagine and anticipate the rest of the story. Specifically, Sanchez Castillo and Galán (2016) consider that the identification with characters depends on the perceived similarity (feelings, gender and social class) between the viewer and the character, and on the physical appearance and psychology of the latter. However, Sestir and Green (2010) believe that narrative transportation can occur even without identification, and that identification may also exist without narrative transportation. Nonetheless, these two mechanisms temporarily activate the salient features of the characters' personality in the individual's self-concept.

Reviewing previous works on the construct, Van Laer, De Ruyter, Visconti and Wetzels (2014) identified in the literature three relevant features in narrative transportation process: (1) narrative transportation requires that consumers process stories – the acts of receiving and interpreting; (2) story receivers become transported through two main components: empathy – which implies that story receivers try to understand the experience of a story character, that is, to know and feel the world in the same way – and mental imagery – story receivers generate vivid images of the story plot, such that

they feel as though they are experiencing the events themselves; (3) when transported, story receivers lose track of reality in a physiological sense. In the same way, Sempé (2015) conceptualized narrative transportation as a narrative experience which is based on two dimensions: convergence (the individual confronts the stories and authenticates them) and resonance (the individual comes into resonance with the imaginary, symbolic and identity elements of the story), thus confirming the importance of identification and imagination in the narrative transportation definition. Table 1 summarizes previous research on narrative transportation and its main components.

Table 1 – Synthesis of research on narrative transportation and its components

Authors	Construct	Context	Definition/Conceptualization
Deighton, Romer and McQueen (1989)	Narrative persuasion	Television ads	Story invites receivers into the action it portrays and, as a result, makes them lose themselves in the story.
Gerrig (1993)	Narrative experience	Books, novels	Narrative experience is a journey that transports the individual. He/she becomes a traveler who carries out certain actions. His/her destination leads him/her to a certain distance from his/her original and real world, which temporarily becomes inaccessible to consciousness. He/she returns to reality somewhat changed by this journey.
Iguarta & Paez (1998)	Identification with a character	Movies	Identification with a character is the result of a cognitive empathy (understanding the character), an emotional empathy (sharing the character's feelings), the ability to imagine and anticipate the rest of the story, and perception of oneself as the protagonist of the story.
Green & Brock (2000)	Narrative transportation and narrative persuasion	Public narratives	Through narrative transportation, narratives change the beliefs of the individual. When he/she is transported into the story, he/she feels a greater affinity or empathy towards the protagonists, even when it is clearly pointed out to the individual that the narrative is fictional. Narrative transportation moderates the influence of narration on attitude.
Green (2008)	Narrative transportation	Media	Process by which individuals enter mentally a world evoked by a story, a narrative. Once individuals get lost in the story, their attitudes and intentions can change to reflect this story.
Chronis (2008)	Narrative experience	Heritage sites	Individuals are actively participating in shaping the experience by using their prior familiarity with the story, struggling to fill narrative gaps, re-contextualising their new experiences, and using their imagination.
Batat & Wohlfeil (2009)	Narrative transportation	Movies	Process by which the consumer actively seeks to be taken away from one's everyday life into different narrative worlds, where one could experience a different self and engage empathetically with media characters like real friends. This private engagement is further enhanced through out-of-text intertextuality by which the consumer connects the movie to one's own personal life experience.
Sestir & Green (2010)	Identification and narrative transportation	Movies (film clips)	Transportation can occur without identification, and identification can occur in the absence of transportation, although the latter is less likely. Identification and transportation may independently and/or additively lead to activation of character traits within the self-concept of the viewer.
Van Laer, De Ruyter, Visconti and Wetzels (2014)	Narrative transportation	Meta-analysis	First, narrative transportation requires that consumers process stories – the acts of receiving and interpreting; second, story receivers become transported through two main components: empathy and mental imagery; third, when transported, story receivers lose track of reality in physiological sense.

Sempé (2015)	Perceived narrative experience	Tourist places and attractions	Narrative experience is based on two dimensions: convergence (the individual confronts the stories and authenticates them) and resonance (the individual comes into resonance with the imaginary, symbolic and identity elements of the story).
Sanchez Castillo and Galan (2016)	Identification with a character	Drama series	Identification with the character depends on five elements: the perceived similarity between the character and the viewer, the character's physical appearance, gender correspondence, social class correspondence, and the character's psychological characteristics.

As narrative transportation is a form of experiential response to narratives, this construct is similar to other constructs, such as absorption, optimal experience or flow, or immersion (Van Laer, De Ruyter, Visconti and Wetzels, 2014) but some distinctions can be highlighted:

- Absorption (Tellengen and Atkinson, 1974) refers to a personality trait or general tendency to be immersed in life experiences whereas transportation is an engrossing temporary experience (Sestir and Green, 2010);
- Flow (Csikszentmihalyi and Csikszentmihalyi, 1992) is a more general construct (i.e., people can experience flow in a variety of activities) whereas transportation specifically entails empathy and mental imagery;
- Finally, immersion (Wang and Calder, 2006; Carù and Cova, 2007) is primarily an experiential response to aesthetic and visual elements of images whereas narrative transportation relies on a story with plots and characters, features that are not present in immersion.

As mentioned before, the main objective of this research is to develop a narrative transportation scale in the context of transmedia consumption experience. Even though the construct of narrative transportation has been the focus of studies in various contexts during the last decades (cf. Table 1), digital technologies (largely used by transmedia storytelling) provide a fertile ground for a study encompassing all the dimensions of the concept, not necessarily taken into account simultaneously in former works. The construction of this new narrative transportation scale for transmedia experience will thus exploit and complete previous studies emphasizing the concept and will rely on existing scales. Moreover, relying on an emic approach (Ford, West and Sargeant, 2015), our scale will be built specifically in the French context as we assume that felt and perceived transportation is contextually rooted to each particular culture.

2. Construction of a narrative transportation scale

The present study follows a structured scale development procedure (as suggested by Churchill, 1979; DeVellis, 2003) illustrated in Figure 1. Dimensions of narrative transportation and initial pool of items are based on previous research, as well as an exploratory study (Bourgeon-Renault, Derbaix, Jarrier et Petr, 2015; 2016) intended to understand transmedia experience in a cultural context and the process of narrative transportation. A quantitative study has then been implemented. This first data collection aims at conducting principal component analysis. This analysis reveals the scale structure and estimates reliability.

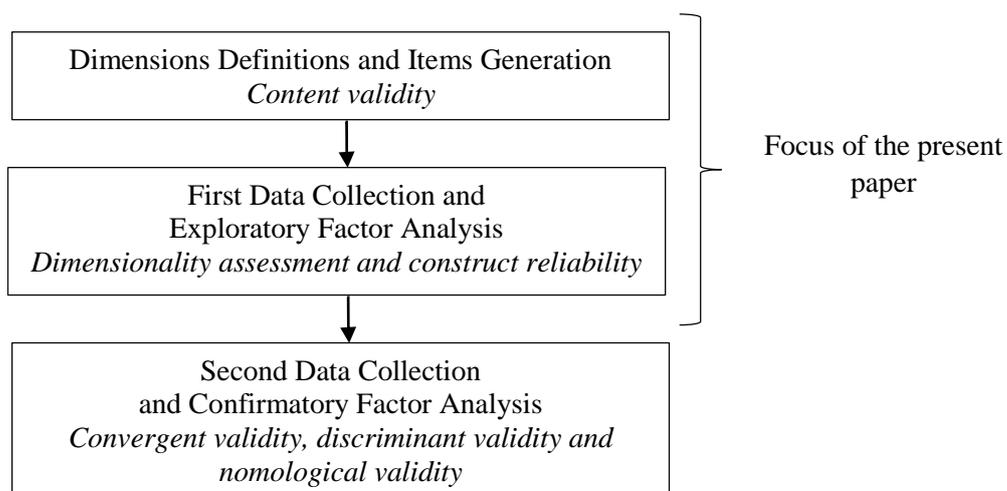


Figure 1. – Scale development procedure

2.1. Narrative transportation: Items generation and identification of dimensions

2.1.1. Previous Research

Table 2 presents a summary of existing scales for transportation construct or specific dimension of the construct such as identification with characters. The French narrative transportation scale of Sempé (2015) has been developed and used in the specific heritage context (narration about a city) and only retain two dimensions of transportation. Other anglo-saxon scales do not retain a same number of components to measure narrative transportation. That of Iguarta and Paez (1998) do not directly provide a holistic measure of transportation. It only apprehends one of its dimension (identification with characters). Transportation scale proposed by Green and Brock (2013) is more holistic because it captures three major components of the phenomenon, but only deals with reading transportation. Yet, reading practices are renewed by the proliferation and dematerialization of media, and narrative transportation may also occur when viewing a film or attending a live performance. Therefore, we conducted a qualitative and exploratory research to confirm the dimensions of narrative transportation and generate items for a new scale of the concept that would be suitable to the cultural and digital fields.

Table 2 – Existing scales of narrative transportation

Autors and scales	Dimension and items
Identification with characters (Iguarta and Paez 1998)	<p>I like the way of being or acting of the protagonists</p> <p>I felt emotionally involved with the feeling of the protagonists</p> <p>I felt as if I were one of the main characters</p> <p>I imagined how I would act if I was in the place of the protagonists</p> <p>I tried to carefully observe each of the actions of the protagonists</p> <p>I thought I looked alike or was very similar to the protagonists</p> <p>I was worried about what was happening to the protagonists</p> <p>I understood the way of acting, thinking, or feeling of the protagonists</p> <p>I have experienced the emotional reactions of the protagonists</p> <p>I thought I would like to look or act as the protagonists</p> <p>I tried to imagine the feelings, thoughts, and reactions of the protagonists</p> <p>I felt as if I had really lived the story of the protagonists</p> <p>I understood the feelings and emotions of the protagonists</p> <p>I felt like I was a part of the story</p> <p>I was able to anticipate what was going to happen to the protagonists</p> <p>I tried to see things from the point of view of the protagonists</p> <p>I felt identified with the protagonists</p>
Transportation (Green and Brock, 2013)	<p style="text-align: center;">Cognitive</p> <p>While I was reading the narrative, I could easily picture the events in it taking place</p> <p>While I was reading the narrative, activity going on in the room around me was on my mind</p> <p>I could picture myself in the scene of the events described in the narrative</p> <p>I was mentally involved in the narrative while reading it</p> <p>After the narrative ended, I found it easy to put it out of my mind</p> <p>I wanted to learn how the narrative ended</p> <p style="text-align: center;">Emotionnal</p> <p>The narrative affected me emotionally</p> <p style="text-align: center;">Imaginative</p> <p>I found myself thinking of ways the narrative could have turned out differently</p> <p>I found my mind wandering while reading the narrative</p> <p>The events in the narrative are relevant to my everyday life</p> <p>The events in the narrative have changed my life</p>

	I had a vivid mental image of [character name]
Perceived narrative experience (Sempé, 2015)	<p>Convergence</p> <p>Il n'y a pas d'in vraisemblance dans les récits racontés par X Je juge comme authentiques toutes les histoires racontées par la ville de X Tous les récits portés par la ville de X sont parfaitement vraisemblables Je converge pleinement avec les discours et récits portés par X Il y a une grande authenticité dans l'histoire racontée par X aux touristes et aux habitants Ce que raconte cette ville converge vers ma propre définition et vision de X</p> <p>Résonance</p> <p>Tout ce que nous raconte cette ville résonne profondément en moi La dimension symbolique racontée par X me porte dans une totale harmonie avec cette ville Les récits portés par la ville de X redonnent du sens à ma vie Tous les discours et histoires portés par la ville de X me portent à l'enchantement, comme un sortilège Les récits et légendes racontés par X me mènent dans un état de communion parfaite Les récits portés par la ville de X me plongent dans un monde féérique Je me sens dans un monde magique porté par l'univers des récits de X Je me sens en totale résonance avec les messages et histoires émis par la ville de X Les discours et récits portés par X sont en accord parfait avec moi</p>
Transportation (Appel, Gnambs, Richter and Green 2015) – Short form	<p>Cognitive</p> <p>I could picture myself in the scene of the events I was mentally involved in the narrative while reading it</p> <p>General</p> <p>I wanted to learn how the narrative ended</p> <p>Emotional</p> <p>The narrative affected me emotionally</p> <p>Imaginative</p> <p>While reading the narrative I had a vivid image of (character name)</p>

2.1.2. Exploratory research – introspective review (results)

A qualitative methodological approach was implemented. Thirty-six introspective reviews of students who experienced the transmedia project “*Le Défi des Bâtisseurs*” were collected. These students are at the master level in the areas of arts and culture, aged between 21 and 42 years, and thus familiar with the cultural field. Informants were free to experience the transmedia project in the computer room of the university or at home. A semi-directive interview guide was provided to informants. We carried out two lexical analyses of the data: a vertical analysis and then a horizontal analysis. Our epistemological posture is based on hypothetic-deductive reasoning. A thematic analysis grid was developed based on the literature review and built on the following themes: experience and narrative transportation experienced with a transmedia project, losing track of reality and time, and intentions towards the cultural object, transmedia projects or platforms experienced in particular, and transmedia storytelling in general.

The thematic analysis of the introspective stories helped to bring subcategories which confirm dimensions identified in the literature review:

- *Projection in the narrative universe*: the individual easily enters in the story universe and feels attracted or even absorbed in it;
- *Development of mental imagery*: people generate vivid and precise images of the story;
- *Identification and empathy with characters*: the individual identifies and feels empathy with the characters;
- *Loss of the notion of reality and time*: the appropriation of the recreational universe by the individual and his immersion lead him to lose the notion of reality and time that can be manifested in physiological reactions.

These results converge partially with the dimensions of several existing scales (Iguarta and Paez, 1998; Green and Brock ; 2008 ; Appel, Gnambs, Richter and Green, 2015).

2.1.3. Initial item generation

Identification of recurring terms helped to generate items. The following table shows the initial set of 18 items of the narrative transportation scale.

Table 3 – Initial items generation

Dimension	Items
Projection in the narrative universe	J’entre facilement dans l’histoire Je me projette dans un autre univers Je me sens aspiré(e) dans un autre monde Je suis captivé(e) par le récit
Development of mental imagery	Je me représente facilement les scènes et événements décrits par le récit J’imagine le cours des événements J’essaie de prévoir le dénouement Je garde une image très vive à l’esprit des lieux et des personnages
Identification and empathy with the characters	Je m’identifie au personnage Je me reconnais dans le personnage Je comprends la façon de penser des personnages et leurs ressentis Je m’inquiète pour le personnage lorsqu’il doit faire face à des difficultés

Loss of the notion of reality and time	Je perds le fil du temps Je ne me rends pas compte du temps qui s'écoule Je me sens coupé(e) du lieu dans lequel je me trouve Durant un instant, je ne sais plus où je suis Durant un instant je ne suis plus moi-même Je m'évade de ma vie quotidienne
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2.2. Scale development and validation procedure

2.2.1. First Data Collection

The initial set of items was integrated in a questionnaire which included our narrative transportation scale. Viewers and users from a transmedia project were asked about their experience of a transmedia project proposed by The Théâtre des Champs Elysées. This institution introduced recently a new production "The return of Ulysses to his homeland" of Claudio Monteverdi. This Opera was directed by Emmanuelle Haim to head of the Concert of Astrée and Marianne Clément to the staging. A rich narrative universe was developed and gave birth to a transmedia project (Penelope's Odyssey).

Multiple points of entries in the narrative universe were proposed and made accessible in situ and online. Opera viewers were proposed enriched booklets, animated posters and illustrations, could taste the cocktail of the gods or smell Penelope's ointment and fragrance. Online users could browse two blogs (Penelope's, and an intercultural blog on the discovery of Ulysses), watch a dedicated Youtube Channel, or subscribe to the protagonists' social media profiles (Facebook, Twitter and Instagram accounts).

The questionnaire was administered to students, to subscribers of the Théâtre des Champs Elysées who attended the opera representations in Paris, and also to subscribers of the Dijon Opera (structure which co-produced the show and also proposed the transmedia system during two performances).

The questionnaire included five parts: familiarity with cultural practices and theatre, propensity to adopt technologies in everyday life and for cultural practices, immersion and narrative transportation, users' intentions, and finally their profile.

2.2.2. Exploratory factor analysis

Our sample is composed of 110 individuals. Exploratory factor analysis (principal component analysis) is implemented, the scale structure of the narrative transportation construct is presented and its reliability estimated. These analyses were carried out with the SPSS 18 software.

Prior to the principal components analysis of the narrative transportation scale, we previously checked that our data distribution allowed factorization.

The value of the test of Kaiser, Meyer and Olkin is greater than 0.5 (.915), and the Bartlett test result is significant (p-value <.000). As a result, factorization is possible.

We proceeded to items reduction and finally reached a scale in 3 dimensions supported by 14 items with percentage of variance explained of 71,96% (53,61% for the first factor, 9,94% for the second one and 8,41% for the third one). The reliability of each dimension was assessed through coefficient alpha. These first results are presented in Table 4.

Table 4 – Pattern Matrix

Dimension	Items	Factor 1	Factor 2	Factor 3
Loss of the notion of reality and time	Je me sens coupé(e) du lieu dans lequel je me trouve	.911	-.044	0.043
	Durant un instant je ne suis plus moi-même	.797	-.264	-.302
	Je perds le fil du temps	.782	.042	-.117
	Je ne me rends pas compte du temps qui s'écoule	.781	.200	.190
	Durant un instant, je ne sais plus où je suis	.742	-.002	-.156
	Je me projette dans un autre univers	.635	.343	.115
	Je me sens aspiré(e) dans un autre monde	.621	.249	-.116
Projection in the narrative universe and Development of mental imagery	Je me représente facilement les scènes et événements décrits par le récit	-.033	.860	-.013
	J'entre facilement dans l'histoire	.024	.777	-.107
	Je garde une image très vive à l'esprit des lieux et des personnages	.081	.653	-.191
	Je suis captivé(e) par le récit	.204	.634	-.102
Identification and empathy with the characters	Je m'identifie à un ou certains personnages	-.048	.155	-.888
	Je me reconnais dans un ou certains personnage(s)	.011	.182	-.834
	Je m'inquiète pour le personnage lorsqu'il doit faire face à des difficultés	.312	.006	-.649
	14 items	7 items	4 items	3 items
Variance explained	71,96%	53,61%	9,94%	8,41%
Alpha		.92	0.84	.88

Conclusion

This research aimed at better defining narrative transportation that is at the heart of the transmedia consumption experience and to develop a scale to measure it.

On a theoretical level, a synthesis of research on narrative transportation and its components has been proposed.

On a methodological level, different existing scales have been discussed. Results from a qualitative approach has confirmed four dimensions of narrative transportation: projection in the narrative universe, development of mental imagery, identification and empathy with characters and loss of the notion of reality and time. Items have been generated to measure narrative transportation, and a new reliable scale has been developed.

On a managerial level, this new scale will enable cultural institutions to identify profiles of users with a high or low degree of narrative transportation, as well as which platforms that contribute more to this process. Then, content dissemination through diverse entry points may be optimized and audience better targeted.

This research has some limitations. A second data collection is needed to confirm the scale stability and discriminant validity with other constructs (absorption, flow and immersion).

Future avenues for research are proposed. First, it would be interesting to measure the impact of narrative transportation on the individual's commitment and attachment towards the narrative universe and cultural object. Also, this research could be replicated in order to measure how narrative transportation could impact on the consumers' attachment and loyalty towards a product, a service, a brand, an organization, etc., in other fields that would not especially be related to culture and digital consumption. Finally, causal relationships between the individual's characteristics (age, familiarity with the cultural object, technology adoption propensity), the transmedia system specificities and the degree of narrative transportation felt by the user could be tested.

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