

# DOES PHYSICAL IMMERSION HELP ADULT VISITORS PROCESSING WORKS OF ART EXHIBITED IN A MUSEUM?

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## Abstract

Given the popularity of spectacular events that produce physical immersion, museums are tempted to exhibit their collections in rooms where visitors are plunged in such immersion. A comparison of three rooms displaying works of art in the traditional manner, but one of which having an installation that induces physical immersion, showed that such immersion does not lead to an increase in the rate of treatment of the works, nor does it increase the fascination for them, i.e. psychological immersion.

**Keywords:** Museums, works of art, adults, physical immersion, psychological immersion.

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## 1. Introduction

Over the last twenty years or so, most Western countries have seen a decrease in the funding that the State grants them (Bell, 2012; Bordonaba, 2011; Hervé, Mencarelli and Puhl, 2019 \*<sup>1</sup>). They must therefore at all costs improve their revenues, particularly by a marked increase in attendance (Brouillette, 2013; Mairesse, Tobelem and Vessely, 2018\*). Given the current popularity of grandiose immersive shows produced through new technologies (Hansen and Mossberg, 2013; Jancert, 2015; Montpetit, 1996\*), museums are tempted to introduce immersive environments into their exhibition rooms (Belaën, 2002; Belaën, 2003; Msica, 2019\*). However, because of the high cost of these environments, they are hesitant and want to ensure their effectiveness (Casula, 2016; Lemarchand, 2016; Swaboda, 2019; Venuat, 2019\*).

In 2017, we undertook a research program to test this effectiveness<sup>2</sup>, specifically to identify the potential effects of physical immersion on an adult's visiting experience. We were particularly interested in two of these effects: the enrichment of the visitor experience and its intensification.

## 2. Experience enrichment

The greater the number of works a visitor pays attention to and is interested in, the richer the visitor's experience potentially is (Black, 2005; Dufresne-Tassé, O'Neill, Sauvé and Marin, 2014; Hein, 1998; Hooper-Greenhill, 1994). Enrichment can take at least the two following forms. The information gathered by the visitor is added to the knowledge and experiences of her/ his personal universe; it broadens or modifies its meaning. The information may also appear new to the visitor and may be the starting point for curiosity and discovery, which may lead to the development of a dynamic interest.

## 3. Experience intensification

Intensification usually means that the visitor's relationship with the work of art is strong. It takes the form of fascination, also called psychological immersion (Carr, 2003; Dufresne-Tassé, 2014; Jantzen, 2013). The visitor is captivated by the work, she/he observes it, accepts the sensations, emotions, and desire that are born in him, but also the memories, ideas, or reflection it evokes. In other words, the treatment given to the work is complex and requires the intervention of the visitor's cognitive, imaginary and affective functioning in several of their forms.

<sup>1</sup>References marked with an (\*) are only examples, as the subject has been treated on many more publications.

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#### **4. Hypotheses**

1. In an exhibition room that plunges the works of art and the visitors in a physical immersion, a greater number of works of art is dealt with than in conventional rooms (enrichment of the experience).

2. Visitors more often develop psychological immersion (fascination) in a room with physical immersion than in a conventional room (intensification of the experience).

Only quantitative data corresponding to these hypotheses will be presented here. This choice is justified, as they provide a backdrop against which the fine information offered by the qualitative research could be inserted.

#### **5. Research context**

Three rooms in a fine arts museum of a major North American city. These rooms display respectively 31, 30 and 29 works - European paintings and sculptures - from the same period, 1850-1900. The first one contains works from the Impressionist movement, the second, works from the Romantic movement, and the third, works from the Academic one. The display, which is similar in all three rooms, is roughly of the "white cube" type, the paintings being hung on the walls, while the sculptures, placed on pedestals, are distributed in the center or around the space. The second room (the immersive one) plunges paintings and sculptures, but also visitors, into the context of a summer night. This effect is produced by an "installation" projected onto the ceiling and the walls, though saving the works of art.

#### **6. Sample**

Thirty-five adults of both sexes, aged 25 and 64, with at least a bachelor's degree or the equivalent, who attend museums an average of five times a year. This last characteristic is important, since the attention of adults who do not visit museums often is for a good part of their visit divided between discovering the museum, how it works, and discovering what is exhibited.

#### **7. Ways of collecting information from visitors**

1. Information regarding Experience enrichment (hypothesis 1). The researcher notes in each of the three rooms the works in front of which the visitor stops for at least 10 seconds. Such a stop is sufficient to make a first observation of a work of art exhibited in a museum room, or to read a few lines of the accompanying label.

2. Information on experience intensification (hypothesis 2). Once the visit has ended in the three rooms, the researcher tells the visitor what he means by psychological immersion and asks her/him to repeat in his company the journey he made in each room and to indicate, if it is appropriate, the works of art in front of which he felt immersion.

#### **8. Results**

Neither hypothesis is confirmed.

1. The immersive room, i.e. the one which physically immerses works and visitors in the context of a summer night, does not elicit a higher number of treatments of the works than the other two rooms. Indeed:

a) The average number of treatments carried out by the 35 visitors about the works on display is no eater in the immersive room than in the other two rooms (see Table 1). On the contrary, it is smaller, but the differences between Room 2 and Rooms 1 and 3, evaluated by means of T-tests, are not significant at the .05 level;

b) Similarly, the average number of treatments related to the paintings is not greater in the immersive room than in the other two ones (see table 2). On the contrary, it is smaller, but the differences between room 2 and the other two rooms are not significant at the .05 level;

c) However, the average number of treatments awarded to the sculptures is significantly smaller in the immersive room than in the other two rooms (see Table 3) as in this case the results of the T-tests are significant at the .05 level.

2. What was seen to occur with the treatment of the works of art is repeated with the psychological immersion, that is to say with fascination, which ensures a complex and beneficial treatment for the visitor of the works that she/he is looking at. Indeed:

a) The average number of psychological immersions experienced by the 35 visitors is no greater in the room where there is physical immersion than in the other two rooms (see Table 4). On the contrary, it is smaller, but the differences between the immersive room and the others, evaluated by means of T-tests, are not significant at the .05 level;

b) In the same sense, the average number of psychological immersions experienced in contact with the paintings is not greater in the physical immersion room than in the other two ones (see Table 5). On the contrary, it is smaller, but the differences between room 2 and the others are not significant at the .05 level;

c) However, the average number of psychological immersions experienced in contact with the sculptures is significantly lower in the physical immersion room than in the other two rooms (see Table 6). Indeed, in this case, the results of the T-tests indicate differences significant at the .05 level.

## 9. Discussion

It is clear that a museum room that immerses adult visitors in a physical immersion, specifically in the atmosphere of a summer night, does not generate a higher rate of treatments of the works of arts than similar rooms without an immersive device.

It is also clear that such a room does not particularly favor psychological immersion, i.e. a complex relationship with the works which strongly involves the cognitive, affective and imaginary functioning of the visitors.

It is finally obvious that such a room can even hinder contact with a particular type of work, sculptures for instance, as well as the psychological immersion that visitors may experience while observing them.

We see two possible explanations for these observations: 1) The physical immersion is felt so strongly, i.e. the impression to wander in a summer night, that the visitors are completely inhabited by it, the sensations, emotions, pleasure, memories and even ideas it induces, that this is enough for them and the works of art lose their importance; 2) The more or less strong impression of living a summer night moment conflicts with the works on display, either with their characteristics, such as their colors or shapes, which the visitors perceive at first sight, or with the meaning that their subject takes on for them, and the affective reactions that this meaning provokes.

The accuracy of these explanations could probably be verified by analyzing the "Thinking Aloud" of the visitors, i.e. their production of meaning as they wander through the rooms of a museum and take an interest in the works on display.

*Table 1. Comparison of the total number of treatments of works produced in an immersive room and in two other rooms.*

<b>Room 1 : Impressionist works</b>	<b>Room 2 : (immersive) Romantic works</b>	<b>Room 3 : Academic works</b>
N. of works : 31	N. of works : 30	N. of works : 29
Mean : 18.38	Mean : 15.33	Mean : 16.44
$\sigma$ : 5.71	$\sigma$ : 5.45	$\sigma$ : 5.30
T room 2 / room 1 : 0.018		
T room 2 / room 3 : 0.451		
(critical value of T .05 for 59 df = 2.003 ; for 57 df = 2.004)		

*Table 2. Comparison of the paintings treatments in the immersive room and in the two other rooms.*

<b>Room 1 : Impressionist works</b>	<b>Room 2 : (immersive) Romantic works</b>	<b>Room 3 : Academic works</b>
N. of paintings : 25	N. of paintings : 23	N. of paintings : 22
Mean : 18.76	Mean : 16.60	Mean : 16.81
$\sigma$ : 5.79	$\sigma$ : 5.50	$\sigma$ : 5.90
T room 2 / room 1 : 0.097		
T room 2 / room 3 : 0.451		
(critical value of T .05 for 46 df = 2.012 ; for 43 df = 2.016)		

*Table 3. Comparison of the sculptures treatments in the immersive room and in the two other rooms.*

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<b>Room 1 : Impressionist works</b>	<b>Room 2 : (immersive) Romantic works</b>	<b>Room 3 : Academic woks</b>
N. of sculptures : 6 Mean : 16.83 $\sigma$ : 5.56	N. of sculptures : 7 Mean : 11.14 $\sigma$ : 2.41	N. of sculptures : 7 Mean : 15.28 $\sigma$ : 2.69
T room 2 / room 1 : 2.332 T room 2 / room 3 : 2.948 (critical value of T .05 for 11df = 2.201 ; for 12 df = 2.179)		

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*Table 4. Comparison of the total number of immersions produced in an immersive room and in two other rooms.*

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<b>Room 1 : Impressionist works</b>	<b>Room 2 : (immersive) Romantic works</b>	<b>Room 3 : Academic works</b>
N. of works : 31 Mean : 4.03 $\sigma$ : 4.07	N. of works : 30 Mean : 2.60 $\sigma$ : 3.48	N. of works : 29 Mean : 3.93 $\sigma$ : 3.31
T room 2 / room 1 : 1.537 T room 2 / room 3 : 0.528 (critical value of T .05 for 58 df = 2.003 ; for 57 df = 2.004)		

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*Table 5. Comparison of the number of immersions produced in front of the paintings exhibited in the immersive room and in two other rooms.*

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<b>Room 1 : Impressionist works</b>	<b>Room 2 : (immersive) Romantic works</b>	<b>Room 3 : Academic works</b>
N. of paintings : 25 Mean : 4.00 $\sigma$ : 4.38	N. of paintings : 23 Mean: 3.21 $\sigma$ : 3.68	N. of paintings : 22 Mean : 4.59 $\sigma$ : 3.49
T room 2 / room 1 : 0.140 T room 2 / room 3 : 0.683 (critical value of T .05 for 46 df = 2.012 ; for 43 df = 2.013)		

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*Table 6. Comparison of the number of immersions in front of the sculptures exhibited in the immersive room and in two other rooms.*

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<b>Room 1 : Impressionist works</b>	<b>Room 2 : (immersive) Romantic works</b>	<b>Room 3 : Academic works</b>
N. sculptures : 6 Mean : 4.16 $\sigma$ : 2.72	N. sculptures : 7 Mean : 0.08 $\sigma$ : 0.17	N. sculptures : 7 Mean : 1.85 $\sigma$ : 0.89
T room 2 / room 1 : 3.66 T room 2 / room 3 : 5.145 (critical value of T .05 for 11 df = 2.201; for 12 df = 2.179)		

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## References

- Belaën, F. (2002). *L'expérience dans les expositions scientifiques et techniques à scénographie d'immersion*. Dijon: Thèse doctorale en Sciences de l'information et de la communication déposée à l'Université de Bourgogne.
- Belaën, F. (2003). Les expositions d'immersion. *La Lettre de l'OCIM, No 86*, 27-31.
- Bell, F.W. (2012). *How Are Museums Supported Financially in the U.S.?* Washington: United States Department of State Bureau of International Information Programs.
- Black, G. (2005). *The Engaging Museum. Developing Museums for Visitor Engagement*. Abingdon: Routledge.
- Bordonaba, L. (2011). Les musées et l'argent. Entretien avec Hervé Barbaret, administrateur général de l'établissement public du musée du Louvre. *Cahiers philosophiques, No 124*, p. 107-122.
- Brouillette, A. (2013). *Exposition immersive: son effet sur l'implication et la fidélisation du visiteur de musée*. Trois-Rivières, QC: Mémoire de maîtrise en loisir, culture et tourisme déposé à l'Université du Québec à Trois-Rivières.
- Carr, D. (2003). *The Promise of Cultural Institutions*. Walnut Creek: AltaMira Press.
- Casula, F. (2016). *Quels sont les éléments immersifs d'une exposition? Étude de la réception de l'exposition Osiris, mystères engloutis d'Égypte à l'Institut du monde arabe*. Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.
- Dufresne-Tassé, C. (2014). Experiencia intensa e experiencia de imersão: Relatório de observações diretas. *Museion, Revista do Museu e Arquivo Histórico La Sallem, 19*, 27-42.
- Dufresne-Tassé, C., O'Neill, M.C., Sauvé, M. et Marin, D. (2014). Un outil pour connaître de minute en minute l'expérience d'un visiteur adulte. *Revista Musologia & Interdisciplinaridade, 3*, 6, 187-204.
- Hansen, A.H. and Mossberg, L. (2013). Consumer Immersion: A Key to Extraordinary Experiences. In J. Sundbo and F. Sorensen (Eds.), *Handbook on the Experience Economy* (p. 209-228). Cheltenham, UK: Edward Elgar Publishing.
- Hein, G. (1998). *Learning in the Museum*. London: Routledge.
- Hervé, F., Mencarelli, R. et Puhl, M. (2019). L'évolution de la structure de financement des organisations muséales: éclairage sur les rôles des *endowment funds*. *Management international, vol. 15*, 3, p. 45-55.
- Hooper-Greenhill, E. (1991). *Museum and Gallery Education*. Leicester: Leicester University Press.
- Hooper-Greenhill, E. (1994). *Museums and their Visitors*. London: Routledge.
- Jancert, C. (2015). *La réalité virtuelle au service d'une meilleure immersion des visiteurs d'exposition?* Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.
- Jantzen, C. (2013). Experiencing and Experiences: A Psychological Framework. In J. Sundbo and F. Sorensen (Eds.), *Handbook on the Experience Economy* (p. 146-171). Cheltenham, UK: Edward Elgar Publishing.
- Lemarchand, A. (2016). *Dispositifs multimédias au sein d'une exposition: la scénographie virtuelle favorise-t-elle l'immersion? Effets et limites d'une expérience muséale*. Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.
- Mairesse, F., Tobelem, J.M. et Vessely, P. (2018). Musées et bibliothèques : vers de nouveaux modèles économiques et de gestion. Dans N. Yan (Ed.), *Modèles économiques des musées et bibliothèques* (p. 51-86). Paris: La Documentation française.
- Montpetit, R. (1996). Une logique d'exposition populaire : Les images de la muséographie analogique. *Public et Musées, 9*, 1, 55-103.
- Msica, I. (2019). *L'immersion par les odeurs au sein des monuments historiques. Révolution ou préjugé?* Paris: Mémoire de recherche en muséologie présenté à l'École du Louvre.
- Swaboda, C. (2019). *Le rôle du contexte d'exposition dans l'appréciation des œuvres par les visiteurs*. Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.
- Venuat, C. (2019). *Au son de l'immersion, résonne le bien-être. Étude de l'expérience intense, sonore, visuelle au Musée des Musiques populaires de Montluçon (MuPop)*. Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.