

# **A Comparative Approach to Audience Engagement: Evidence from a Mixed Reality Art Experience**

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## **Abstract**

Arts engagement is shaped by personal dispositions, artworks, and context, yet audience studies rarely employ empirical methods capable of capturing these interactions. This article introduces a novel framework for examining engagement, based on research conducted in the UK in 2019. Thirty participants completed pre- and post-experience questionnaires for a Mixed Reality art project. The design combined within-person and between-person comparisons alongside the qualitisng of quantitative data – approaches seldom applied in audience research. This multi-layered perspective enabled the identification of some causal mechanisms underlying engagement, showing how personal context interacts with artistic and technological features. The findings demonstrate that real-world audience experiences, when systematically analysed, can generate credible generalisations about the phenomenon of engagement. By integrating insights from the humanities, psychology, and neuroscience, the study addresses a methodological gap and advances audience research beyond descriptive accounts. The article thus offers both an analytical framework for comparative studies of engagement and critical reflections relevant to cultural policy evaluating the impact of publicly funded arts projects.

**Keywords:** Audience engagement, Audience development, Audience studies, Arts engagement, Mixed methods, VR

## **Introduction**

Experience, including aesthetic or arts experience, depends on the interplay between the individual, the artwork, and its context. This perspective is shared across multiple disciplines: cultural policy and media studies (Belfiore and Bennett, 2007; Livingstone, 2007: 12), empirical aesthetics (Leder and Nadal, 2014), psychology (Dewey, 1934/1980: 256), neuroscience (Feldman Barrett, 2017: 16), and Human-Computer Interaction (O'Brien, 2016: 14). Despite this broad recognition, the field of arts audience research remains dominated by theoretical approaches, with limited integration across disciplines (Walmsley, 2019: 4). Scholars have called for methodological innovation (Barker, 2006; Sauter, 2010; Mathieu et al., 2016; Sedgman, 2019), and stronger connections between theory and practice (Baxter et al., 2013; Brown, 2017).

Audience experiences of art are complex, as the inner processes of engagement are dynamic, non-linear, and deeply interconnected. Cognitive science provides strong support for theories of active spectatorship, challenging traditional notions of passive audiences and detached observation (McConachie, 2008). As Walmsley (2019: 66) observes, 'the majority of audience researchers [...] accept that sitting quietly in a darkened auditorium does not equate to a passive experience'. Both the content and form of artworks play a crucial role in sustaining engagement, often prompting audiences to shift their perception, imagination, or even bodily response (Berleant, 1991: 15). Attempts to generalise about audience experience without considering the structure and qualities of a specific artwork risk causing misleading conclusions (Schoenmakers and Tulloch, 2004: 19). Equally, overlooking the personal context of audience members limits our understanding of how art is actually experienced.

Although qualitative studies often capture post-experience reflections, they rarely compare the components and outcomes of experiences across individuals. Conversely, contemporary neuroscience can track real-time internal processes during engagement but seldom considers their meaning for participants. To address this gap, this study employs a multilevel mixed design (Creswell, 2015; Teddlie and Tashakkori, 2009), integrating qualitative and quantitative data into a single analytical framework. This approach enables the investigation of how the audience's personal context, cognitive reflections, and the artwork's characteristics interact to shape engagement. Comparing responses to the same artwork across individuals highlights variations in how audiences experience directed artistic encounters, offering both general insights and attention to individual differences.

By combining interdisciplinary theory with empirical analysis, this research contributes to a more nuanced understanding of arts engagement and advances methodological innovation in audience research. The discussion on engagement continues throughout the article, reflecting both exploratory approach and inherently dynamic nature of the phenomenon.

## **The Study**

The primary aim of this study was to explore specific audience experiences within a single artistic project, contributing to a broader understanding of engagement with art. To preserve the integrity of the art, I did not manipulate the artwork and rejected experimental designs that require control over participants' behaviour. The study combined two approaches: an

exploratory case study, which observed art engagement in its natural form, and an explanatory case study, which seeks to 'discover and analyse the many factors and conditions that can help us to build a causal explanation for the case' (Lune and Berg, 2017: 176). I analysed the experiences of all audience members, collecting pre- and post-experience data and conducting multiple comparisons. Following Bordwell (1985: 30), audience members were treated not as generic 'ideal readers' but as active participants in the art event.

The study was guided by two research questions:

- What similarities and differences can be observed in the engagement of people with similar or different profiles and motivations?
- What can the arts engagement of people with specific personal contexts reveal about audiences' experiences in other artistic contexts?

These questions enabled an examination of both individual variations and broader engagement patterns, linking detailed observations of a single case to general insights about how audiences interact with art.

## **The Art Context in the Study**

I examined the experiences of *Whist*, an extended reality dance performance developed by choreographers Esteban Fourmi and Aoi Nakamura (AΦE). *Whist* was presented during Dance Banbury Festival organised by the Mill Art Centre in Banbury, UK, on 20<sup>th</sup> and 21<sup>st</sup> July 2019.

*Whist*, contemporary in its art form project, had a non-linear story and open structure of several episodes. The length of the art experience was between thirty-five and fifty-five minutes, depending on the audience's response to the story. Virtual reality (VR) headsets provided the audience with 360 degrees of vision and three degrees of freedom (headset tracked rotational but not translational motion). VR focused participants attention and limited external influences on experience. The content, led by spoken narrative and music, was cognitively demanding, evocative and affective, providing opportunities for a diversity of possible emotional responses in different episodes. *Whist* was presented ten times during two days in a pop-up venue, one of the unused shops in Castle Quay Shopping Centre. I ran data collection during each of the shows.

## **Data Collection**

At the beginning of the experience, participants were informed about the purpose and methodology of the project. After signing a consent form, each participant received an identification number to ensure anonymity. Used on both surveys the number enabled the merge of data in the analysis phase. The ethical review was done by the Arts, Humanities and Cultures Faculty Research Ethics Committee at the University of Leeds (LTSPCI-045). Before and after the *Whist* experience, all audience members provided information by responding to questionnaires. As some questionnaires were incomplete, thirty sets of both questionnaires were available.

## **Analysing the Experience of the Actual Audience**

A consequence of the decision to fully embrace the real-life audience experience of engagement with arts was settling for self-selected participation in the artwork presentation. The case study involved real audiences – people who decided to participate in the art presentation motivated by reasons that were not financial or related to academic remuneration taking place in many experimental psychology studies. Most of the *Whist* participants were the Mill Art Centre audience pre-booking a free ticket through the festival website. When headsets were still available, I invited people passing by to experience the VR art.

## **Personal Context of Engagement**

The analysis was anchored in participants' pre-experience personal context and their *liabilities* – a variety of causal dispositions, inclinations, or tendencies (Bhaskar, 2011; Harré and Madden, 1975; Sayer, 1992: 104-106). That is because the primary reason for non-attendance for more than one-third of the adult population in Europe who did not participate in cultural activities in the previous year was a lack of interest<sup>1</sup> (Eurostat, 2021: 20). Interest, understood as a state, uniquely integrates an individual's past and immediate experiences with a specific object or content. While personal history may influence the interplay among these components (Ainley, 2017: 4-5), interest must also be considered in the context of a specific event – an art project. This includes *situational interest*, defined as attention and positive affect sparked by something external (Krapp et al., 1992; O'Keefe and Harackiewicz, 2017: vii).

To answer the research questions, the study examined the audience's pre-experience personal context in terms of two dimensions: *anticipation*, reflecting present-related feeling, and *propensity*, reflecting past-related thinking and doing. These dimensions were then analysed in relation to the two central components of the studied art project – art and technology – allowing for a nuanced understanding of how personal context shapes engagement.

## **Composition of Pre-Experience Questionnaire**

The pre-experience questionnaire consisted of twenty-nine items, combining Likert-scale and multiple-choice formats. Since psychological state influences artistic experience (e.g., Kaplan et al., 1993), participants were asked about concentration and anticipation – as curiosity, excitement, and confidence of enjoyment (see Wlazeł, 2025). A second set of questions assessed propensity for the arts and technology, each measured through eight items addressing attitudes, interests, skills, motivations, and past behaviours (e.g., arts attendance, VR use). This framework captured the likely direction of participants' focus – towards arts or technology – rather than their interpretative capacities, and enabled comparisons with post-

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<sup>1</sup> Respondents were asked to select from 'financial reason', 'lack of proximity' (which relates also to accessibility), 'lack of interest' and 'other' (Eurostat, 2017).

experience assessments. Finally, demographic information (gender, age, education, cultural background) was gathered to create audience profiles and support comparison with other studies (e.g., Brown and Novak, 2007; DCMS, 2019).

## Composition of Post-Experience Questionnaire

The post-experience questionnaire contained thirty items, combining Likert-scale, multiple-choice, and open-ended questions to capture participants' reflections on the experience. Its core element was the validated User Engagement Scale Short Form (UES-SF) (O'Brien et al., 2018), which measures engagement quality across four dimensions: focused attention, perceived usability, aesthetic appeal, and reward factor. These dimensions were appropriate for assessing a VR-based art project, with 'technology' replaced by 'VR art'. The twelve UES-SF items were integrated with additional questions linking back to anticipation, exploring how the arts content and form influenced the specific experience, and assessing participants' broader patterns of arts attendance and engagement.<sup>2</sup> Open-ended items allowed personalised responses, helping to reduce the risk of validity threats that arise when relevance is defined solely by the researcher (Schrøder, 1999: 41).

## Data Analysis and Qualitising

The context, complexity and breadth of focus were more valuable in my analysis than the precision of the study findings (Hammersley, 1992). As the separation of process from the outcome seemed artificial, the study combined a process evaluation of the temporal experience with an outcome evaluation. Analysis of processes requires the identification of patterns and variations in data (Corbin and Strauss, 2015: 184). In such a way, it is possible to demonstrate how conditions influence actions and interactions. To support this aim, I transformed – *qualitised* – processed quantitative survey results to extract meaning from them (e.g., Caracelli and Greene, 1993; Nzabonimpa, 2018). Although relatively rare, this method has previously been applied to generate qualitative group profiles (e.g., Teddlie and Tashakkori, 2009: 135).

During the interpretation phase, I created three data groups. The analysis included: (1) individual engagement, (2) group-specific – comparison of engagements of clusters of participants, and (3) general engagement – exploring data from all participants. The empirical material from each phase was analysed independently and in relation to one another through *classical inductive reasoning*. This mode of inference – moving from specific cases to broader insights – is central to many qualitative traditions, including grounded theory (Glaser and Strauss, 2006). That approach supported the identification of similarities and variations and enabled the search for causes, reasons, and effects, while remaining sensitive to the contextual dynamics of audience experience.

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<sup>2</sup> Both questionnaires are documented in my book (Wlazeł, 2025) and are also available on the OSF platform.

## Pre-Experience Qualitising and Analysis

For pre-experience data analysis, I assembled Likert-scale questions into three composite variables. Declared anticipation was calculated as the arithmetic mean of audience answers to five questions regarding asserted levels of curiosity, excitement, readiness for absorption and confidence of enjoyment, and a question about the declared level of current mental state – between distraction and focus. Propensity for the arts was based on replies to eight questions related to attitude, motivation, awareness, knowledge about arts and attendance in arts events. Propensity for technology was established on answers to eight questions inquiring about attitude, motivation, awareness, knowledge of technology and VR, and previous experience with virtual reality. I applied the normal coding in all but one instance as answers related explicitly to information provided by the participants. Only one response was calculated differently. If an audience member was an enthusiast of both *contemporary* and *established* cultural forms, five points were given, while the response indicating *neither* received one point. Selection of either established or contemporary forms alone scored three points. I interpreted the mean score of each construct in both questionnaires in the ranges presented in table 1.

Table 1: Interpretation of mean values for anticipation, both propensities in the pre-experience survey and quality of engagement from the post-experience survey.

Mean score	Answer	Level of anticipation, propensities & quality of engagement
1–1.80	strongly disagree	very low
1.81–2.60	disagree	low
2.61–3.40	neither agree nor disagree	moderate/neutral
3.41–4.20	agree	high
4.21–5	strongly agree	very high

The analysis was used to create brief qualitative profile descriptions for each participant, with their pre-experience guiding focus reflected in the profile title. For example, one participant was an educated woman (fifty-five–sixty-four years old) who reported moderate anticipation (3.2) and moderate arousal (3.32), very low relevance of technology (1.38), and moderate relevance of art (3.38). Her profile was summarised as ‘arts’. Profile titles used a simple coding system: lowercase letters (‘arts’ or ‘tech’) indicated moderate propensity, capital letters (‘ARTS’ or ‘TECH’) indicated high propensity, and capital letters with an exclamation mark (‘ARTS!’ or ‘TECH!’) indicated very high propensity. A question mark (‘?’) signified a lack of focus, with both areas scoring below average. The pre-experience questionnaires thus enabled labelling each participant’s state before the experience, combining explicit self-reported information with implicit factors inferred from their

responses. These profile descriptions provided the basis for comparing participants' pre-experience states with their assessment of the experience, linking numerical responses to qualitative nuances to generate meaningful interpretations of the quantitative data (Nzabonimpa, 2018: 13).

## **Post-Experience Analysis**

The post-experience analysis was based on the UES-SF (O'Brien et al., 2018), which uses a five-point Likert scale to measure engagement quality across four dimensions. The sub-constructs of focused attention, aesthetic appeal and reward factor were coded normally, while perceived usability items were reverse-coded. The sub-scales were summed to generate an overall engagement score, providing insight into how variables co-vary rather than explaining the phenomenon itself (Sayer, 1992: 181). All dimensions were weighted equally, as the literature offered no basis for prioritisation.

Responses to the UES-SF items on aesthetic appeal and tech usability were used to describe each participant's quality of engagement, coded using the same system as the pre-experience personal context (e.g., 'arts', 'ARTS', or 'ARTS!'). This allowed direct comparison between pre-experience propensity and post-experience evaluations. These profile descriptions formed the basis for analysing differences in engagement and discussing various aspects of the experience in relation to the research questions.

## **Within and Between-Person Comparisons**

The described methods allowed me to determine a change within participants' data regarding attitudes towards arts and technology. I calculated a difference between the pre-experience focus and post-experience valuation of arts and tech factors of each audience member by determining the number of ranks between both codes. For instance, the substitute of medium 'art' (pre-experience) for high 'ART' (after), or 'ART' for very high 'ART!' was coded as +1, while a change from 'art' to 'ART!' (two levels up) as +2. The propensity for the arts and tech was also compared with the quality of engagement scores. I used scatter plots to observe the relation between the constructs within-person and between participants. The comparisons allowed observing the general mechanisms of pre-experience focus impacting engagement and potentially causing differences in engagement.

## **Results – The Discussion of Potential Impacts of Personal Contexts**

The personal context of participants was expected to impact their experience of engagement. The research examined the influence on the art experience of the audience's pre-experience temporary state and more enduring personal characteristics. That is because psychology challenges the assumptions that behaviour results only from fundamental and stable properties of the person, as it also depends on the features of the situation (e.g., Chaplin et al., 1988; Mischel, 1968; Simon, 1992).

## **Self-Motivations**

The Banbury Dance Festival was promoted as a celebration of ‘cutting edge dance from leading professional companies’ (Prestidge, 2019), creating expectations of quality, experimentation, and novelty. All but two of the *Whist* attendees included in my analysis booked in advance, showing that they had prior knowledge of the event and made a deliberate decision to attend. Their motivation was therefore driven by personal reasons rather than by the chance of an unexpected opportunity (Bollo et al., 2017).

The motivations to attend were diverse across the group regardless of the art or tech pre-experience context. All participants had at least some familiarity with attending artistic events, and most of them had no previous virtual reality experience. Many participants attended because of interest – ‘a desire to explore and engage with the object, and a sense that it has personal meaning and value’ (Ainley, 2017: 5). However, this interest was not primarily their interest in arts. In the questionnaire, participants chose and prioritised the three most important reasons for attendance. To ‘experience arts’ mentioned frequently (seventeen times) was not the participants’ first choice, even among people with a high or very high propensity for arts. The most recurrent response was to ‘discover something new’ (used twenty-one times), while ‘experience VR’ was used fourteen times, ‘broaden myself culturally’ (ten), or ‘intellectual stimulation’ (nine times). These answers indicated openness to experience and signalled the growth mindset (Dweck, 2016) of the vast majority of participants.

Participants viewed art as a means of personal development, a motivation similar to those reported for attending live theatre in real-life audience studies (Brown and Ratzkin 2012). To capture the full range of participants’ motivations, question twenty-seven – ‘Why do you usually engage with art? What are the most important reasons for you to attend an art event or visit an arts institution?’ – was left open. This allowed participants to respond in their own words, revealing both common and unique motivations. Responses were then coded to enable systematic comparison, allowing qualitative data to be analysed alongside quantitative responses while preserving its richness. The most frequent motivations were expanding horizons and experiencing something new (eight mentions), followed by seeking stimulation (six), interest and entertainment (five each), and experiencing emotions, social reasons, and professional motives (four each). Overall, the responses highlighted the diversity of participants’ motivations. This supports Manolika and Baltzis (2022) observation that audience behaviour is selective and shaped by the conscious awareness of individual needs.

Expressed motivations, according to Kahneman (2011: 387), are salient as they influence not only decision-making processes, but also the experience itself. Yet, motivation is a state and not a fixed property of a person. That is because the causes for attendance and causal mechanisms during the experience of engagement need not be the same. The potential fluctuations in motivations and their adaptation during the artistic experience are intriguing subjects for art engagement studies.

## **Anticipation**

Before the event, the participants reported high, or very high, anticipation, curiosity and confidence about enjoying the artwork. Therefore, while answering anticipation questions,

they simultaneously expressed their general expectations about the event. Anticipatory behaviours have been thought to be connected to memory and reflect recalls of previous events (Hofheimer and Lester, 2008: 429). In new situations, particular features of an experience might activate some positive memories and emotions. In my study, people with a higher arts focus could potentially transfer this positive effect to virtual reality, and people with a high propensity for technology might shift their confident outlook from VR to arts. Also, if our brain is a prediction machine that tries at the same time to deal with the past, present, and future (e.g., Clark, 2013; Friston and Kiebel, 2009; Thornton, 2017), participants could have also built their prediction on the expectation of the future. The anticipation could not relate to similar previously experienced virtual reality art because it was a new experience for most participants. They also did not relate to knowledge gained before the event, as responses to the pre-experience questionnaire indicated that only one participant looked for more information about the content and the artists. Given the declared reasons for attendance, the experience of new (for them) virtual reality was expected to be valuable and not risky for both the arts and tech groups and frequent and non-frequent audiences. Regardless of the degree of artistic or technological pre-experience focus, or lack of both, the majority thought that their effort and decision to participate would be rewarding.

The intuitive answer that the anticipation was high or very high should not be surprising. In my case study, participants' primary motivation was personal, not a social obligation. Without at least high anticipation, the person would not attend the event. The participants' assessment of the value of attendance and the participation costs – referring in this study to mental, physical effort and opportunity cost only, as the event was free – was done earlier. It connects to the decision-making processes a few weeks or days before and again on the performance day when people implemented that decision – '[t]he value of an anticipated rewarding event is a crucial component of the decision to engage in its pursuit' (Malvaez et al., 2019: 762).

My participants' high anticipation is similar to participants of Brown and Nowak's (2007) and Brown and Ratzkin's (2012) studies. Their research has also indicated that anticipation for the majority of audiences is consistently relatively high. These being distinct in time and space studies, one exploring free and the other ticketed events led to similar results – audiences before the event expressed high anticipation. This suggests that the starting point of anticipation for all, or most, audiences is comparable. Responses to the anticipation questions did not provide new insights into participants' engagement. The pre-experience anticipation inquiry in audience surveys might have limited value for audience studies and for actions facilitating arts involvement. However, this analysis offered a valuable suggestion – studying the moments of decision-making about attendance might be more informative for audience studies dedicated to audience development than questions about anticipation.

## **Effects of the Propensity for the Arts on Engagement**

There was no apparent relationship between participants' propensity for the arts or technology and their assessments of self-assessed engagement. Figure 1 shows that arts focus (blue dots), ordered from lowest to highest, and tech focus (yellow dots) did not predict engagement quality (red dots) measured with the O'Brien, Cairns and Hall's scale. Each participant's responses are represented by vertically aligned blue, red, and yellow dots. Overall, engagement quality exceeded pre-experience arts propensity, including for those

with low or medium arts focus, with this increase observed in approximately 80% of participants.

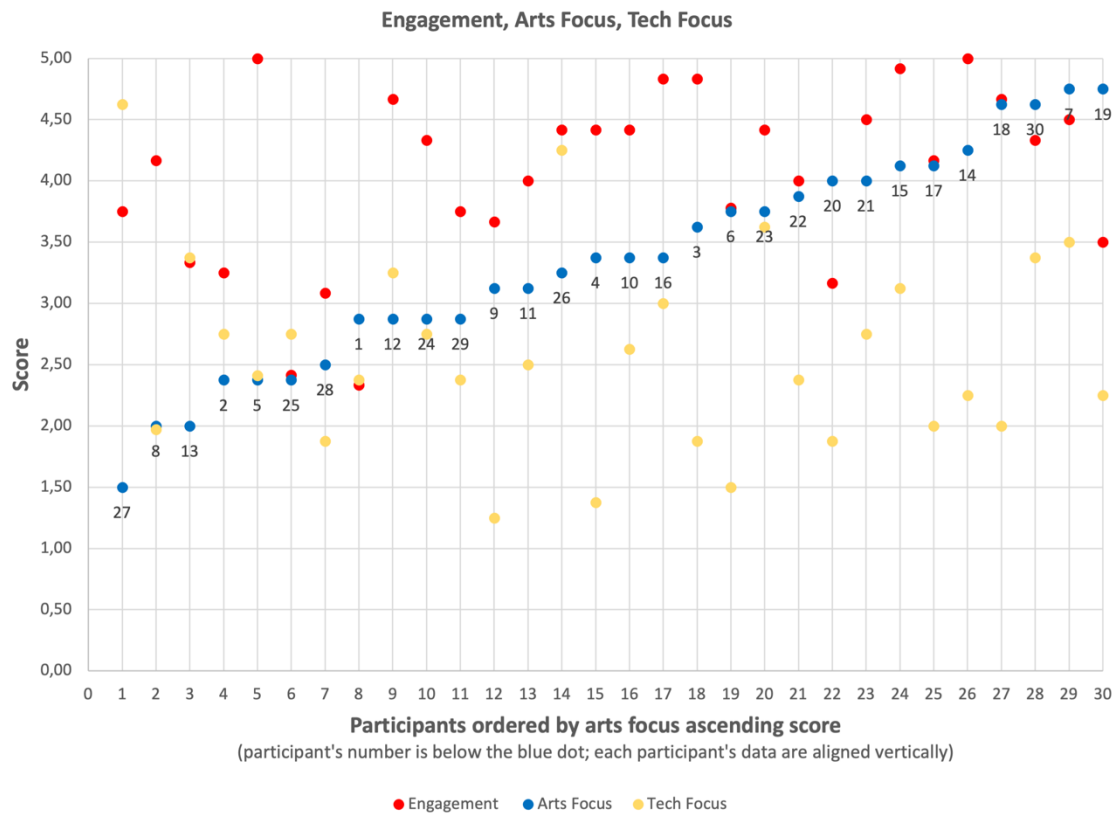


Figure 1: *Whist*, visualisation of participants' scores for quality of engagement, arts focus and tech focus.

The highest scores were given by people across the spectrum of propensity for the arts. For example, a very high appraisal came from a participant with pre-experience the 'ARTS!' focus, able to interpret each sequence of the experience. But the highest assessment of *Whist* was also given by one person with a low and six persons with a moderate arts focus. The propensity for arts or technology did not visibly influence the quality of the engagement of my case study participants.

These findings suggest that audiences do not always need to be prepared to engage with specific artwork, and lack of knowledge or comprehension does not need to mean worse or less satisfactory engagement. A few other studies using different methods led to the same conclusions. Kawashima (2000: 70) has concluded that understanding might be unnecessary for artistic enjoyment. Jakesch and Leder (2009: 2110) have demonstrated that moderate levels of ambiguity in modern artworks could elicit 'the enjoyment of ambiguity when viewers perceive and attempt to understand' them. A study of inconsistencies in narratives has indicated that lack of understanding did not lead to negative emotional experiences (Sukalla et al., 2016: 7). My participants' reflections also show that arts understanding, or pre-experience arts focus, are not always the principal components of effective engagement.

These results do not contradict studies demonstrating that knowledge of meaning causes pleasure. A substantial number of studies have confirmed that the level of expertise modulates the aesthetic evaluation of art. For example, Kirk et al.'s (2009: 313) research has shown that 'expertise modulates brain areas to both aesthetic processing and to cognitive or

typological processing irrespective of aesthetic ratings'. But neural activity in the brain's pleasure centre (nucleus accumbens) 'seems to record our enjoyment of objects regardless of the effects of education and background' (Chatterjee, 2014: 141-142). 'Meaning influences even simple pleasures. Knowing the label of a Cola drink influences our enjoyment of its taste' (Chatterjee, 2014: 182). Yet, depending on the context, drinking brown, sweet and sparkling water might bring pleasure, even when we do not know it is cola. The same applies to arts. In my study, many participants accepted and even enjoyed their lack of comprehension, potentially experiencing art in an affective rather than interpretative way (cf. Reason, 2016: 84).

## **Short-Term Impact of Engagement in Context**

The case study revealed that participants' appraisal of the artistic and technological aspects of the experience related to the level of their propensity for arts or technology. The relationship, however, differed from what audience studies or heuristics – the mental shortcuts – suggested but was potentially aligned with what cognition would expect.

Neuroscience states that our brains constantly build on past, present and predictions of the future (e.g., Clark, 2013; Friston and Kiebel, 2009; Thornton, 2017). Consequently, appraisals rely on the memory of the participants' previous experiences; are concerned with the current event; and add expectations of future experiences. The first point of comparison was different for participants with a very high and low arts focus. People with a very high propensity for the arts assessed the quality of the experience very highly only if they considered the event, compared to the previously seen artworks, as ground-breaking. Lower scores do not necessarily refer to a lower value of the experience. Table 2 (below) suggests that participants left themselves a space to assess, in the future, very highly events for them profoundly meaningful or innovative. Participants with low arts focus showed a more positive assessment of the artistic component of the experience. Generally, people with a lower score for specific propensity (arts or tech) were more positively affected than those with high scores in their pre-experience dominating focus. That is because they have never, or rarely, experienced similar things, and future experiences might be difficult for them to forecast. The same tendency was visible regarding the propensity for technology. Those with a low technological focus more positively assessed the technological aspects of the experience. This observation is in line with the scheme conceptualised by Tversky and Griffin (1991), who have demonstrated that the quality of a past event impacts the assessment of a present event – judgment is 'sensitive to comparison or contrast'.

Table 2, which groups participants from low to very high arts propensity, illustrates this phenomenon. Positive assessments of arts and technology and the high general engagement scores indicated high engagement quality also among participants with no or medium propensity for the arts. Meanwhile, people with high or very high arts focus assessed aesthetic appeal at a similar or slightly lower level than their arts focus. After the event, the significant differences between pre-experience focus and post-experience appraisal largely vanished – most participants' codes included some form of 'arts' code. Those are relevant aspects for cultural policy to consider when it seeks to find appropriate ways to evaluate, through audience opinions, financially supported art projects.

Table 2: Pre-experience personal context and assessment of engagement.

Participant's number	Gender	Age	Pre-FOCUS	Post-experience	Change re. Art	Change re. Tech	General engagement
5	M	55-64	?	ART!/TECH!	+3	+3	5,00
8	M	25-34	?	ART/TECH!	+2	+3	4,17
28	F	45-54	?	tech	0	+1	3,08
2	F	18-24	tech	art/TECH!	+1	+2	3,25
13	M	18-24	tech	art/tech	+1	0	3,33
25	F	18-24	tech	tech	0	0	2,42
27	M	45-54	TECH!	art/TECH	+1	-1	3,75
10	F	35-44	art/tech	ART/TECH!	+1	+2	4,42
12	F	18-24	art/tech	ART!/TECH!	+2	+2	4,67
16	F	18-24	art/tech	ART!/TECH!	+2	+2	4,83
24	M	35-44	art/tech	ART!/TECH	+2	+1	4,33
26	M	45-54	art/TECH!	ART/TECH	+1	-1	4,42
1	F	18-24	art	tech	-1	1	2,33
4	F	55-64	art	ART!/tech	+2	+1	4,42
9	F	65-74	art	art/tech	0	+1	3,67
11	F	75+	art	art/TECH!	0	+3	4,00
29	F	45-54	art	ART/TECH	+1	+2	3,75
3	F	35-44	ART	ART!/TECH!	+1	+3	4,83
6	F	45-54	ART	art/TECH	-1	+2	3,75
17	F	45-54	ART	ART/TECH!	0	+3	4,17
20	F	35-44	ART	art/tech	-1	+1	3,17
22	M	45-54	ART	ART/TECH!	0	+3	4,00
15	M	45-54	ART/tech	ART!/TECH!	+1	+2	4,92
21	F	35-44	ART/tech	ART/TECH!	0	+2	4,50
23	F	25-34	ART/TECH	ART!/TECH!	+1	+1	4,42
30	F	25-34	ART!/tech	ART/TECH!	-1	+2	4,33
7	F	55-64	ART!/TECH	art/TECH!	-2	+1	4,50
14	F	45-54	ART!	ART!/TECH!	0	+3	5,00
18	F	25-34	ART!	ART!/TECH	0	+2	4,67
19	F	25-34	ART!	ART/TECH!	-1	+3	3,50

The positive assessment of any experience, including artistic ones, rarely alters an audience's general attitude towards the arts or technology. Matched or lower post-experience valuations are unlikely to diminish the attitude of those already focused on the arts, and a single positive experience rarely converts low-propensity individuals into arts enthusiasts. Such experiences may, however, increase attention to future communications from the organisers. Yet, almost all participants declared themselves not as having specific, fixed interests but as being open to new experiences or both – being open but also having specific interests. It remains unclear whether openness – a constitutional preference for novelty and excitement – is linked to specific art forms, such as VR, or to arts attendance more broadly. Those understudied factors require closer attention from arts engagement studies as they may help explain why some individuals participate in cultural activities while others do not.

My case study findings, in line with the work of, for example, Kawashima (2000), Brown and Ratzkin (2012), Reason (2016), Tröndle and Tschacher (2016), suggested a less judgemental approach to audiences' personal context. My research indicated the value of

stimulating curiosity toward the arts, which should not be associated only with pre-existing, specific and enduring art interests. Assessment of the event's potential for evoking situational interest and contributing, on the base of it, to forming more stable interests might be, at least in some cases, more beneficial for both audiences and arts organisations.

## **The Causes of Different Assessments**

I documented in my study the operation of cognitive bias – the peak-end rule (Kahneman, 2011; Varey and Kahneman, 1992). Most people judge an experience based on the peak – the most intense, and final feelings of the experience. *Whist* included a controversial *Table II* scene, which was the most memorable and negatively intense and often generated feelings of disgust. About half of the people who gave *Whist* lower scores indicated this fragment as the worst moment of the experience. The other half cited VR-related problems, including motion sickness and shaking images, as the event's worst aspects; the intentional blurring of images, introduced as an artistic choice to reduce strong bodily responses, was interpreted as a technical fault. Therefore, some participants were not fully satisfied with *Whist* for objective reasons, as they were expecting more from VR image quality, and some due to the artistic choice to include a controversial scene. Those issues decreased some appraisals, while other participants, despite those challenges, were utterly satisfied. In *Whist*'s case, the peak moment of the *Table II* scene did not negatively impact all participants' overall assessment as positive episodes followed. It represents the operation of the *end rule*. Yet, this intense scene negatively influenced the appraisal of the youngest – eighteen–twenty-four years old – group. That suggests the emotion regulation skills (Gross, 1998) of younger audiences in coping with negative stimuli might still be in the development phase or operate in different timescales (Fombouchet et al., 2023). Nevertheless, the peak-end rule might explain the assessment of the experiences of some participants.

Of course, artists should not omit challenging subjects or scenes that may impact audiences' reviews to satisfy administrative evaluations. The controversial scene was justified by adherence to Freud's theories, which inspired the artists, as the concept of *defense mechanisms* – triggered by *Whist* – originated with Freud (Paulhus et al., 1997). Interestingly, problems related to the technology, while mentioned, did not strongly influence the audience's opinion, as demonstrated in the assessment of tech aspects of the experience. Yet, the context of the artworks and the age of participants should also be considered when asking the audience to evaluate art projects.

## **Reflection on Methodology**

The research design for this study had some limitations. Not all could be reduced. First and foremost, I must underline that any definition of a personal pre-experience context bounds something latent, not directly observable, and variable rather than constant. However, more questions increase the reliability of the scales (DeVellis, 2003). Building each of my pre-experience context's constructs on answers to several questions increased the reliability of my questionnaires.

I examined whether cognitive bias or situational effects influenced participants' assessments of engagement. Regarding cognitive biases, no evidence of acquiescence bias – the tendency to select positive responses regardless of content – was observed. Confirmation bias could have been expected due to high anticipation, but as most participants attended for self-growth, they had little reason to take part if the event was not expected to be rewarding. Regarding situational effects, the zero-price effect, in which free products are perceived as more valuable (Shampanier et al., 2007), appeared negligible. Although attending a free event may have motivated some participants initially, it was not reported in the post-experience questionnaire as affecting their assessment; instead, factors such as experiencing VR for the first time were more salient. The priming effect, in which exposure to one stimulus influences responses to subsequent stimuli, could not be controlled, as I did not ask which participants received promotional messages describing the festival as presenting ground-breaking projects. Overall, neither these cognitive biases nor situational effects were clearly evident in participants' responses.

After analysing the data, I realised that some questionnaire items were too broad to yield practical insights and will need modification. Demographic information was collected to build audience profiles and enable comparisons with other studies. However, aside from age and gender, these variables contributed little to understanding the experience of art. Age appeared to influence participants' assessments, likely reflecting differences in emotion regulation: younger audiences tended to evaluate the event less positively, while older audiences assessed it more positively. Gender also played a role: the *Whist* project, which included technological elements, attracted more women than men (twenty-two females and eight males; seven participants with partial data – three female and four male – were excluded). This contrasts with the UK's *Taking Part* survey (DCMS, 2019: 14), which reports a smaller gender gap in attendance. The high proportion of female participants in my project indicates a demand for less gender-specific content in VR, which is still male dominated. However, artistic content is rarely gender specific, thus gender neutrality can be maintained in audience engagement studies. Education level, in contrast, provided little insight into engagement patterns. In future studies, questionnaires will be revised to avoid items that elicit heuristics from participants or the researcher. It should also be noted that completing questionnaires and interacting with the researcher can influence the results itself (Mandryk and Inkpen, 2004).

There are also positive aspects. My research design incorporated within-person and between-person comparisons and qualitisng of quantitative data, both rarely used in audience studies. In a qualitative study, within-person comparison – of the participant's before-after state or attitude – has been viewed as more credible as assessment criteria vary widely across people (Cutting, 2021: 318). When used with between-person comparisons, they build a deeper understanding of processes of engagement. The exploration of audience experiences of arts engagement through available scientific knowledge creates ground for credible generalisations about the engagement phenomenon. The study integrated insights from different academic fields and interpreted personal and particular in a comparative and transferrable way. Thus, the research design offers solutions to the ongoing challenges of arts audience studies.

## **Conclusion**

The personal context of the participants influenced their art experience. Yet differently than is usually expected. It was impossible to distinguish frequent from infrequent attenders or people with a high propensity for the arts based on differences in anticipation and motivation to attend. The patterns in the assessment of the quality of engagement did not depend on participants' propensity for the arts. It does not mean that audience knowledge and past experiences do not influence the internal processes; they do. Yet, neuroscience argues that human minds automatically close gaps in, e.g., knowledge or attention (Feinberg and Mallatt, 2016: 123) by, for example, perceptual filling (Koenderink et al., 2012) and that different regions of the brain are activated by expertise and pleasure (Chatterjee, 2014: 141-142; Kirk et al., 2009). Audiences can always derive some meaning. The quality of their experience and the pleasure it brings do not depend only on their expertise or propensity for engagement with art. In my study, audiences with a lower propensity for the arts assessed their experience higher, relative to their pre-experience state, than those with a high and very high arts focus. Likewise, audiences with a lower propensity for technology assessed the technological dimension of the experience more highly.

The study demonstrated that studying audiences' artistic experiences in the context of the causal mechanisms and conditions in which they operate, the positive and negative consequences of heuristics, are worthy themes for further research. The operation of the cognitive bias of peak-end rule or emotion regulation strategies does not inherently relate to specific audience members of this one art project. They likely operate in other arts engagement contexts. I demonstrated that the comparative study of a group of people unified by the same arts experience brings insights into the phenomenon of engagement in general. The analysis suggests attention to the processes of arts engagement, their interrelations, and their contexts. The research design demonstrated that audience experience of engagement and analysis of its dynamic processes are not intractable problems. The research's multi-dimensional and human-centred understanding of arts engagement contributes to the crystallisation of empirical arts engagement studies and lays the groundwork for a follow-up study using a further developed methodological framework.

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## References

- Ainley, M (2017), in O’Keefe, PA and Harackiewicz, JM (eds) *The Science of Interest*, Cham: Springer pp. 3-24.
- Barker, M (2006), ‘I Have Seen the Future and It Is Not Here Yet ...; or, On Being Ambitious for Audience Research’ in *The Communication Review*, 9:2: pp. 123-141.
- Baxter, L, O’Reilly, D and Carnegie, E (2013), in Radbourne, J, Glow, H and Johanson, K (eds) *The Audience Experience: A Critical Analysis of Audiences in the Performing Arts*, Bristol: Intellect pp. 113-128.
- Belfiore, E and Bennett, O (2007), ‘Determinants of Impact: Towards a Better Understanding of Encounters with the Arts’ in *Cultural Trends*, 16:3: pp. 225-275.
- Berleant, A (1991), *Art and Engagement*, Philadelphia: Temple University Press.
- Bhaskar, R (2011), *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy*, London: Routledge.
- Bollo, A, Carnelli, L, Cuenca, M et al. (2017), *Study on Audience Development – How to Place Audiences at the Centre of Cultural Organisations*, Luxembourg: Publications Office of the European Union.
- Bordwell, D (1985), *Narration in the Fiction Film*, Madison, Wisconsin: The University of Wisconsin Press.
- Brown, AS (2017), ‘Audience Research Gone Wild’ in *Participations: Journal of Audience and Reception Studies*, 14:2: pp. 53-62.
- Brown, AS and Novak, JL (2007), *Assessing the Intrinsic Impacts of a Live Performance*, Detroit: WolfBrown.
- Brown, AS and Ratzkin, R (2012), *Understanding the Intrinsic Impact of Live Theatre: Patterns of Audience Feedback across 18 Theatres and 58 Productions*, San Francisco: WolfBrown.
- Caracelli, VJ and Greene, JC (1993), ‘Data Analysis Strategies for Mixed-Method Evaluation Designs’ in *Educational Evaluation and Policy Analysis*, 15:2: pp. 195-207.
- Chaplin, WF, John, OP and Goldberg, LR (1988), ‘Conceptions of States and Traits: Dimensional Attributes with Ideals as Prototypes’ in *Journal of Personality and Social Psychology*, 54:4: pp. 541-557.
- Chatterjee, A (2014), *The Aesthetic Brain: How We Evolved to Desire Beauty and Enjoy Art*, Oxford: Oxford University Press.
- Clark, A (2013), ‘Whatever Next? Predictive Brains, Situated Agents, and the Future of Cognitive Science’ in *Behavioral and Brain Sciences*, 36:3: pp. 181-204.
- Corbin, JM and Strauss, A (2015), *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 4<sup>th</sup> edn, Los Angeles: Sage.
- Creswell, JW (2015), in Hesse-Biber, SN and Burke Johnson, R (eds) *Oxford Handbook of Multimethod and Mixed Methods Research Inquiry*, Oxford: Oxford University Press pp. 57-71.
- Cutting, JE (2021), *Movies on Our Minds: The Evolution of Cinematic Engagement*, Oxford: Oxford University Press.

- DCMS, (2019), *Taking Part Survey: England Adult Report, 2018/19*. Report from the Department for Digital, Culture, Media & Sport, London, [online] available: [https://assets.publishing.service.gov.uk/media/600e91cb8fa8f56545ea3d03/Taking\\_Part\\_Survey\\_Adult\\_Report\\_2018\\_19\\_V2.pdf](https://assets.publishing.service.gov.uk/media/600e91cb8fa8f56545ea3d03/Taking_Part_Survey_Adult_Report_2018_19_V2.pdf) [accessed: 8 March 2026].
- Dewey, J (1934/1980), *Art as Experience*, 23<sup>rd</sup> edn, New York: A Wideview/Perigee Book.
- DeVellis, RF (2003), *Scale Development: Theory and Applications*, 2<sup>nd</sup> edn, Thousand Oaks, CA: Sage.
- Dweck, CS (2016), *Mindset: The New Psychology of Success*, 2<sup>nd</sup> edn, New York: Random House.
- Eurostat (2017), 'Culture statistics - frequency and obstacles in participation - Statistics Explained' in *Eurostat*, [online] available: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Culture\\_statistics\\_-\\_frequency\\_and\\_obstacles\\_in\\_participation&oldid=356322](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Culture_statistics_-_frequency_and_obstacles_in_participation&oldid=356322) [accessed: 22 August 2023].
- Eurostat (2021), 'Culture Statistics - Cultural Participation' in *Eurostat*, [online] available: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Culture\\_statistics\\_-\\_cultural\\_participation#Cultural\\_participation](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Culture_statistics_-_cultural_participation#Cultural_participation) [accessed: 20 February 2022].
- Feinberg, TE and Mallatt, J (2016), 'The Nature of Primary Consciousness. A New Synthesis' in *Consciousness and Cognition*, 43: pp. 113-127.
- Feldman Barrett, L (2017), 'The Theory of Constructed Emotion: An Active Inference Account of Interoception and Categorization' in *Social Cognitive and Affective Neuroscience*, 12:1: pp. 1-23.
- Fombouchet, Y, Pineau, S, Perchec, C et al. (2023), 'The Development of Emotion Regulation in Adolescence: What Do We Know and Where to Go Next?' in *Social Development*, 32:4: pp. 1227-1242.
- Friston, K and Kiebel, S (2009), 'Predictive Coding Under the Free-Energy Principle' in *Philosophical Transactions of The Royal Society of Biological Sciences*, 364: pp. 1211-1221.
- Glaser, BG and Strauss, AL (2006), *The Discovery of Grounded Theory: Strategies of Qualitative Research*, 3<sup>rd</sup> edn, New Brunswick: AldineTransaction.
- Gross, JJ (1998), 'The Emerging Field of Emotion Regulation: An Integrative Review' in *Review of General Psychology*, 2:3: pp. 271-299.
- Hammersley, M (1992), *What's Wrong with Ethnography? Methodological Explorations*, London: Routledge.
- Harré, R and Madden, EH (1975), *Causal Powers: A Theory of Natural Necessity*, Oxford: Basil Blackwell.
- Hofheimer, JA and Lester, BM (2008), in Haith, MM and Benson, JB (eds) *Encyclopedia of Infant and Early Childhood Development*, Amsterdam: Elsevier pp. 425-438.
- Jakesch, M and Leder, H (2009), 'Finding Meaning in Art: Preferred Levels of Ambiguity in Art Appreciation' in *Quarterly Journal of Experimental Psychology*, 62:11: pp. 2105-2112.
- Kahneman, D (2011), *Thinking, Fast and Slow*, New York: Farrar, Straus and Giroux.
- Kaplan, S, Bardwell, LV and Slakter, DB (1993), 'The Museum as a Restorative Environment' in *Environment and Behavior*, 25:6: pp. 725-742.
- Kawashima, N (2000), *Beyond the Division of Attenders vs Non-Attenders: A Study into Audience Development in Policy and Practice*, Working paper. Centre for Cultural Policy Studies, University of Warwick. <https://wrap.warwick.ac.uk/id/eprint/35926/>.

- Kirk, U, Skov, M, Christensen, MS et al. (2009), 'Brain Correlates of Aesthetic Expertise: A Parametric fMRI Study' in *Brain and Cognition*, 69:2: pp. 306-315.
- Koenderink, J, van Doorn, A and Wagemans, J (2012), 'Picasso in the Mind's Eye of the Beholder: Three-Dimensional Filling-In of Ambiguous Line Drawings' in *Cognition*, 125:3: pp. 394-412.
- Krapp, A, Hidi, S and Renninger, KA (1992), in Renninger, KA, Hidi, S and Krapp, A (eds) *The Role of Interest in Learning and Development*, Hillsdale: Lawrence Erlbaum Associates, Inc. pp. 3-25.
- Leder, H and Nadal, M (2014), 'Ten Years of a Model of Aesthetic Appreciation and Aesthetic Judgments: The Aesthetic Episode - Developments and Challenges in Empirical Aesthetics' in *British Journal of Psychology*, 105:4: pp. 443-464.
- Livingstone, S (2007), 'Audiences and Interpretations' in *e-Compos*, 10: pp. 1-22.
- Lune, H and Berg, BL (2017), *Qualitative Research Methods for the Social Sciences*, 9<sup>th</sup> edn, Harlow: Pearson.
- Malvaez, M, Shieh, C, Murphy, MD et al. (2019), 'Distinct Cortical–Amygdala Projections Drive Reward Value Encoding and Retrieval' in *Nature Neuroscience*, 22:5: pp. 762-769.
- Mandryk, RL and Inkpen, KM (2004), 'Physiological Indicators for the Evaluation of Co-located Collaborative Play' in *CSCW'04*, 6:3: pp. 102-111.
- Manolika, M and Baltzis, A (2022), 'Concert Hall, Museum, Cinema, and Theater Attendance: What Difference Do Audience Motivations and Demographics Make?' in *Empirical Studies of the Arts*, 40:1: pp. 37-56.
- Mathieu, D, Brites, MJ, Chimirri, NA et al. (2016), 'In Dialogue with Related Fields of Inquiry: The Interdisciplinarity, Normativity and Contextuality of Audience Research' in *Participations: Journal of Audience and Reception Studies*, 13:1: pp. 462-475.
- McConachie, B (2008), *Engaging Audiences: A Cognitive Approach to Spectating in the Theatre*, New York: Palgrave Macmillan.
- Mischel, W (1968), *Personality and Assessment*, Mahwah: Lawrence Erlbaum Associates, Inc.
- Nzabonimpa, JP (2018), 'Quantitizing and Qualitizing (Im-)Possibilities in Mixed Methods Research' in *Methodological Innovations*, 11:2: pp. 1-16.
- O'Brien, HL (2016), in O'Brien, H and Cairns, P (eds) *Why Engagement Matters: Cross-Disciplinary Perspectives of User Engagement in Digital Media*, Cham: Springer pp. 1-26.
- O'Brien, HL, Cairns, P and Hall, M (2018), 'A Practical Approach to Measuring User Engagement with the Refined User Engagement Scale (UES) and New UES Short Form' in *International Journal of Human-Computer Studies*, 112: pp. 28-39.
- O'Keefe, PA and Harackiewicz, JM (2017), *The Science of Interest*, Cham: Springer.
- Paulhus, DL, Fridhandler, B and Hayes, S (1997), in Hogan, R, Johnson, JA and Briggs, SR (eds) *Handbook of Personality Psychology*, San Diego: Academic Press pp. 543-579.
- Prestidge, S (2019, 11 July), 'Banbury Prepares to Dance in the Street' in *Banbury Guardian Online*, [online] available: <https://www.banburyguardian.co.uk/whats-on/arts-and-entertainment/banbury-prepares-dance-street-685194> [accessed: 24 May 2021].
- Reason, M (2016), in Reason, M and Lindelof, AM (eds) *Experiencing Liveness in Contemporary Performance: Interdisciplinary Perspectives*, New York: Routledge pp. 83-96.
- Sauter, W (2010), 'Back to the Future of Theatre Studies' in *Theatre Research International*, 35:3: pp. 297-298.
- Sayer, A (1992), *Method in Social Science: A Realist Approach*, 2<sup>nd</sup> edn, London: Routledge.

- Schoenmakers, H and Tulloch, J (2004), in Cremona, VA, Eversmann, P, van Maanen, H et al. (eds) *Theatrical Events: Borders, Dynamics, Frames*, Amsterdam: Rodopi pp. 15-29.
- Schrøder, KC (1999), in Alasuutari, P (ed) *Rethinking the Media Audience: The New Agenda*, London: Sage pp. 38-68.
- Sedgman, K (2019), 'On Rigour in Theatre Audience Research' in *Contemporary Theatre Review*, 29:4: pp. 462-479.
- Shampanier, K, Mazar, N and Ariely, D (2007), 'Zero as a Special Price: The True Value of Free Products' in *Marketing Science*, 26:6: pp. 742-757.
- Simon, HA (1992), 'What is an "Explanation" of Behavior?' in *Psychological Science*, 3:3: pp. 150-161.
- Sukalla, F, Bilandzic, H, Bolls, PD et al. (2016), 'Embodiment of Narrative Engagement: Connecting Self-Reported Narrative Engagement to Psychophysiological Measures' in *Journal of Media Psychology: Theories, Methods, and Applications*, 28:4.
- Teddle, C and Tashakkori, A (2009), *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*, Los Angeles: Sage.
- Thornton, C (2017), 'Predictive Processing Simplified: The Infotropic Machine' in *Brain and Cognition*, 112: pp. 13-24.
- Tröndle, M and Tschacher, W (2016), 'Art Affinity Influences Art Reception (in the Eye of the Beholder)' in *Empirical Studies of the Arts*, 34:1: pp. 74-102.
- Tversky, A and Griffin, D (1991), in Strack, F, Argyle, M and Schwarz, N (eds) *Subjective Well-Being: An Interdisciplinary Perspective*, Oxford: Pergamon Press pp. 101-118.
- Varey, CA and Kahneman, D (1992), 'Experiences Extended across Time: Evaluation of Moments and Episodes' in *Journal of Behavioral Decision Making*, 5:3: pp. 169-185.
- Walmsley, B (2019), *Audience Engagement in the Performing Arts: A Critical Analysis*, Cham: Palgrave Macmillan.
- Wlazeł, A (2025), *The Science of Arts Engagement: Redefining Audience Research Through Psychobiological Studies of Arts Experiences*, London: Routledge.