Research Article

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Is there an Art-Specific Mode? Comparing the Experience of Art Appreciation in a Gallery and a Shop Context Using VR

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Abstract: What makes the encounter with artworks so unique? Many report a certain aura of art galleries where art is typically perceived, appreciated and lauded. We enter a certain mode of art experiencing, which can render even the experience of the most banal and commonplace objects meaningful. Aesthetics philosophers have discussed this phenomenon for over 300 years, mainly regarding the experience of beauty. However, it was seldom examined empirically, especially not through exploring raw and lived interactions with art. To address this gap, we designed two separate VR environments (an art gallery and a furniture store) and exhibited the same nine artworks in each. Participants (n = 32) were randomly allocated to one of the two environments, where they were given complete freedom to interact with the artworks. Participants completed two structured interviews: immediately after and two weeks after the VR visit, and the data were analysed using Interpretive Phenomenological Analysis (IPA). Overall, five superordinate themes were identified: 1) Visual Exploration, 2) Cognitive Processing, 3) Feelings and Emotions, 4) Personal Reference, and 5) Evaluation. In almost all themes, clear differences between the groups were found: gallery participants drew and linked more associations and interpretations, formed deeper sets of meanings, and reported having more peak emotional experiences and elaborate personal connections. Art processing created greater interconnections between the visual, cognitive, and affective aspects of experience, culminating in more fulfilling experiences. We conclude that there are indications that an art-specific mode of experiencing indeed exists and provide a preliminary sketch of its nature.

Keywords: art; art experience; immersion; museum; disinterestedness; aesthetic attention

1 Introduction

Imagine that you enter a furniture store in search of a new sofa for your living room. As you walk towards the desired section, you pass through the mirror section and encounter a mirror cleaning spray on one of the shelves. You immediately assume you recognise the product: it is a spray for mirrors to remove unwanted dirt. But for some reason, you begin to question the product's function. Instead of viewing it as a ubiquitous practical object, you speculate that someone placed the spray on the shelf as a critique of social status by making visible precarious jobs that are often kept out of sight, such as cleaning. As you entertain this thought, you change your mind; now

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you reason that the spray makes a metaphorical statement about how you often wish to clean up your self-image, or better still, about the plastic pollution humankind spreads around planet earth. You remember how you, too, threw your disposal coffee cup in the non-recyclable bin last week. You feel ashamed. Unable to control your emotions, you burst into tears. Shattered, you leave the furniture store.

Why is it that the above experience would seem so odd, eccentric, even concerning if it took place in a furniture store (or, for that matter, any store), but it is perfectly acceptable and even sought after and appreciated if it takes place in the art museum or the gallery? Interpretations and experiences such as those described above are likely to come about almost automatically and intuitively when we encounter pieces of art. In contrast, such patterns of processing seem displaced if applied to non-art artifacts (Iosifyan and Wolfe 2024; Muth et al. 2017). One possible reason is that people enter an art-specific mode when interacting with art, which leads them to process objects identified as art differently to how they process non-art or everyday life material, even if the objects do not differ visually. This mode of experiencing art may be highly context-dependent and would be evolutionarily maladaptive in everyday life contexts where unambiguity, clarity of perception, and fast, consequent action are primarily (and essentially) needed (Wood et al. 2002).

The current study aimed to explore the existence, nature and context-dependency of this mode. Using Virtual Reality (VR), we exposed participants to the same nine pictures, either in an art-related (gallery) or everyday life (furniture shop) setting. Two structured interviews were distributed, and responses were analysed qualitatively using Interpretive Phenomenological Analysis (IPA). We speculated that in the art context participants will show signs of a deeper and more elaborate engagement through, among others, reporting elaborate visual explorations, drawing more associations, generating varied interpretations, searching for meanings conveyed by the artists, drawing connections to their personal life, reporting feeling stronger and more varied emotions, and inhibiting practical thinking (see Table 1 for a breakdown of predicted differences between everyday life

Table 1: Summary of main predicted differences between everyday life processing and Mode of Art eXperience (MAX).

	Everyday life	**Mode of Art eXperience (MAX)**
Cognitive processing	Practical and goal-oriented	Interacting with material for the sake of interaction rather than to fulfil immediate practical goals
	Matters are largely processed involuntarily below the level of conscious awareness	Artworks, their components, context and one's sensations are attended to voluntarily and processed consciously
	Aiming to identify clear themes and acquire a quick and efficient understanding of matters and stimuli	Thinking about matters openly, embracing cognitive challenges and novelty, searching for multiple interpretations and sets of meanings in stimuli
	Operating within preexisting cognitive schemas	Creating new semantic meanings, connections and schemas through heightened use of associative thinking and abstract thinking
	Taking matters at face value through surface-level processing	Wondering about matter's underlying symbolic, metaphorical and subtextual meanings
	Minimal memorisation due to minimal attention given to the material	Increased memorisation due to the increased attention and active handling of material
Perceptual processing	Minimal sampling of sensual information beyond information necessary for object recognition	Detailed sampling of sensual information, including (in the case of visual art) size, material, colour, texture, shapes and forms, composition, symmetry, depicted objects, people and scenes, etc.
	Incoming sensory information is largely processed covertly or below the level of conscious awareness	Higher proportion of incoming sensory information is attended to overtly and processed consciously
Affective processing	Inhibiting peak emotional reactions	Embracing peak emotional reactions such as being moved and awe-inspired
	Avoiding negative emotional reactions such as horror, disgust and sadness	Actively searching for negative emotional reactions such as horror, disgust and sadness

Everyday life processing refers to typical attentional patterns devoted to the completion of daily tasks and operations. There are unquestionably countless non-art-related operations for which these attentional patterns do not apply. MAX's processing refers to components that *may* form part of an experience of art – we by no means suggest that *all* predicted components are included in any interaction with art.

processing and the concept we term Mode of Art eXperience). If this were the case, we could suggest that an art-specific mode exists, that it underlies these patterns of engagement, and that it is indeed context-dependent.

1.1 Theoretical Background

Preliminary "evidence" for an art-specific mode of processing comes from art history. In the 1910s, Marcel Duchamp began creating what he eventually termed "readymades": conceptual artworks consisting of everyday objects, sometimes assembled in different ways and sometimes presented as they are in art galleries and museums (Wood 1917). Despite the initial backlash, conceptual art has become immensely popular, making it virtually impossible to determine whether an artifact is an artwork or not based on its visual appearance alone (Haertel and Carbon 2014; Tröndle et al. 2014a,b). But this is not just a classificatory question: what seems even more confusing is a more profound question of how one should approach these objects. For instance, when detecting normal-looking glasses on a museum floor, should one search for the visitor who lost them (everyday, practical approach), or sample them perceptually while appreciating the artist's unique gesture (artistic, aesthetic approach; https://www.theguardian.com/us-news/2016/may/27/pair-of-glasses-left-on-us-gallery-floor-mistaken-for-art).

Over two centuries before Duchamp, Shaftesbury (1671-1713/1964) drew the first elaborate description of art-specific attention. Concerned with the question of judgment, Shaftesbury (1671-1713/1964) proposed that if observers approach art impractically, without reference to self-centred goals or interests, their taste and judgment will be less prone to abrupt changes resulting from momentary feelings or subjective aims. Later, Alison (see Stolnitz 1978) and, most famously, Kant (1790/1951) pushed Shaftesbury's principles forward, arguing that what determines the judgment is the attitude one adopts towards to object and not the object itself.

Since the 18th century, there have been numerous attempts to explain this aesthetic- or art-specific state. Goetz and Carbon (2024) identified 26 different conceptualisations of this unique state, ranging from Shaftesbury's initial disinterested attention to recent views proposed by empirical aesthetics scholars. Notable recent conceptualisations include art schema (Wagner et al. 2014), aesthetic attention (Nanay 2015), aesthetic attitude (Westerman 2018), and aesthetic mode of processing (Weigand and Jacobsen 2023). Notably, there is an overwhelming and hardly commensurable variety between the definitions (Goetz and Carbon 2024). Additionally, there is a lack of empirical research, with very few studies aiming to study this mode directly. Considering the similarities and differences among past conceptualisations, and in order to create theoretical unity and propose an empirically testable concept, Goetz and Carbon (2024) termed this mode MAX: Mode of Art eXperience, and defined it:

> MAX is a cognitive-affective mode involving higher-order capabilities that differs qualitatively from other modes. People adopt MAX actively but often unconsciously, prior to or during their interaction with stimuli they identify as art due to the cultural significance and experienced ambiguity of art. While in MAX, individuals explore and focus heightened attention on incoming sensory information, detach themselves from practical concerns and default ways of processing information, and draw and link together associations intuitively without a clear goal. Individuals are more open to undergoing affective experiences, including peak and negative emotions. (p. 3)

Table 1 summarises the main predicted differences between MAX and everyday life processing. We believe that individuals may adopt MAX while experiencing a large variety and forms of art (e.g., music, architecture, film, etc.) in various settings (e.g., cinema, theatre, city streets, home, etc.). We focus on visual art in an art gallery here, as art galleries provide a prototypical context to interact with art, often specifically designed to aid and encourage slow, relaxed, thoughtful and meaningful interactions with art, perhaps directed by art-specific mode of processing (Giebelhausen 2006).

1.2 Previous Research

Various lab-based studies have provided evidence for the influence of categorising objects as art on their appreciation. For example, studies presented to participants the same artworks (Cupchik et al. 2009; Kirk et al. 2009) or artworks and non-art pictures (Cupchik et al. 2009), either as art (e.g., as belonging to a gallery collection) or non-art (e.g., as computer-generated), and recorded activation in different brain areas when the stimuli were presented as art (e.g., areas related to reward and emotion regulation) compared to non-art (e.g., areas related to pragmatic object recognition). Studies also found that artworks or non-art pictures are rated as more intense (e.g., more beautiful, liked more) when presented as art, compared to non-art. Participants even evaluated stimuli generating typically aversive feelings such as sadness (Hanich et al. 2014), disgust (Wagner et al. 2014), negative emotions in general (Gerger et al. 2014), and immoral behaviour (Goetz et al. 2025) more positively when these were presented as art. Lastly, participants were better at identifying connections between images of everyday life objects when these were presented as art, suggesting that art framing increases the symbolic saliency of objects (Iosifyan and Wolfe 2024).

Taken together, these studies suggest that people approach artifacts differently when they view them as art, which consequently influences their evaluation of and emotional response to the artifacts. However, as most studies focus on liking and pleasure rates (Carbon 2018), they are more indicative of the ultimate judgment of objects than their ongoing experience. The focus on these measures also means that studies do not penetrate potentially unique cognitive aspects of art processing, such as the various multileveled interpretation possibilities enabled through the engagement with art (Kreitler and Kreitler 1972), or the experience of cognitive challenge, disequilibrium and the attempt to find or create meaning (Cupchik 2020; Muth et al. 2017). Additionally, the potential for epiphanizing, spiritual and self-transforming (Carbon 2019) and even transcendental, otherworldly (Marcuse 1979) experiences is overlooked. Essentially, it could be argued that the aspect of truly experiencing a phenomenon of interest, including, among other aspects, dynamics of tensions, reliefs, emotions and imagination (Dewey 1934/2005) is not fully considered. Additionally, the art/non-art classification manipulation employed by many studies is valuable, however, as long as it remains limited to the lab or online settings, we are unlikely to get an ecological picture regarding the possible influence of real-life art context on art experience and appreciation (Carbon 2020).

Importantly, several gallery-based and field studies supported the view that an art-specific mode exists, while overcoming some of these limitations. Artworks were rated as more arousing, interesting, positive, liked better and more of them were recalled (although this may be due to the presence of spatial cues only in the museum) when experienced in a museum compared to the lab (Brieber et al. 2015). Video works viewed in a gallery were more highly appreciated and perceived as less unstable than when viewed in the lab (Muth et al. 2017). A similar effect was found for interestingness rates in paintings (Grüner et al. 2019). Photos depicting people behaving immorally were evaluated more positively when presented as art in a physical art gallery than as art online (Goetz et al. 2025). Participants also experienced the same anger-evoking situation as less aversive when it was presented to them as part of a theatre show rather than as a real-life job interview (Wagner et al. 2016). Interestingly, the influence of art context is not limited to visual perception; people were more likely to embrace aversive scents such as sweat and urine when they were encountered in a museum or gallery exhibition (Spence 2020).

Overall, the above studies indeed illustrate a strong effect of art framing and of art context on judgments of artworks. But as argued above, the focus on evaluation (which is valuable for its own sake) is limited in its ability to explore the lived, lingering, dynamic, complex, multi-faceted art experience itself. In an interview-based study involving museum professionals, Csikszentmihalyi and Robinson (1990) found that for these people art processing is a unique activity that involves many of the faculties discussed above, such as intellect (e.g., interpretation, exploration of meaning), affect and personal resonance. Medved et al. (2004) found that through linking autobiographical details and emotional reactions to the experience of artworks, memories of artworks transform and become more integrated over time. However, as both these studies explored solely the processing of artworks, we

lack knowledge regarding the domain specificity of the findings – we cannot clearly identify the differences between art and non-art (e.g., everyday) processing.

1.3 The Current Study

To inquire into the existence and nature of an art-specific mode while overcoming the limitations of previous research, we opted for a naturalistic yet controlled art environment in which we could closely monitor and explore participants' ongoing experience (see Carbon 2020). We designed two Virtual Reality (VR) environments, where the same nine paintings (chosen through a pre-study–see Supplementary Material) were presented (see Figure 1). The first environment was typical for viewing art: an art gallery. The second environment was typical for ordinary everyday activities, yet one in which participants could anticipate encountering paintings: a furniture shop. The shop environment acted as a control condition against which reports collected in the gallery condition were evaluated. The aim was to use physical contextual differences to indirectly induce different expectations about the pictures in each condition, beyond merely stating that the objects are, or are not, art [as done by Wolz and Carbon (2014) in the case of art fakes, for example]. Note that the paintings were referred to as paintings in the gallery condition and as pictures in the shop condition to amplify the contrast between both conditions, but we will refer to them only as paintings from now on as they were, as such, all depictions of paintings.

Participants were randomly allocated to one of the two experimental conditions, where they were instructed to walk around freely and explore the room and the paintings. Additionally, participants completed a selection of statements from the Art Reception Survey (ARS) (Hager et al. 2012), whose wording was adjusted to fit the shop condition. Lastly, participants provided a think-aloud protocol where they used free speech to convey their thoughts and ideas as they engaged with the paintings and the gallery or museum space. In addition to the think-aloud protocol, qualitative data were collected at two time points in the form of written structured interviews: in the lab immediately after the VR visit, and online in a timeslot between two and three weeks after the VR visit. Due to the high volume of data, only the analysis of these interviews is reported in this paper; the remaining results will be reported in a separate paper.

To summarise, this study had three main aims. First, to explore whether art-specific processing mode exists. This is done through examining whether the interview answers point to different experiential patterns resulting from the status of the paintings being defined as art or non-art. We speculated that if such differences occur, the reason may be that gallery visitors adopted an art-specific processing mode which shop visitors did not adopt. Second, if such differences were to be found, we aimed to amend and sharpen our definition of Mode of Art eXperience (MAX) based on the results. Third, we tested the influence of context on adopting art-specific processing mode. Our prediction was that physical context will affect participants' whole Umwelt (Carbon 2026; von Uexküll 1909) and the way they approach and process the pictures – that is, their expectations, motivations, assumptions, knowledge retrieval, and subsequent perceptions, interpretations, thought patterns, emotional reactions, memories, etc.

2 Methods

2.1 Participants

Overall, 32 participants (M_{age} = 22.6 years, *age range* = 19-60, n_{female} = 27, n_{male} = 5) took part in the study. All were BSc Psychology students from the University of Bamberg who participated for course credits. Participants were randomly allocated into one of the two experimental conditions, Gallery (n = 16, M_{age} = 20.7 years, n_{female} = 14,

Figure 1: Pictures of the VR gallery (above) and shop (below) experimental conditions.

n_{male} = 2) and Shop (n = 16, M_{age} = 23.2 years, n_{female} = 13, n_{male} = 3). Note that the prominent age difference between the groups is mostly due to one participant aged 60 in the Shop condition. One participant from each condition did not complete the second interview; hence, the second interview was completed by 15 Gallery participants and 15 Shop participants. Although our introductory text clearly described the picture presentation in the Shop condition as a furniture store, it was evident that three Shop participants approached the pictures as art, repeatedly using words such as 'art', 'artwork', 'exhibition', and making art-specific references. These participants were nonetheless considered in the final analysis, even if their accounts may be misleading. This limitation will be discussed further in the Discussion.

2.2 Materials

2.2.1 Pictures

The nine pictures presented in the VR rooms were chosen through a pre-study (see Supplementary Material). We intended to choose artworks representing a large variety of themes, techniques, and styles from the Modern and Contemporary art eras, to enable to a large variety of experiences and responses and to ensure our findings are not limited to a single kind of style, theme, or era. We limited the presentation to nine pictures, to ensure the time spent in VR does not exceed 30–40 min, which was recommended by VR specialists and our own experience using the VR equipment here. Considering both the free viewing phase and the rating phase (see procedure below), including more pictures could result in unfavorable time spent in VR. Once the nine pictures were chosen, they were sourced from the relevant website (The Met open access online collection or freely provided courtesy of VR-all-Art) in the highest resolution available and then displayed in VR at their original size. This varied from 51×39 cm for the smallest painting to 150×150 cm for the largest (see Table 2). In the art gallery condition, the pictures were displayed in gilded wooden frames, and in the shop condition, they were shown as prints on canvas hanging from the ceiling on nylon threads. The pictures were organised in the room based on stylistic, visual, and content-related themes while overlooking their pre-study ratings. This is because we intended to create a thematically cohesive exhibition that fosters meaningful interaction with the individual artworks and the exhibition as a whole, despite the large artistic variety it consisted of. Therefore, for example, the three artworks with the highest impressiveness ratings were hung next to each other, on one wall, as they all depict human figures, belong to the Modern period, and are characterised by rather gloomy colour palettes. *Synchrotron* and *Between Lines* (medium impressiveness) hung next to each other, as they are both abstract black and white artworks, and *Atheist Prayer – Pray for London* and *COMP FR18* (low impressiveness) shared a wall as both employ everyday objects (flag and Exit signs) in a collage-like manner (it seems plausible this link between artistic style and impressiveness ratings is not coincidental, with figurative Modern artworks being most appreciated, followed by abstract art and lastly, rather ready-made conceptual artworks). A complete list of the artworks used in the study, their sources, ratings, and artists can be seen in Table 2. The spatial arrangement of the artworks in the room is illustrated in Figure 2. Illustrations of the artworks in the VR rooms are shown in Figure 1.

2.2.2 Interview Questions

Participants completed two structured interviews throughout the study: a shorter interview immediately after the VR visit and a longer online interview two weeks after the visit. The interviews included five and 15 questions, respectively, which can be found in the complementary material.

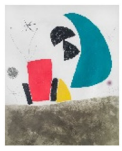
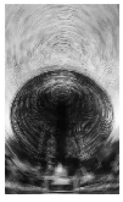
2.2.3 Apparatus

We used the Vive Pro Eye VR headset. The environment was designed to allow participants to move freely within it without the need for an additional method of locomotion, such as teleportation. Therefore, participants only needed the VR headset and no additional controllers. Our aim was to simulate the experience of visiting an art gallery as naturally as possible. The paintings were hung in a 2×2 m square in both rooms and the participants could move freely between them. The size of the surrounding gallery room was $4 \times 4 \times 3.2$ m, and the surrounding furniture shop was $7 \times 8 \times 4$ m. Both VR environments were modelled in Blender. The VR application was created using the Unity 3D game engine.

2.3 Procedure

The study was advertised as a VR study (not as a study about art so as not to reveal the study aims to those who were eventually assigned to the Shop condition) through the study booking system of the Department of General

Table 2: Nine artworks presented in the study.

Artwork's title	Artist/year*/source	Image	Impressiveness rating	Original resolution (px) [VR resolution (cm)]
COMP FR18	Florian Reinhardt ca. 2000–2018 VR-all-art		Low (2.3)	1,024 × 1,024 [150 × 150]
Atheist prayer – pray for London	Kamil Tatara 2017 VR-all-art		Low (2.3)	689 × 1,024 [40 × 60]
Espriu	Joan Miró 1975 VR-all-art		Low (2.8)	828 × 1,024 [70 × 83]
Lebron James	Tyler Gordon 2020 VR-all-art		Medium (3.5)	857 × 1,024 [61 × 91,4]
Between lines	Gerardo Liranza Durán VR-all-art		Medium (4.5)	1,541 × 1,024 [150 × 100]
Synchrotron	Anja Toncic VR-all-art		Medium (4.7)	615 × 1,024 [60 × 100]
Self-portrait	Samuel Joseph Brown, Jr. ca. 1941 Met		High (5.4)	917 × 1,200 [51 × 39]
Woman before a mirror	Henri de Toulouse-Lautrec 1897 Met		High (5.5)	929 × 1,200 [62 × 47]
Wanderer in the storm	Julius von Leypold 1835 Met		High (5.7)	1,200 × 904 [42 × 56]

Impressiveness was rated on a 1 (*not impressive at all*) to 7 (*extremely impressive*) Likert scale (for more information, please see Supplementary Material). For *Between lines* and *Synchrotron*, the creation years are not specified.

Figure 2: Floor plan showing picture hanging layout in both experimental conditions.

Psychology and Methodology of the University of Bamberg. To participate in the study, students booked an individual timeslot online. Participants were randomly allocated to either the gallery or the shop condition based on their order or arrival in the lab (starting with the gallery condition). Upon arriving in the lab, participants met a test assistant who tested all the participants in the study. The testing took place in German, and the test assistant was a native German speaker. Participants were first asked to perform an eye-sight test consisting of reading aloud letters and numbers of gradually reducing size from a poster on the door. All participants passed the test successfully. Following the test, participants were asked to provide informed consent, demographic data, and complete the Positive and Negative Affect Schedule (PANAS) (Watson et al. 1988), using the lab's computer.

Next, participants read the study instructions. Different sets of information were given to participants based on the respective experimental condition to maximise the induction of art-experiencing or consumer-related expectations and motivations. Participants in the gallery conditions were told they were about to take part in a study about art. Using the VR headset, they will be visiting a room in a prominent art gallery in Berlin, where several famous and upcoming international artists currently present their artworks. Participants were asked to walk around the gallery room and interact freely with the artworks. By contrast, those in the shop condition were told they were about to participate in a consumerism study. Using the VR glasses, they will be visiting a room in a large furniture shop in Berlin, where furniture by international firms is sold. Participants were asked to walk around the shop and interact with the pictures freely. Providing this information was important to get participants in a certain mode of experience relevant for the activity they were about to perform (viewing and engaging with art in the gallery condition and shopping in the shop condition). Had participants visited a physical gallery or shop out of their own choice, they would have likely naturally developed such expectations, hence, these introductions were crucial for increasing the ecological validity of the study. Importantly, we made sure not to add any value terms to either the artwork nor the picture descriptions, in order not to bias participants' experiences beyond the context manipulation.

Following this introductory information, participants in both conditions received almost identical instructions regarding the VR visit. They were instructed to stand in front of an artwork [picture] and say anything that came to their mind (individual words or complete sentences, about the artwork, their feelings, their thoughts, etc.); once an artwork [picture] caught their attention. This was done to allow us to match visual and audio information accurately. Participants were told they could take their time before expressing their thoughts and

that there are no right or wrong answers, as we are interested in their subjective experience. Lastly, participants were told that even after they had expressed their thoughts about an artwork [picture], they could revisit it and do so again. Similarly, participants were told that after they had expressed their thoughts about all the artworks [pictures], they could stay in the gallery room [shop] for as long as they wished and explore the artworks [pictures] further. This was done to encourage natural and contemplative behaviour.

Once participants were ready, the test assistant helped them put the VR headset on and fit it to their head. Participants were now in the gallery room or shop, and the assistant read aloud the following instructions: "You are walking in a large art gallery [furniture shop] in Berlin. You have visited a few rooms and are now in a small room where modern and contemporary art [furniture] created by various international artists [firms] is presented. Please feel free to explore the room and the artworks [pictures] in it and to give your opinion about the artworks [picture]".

The VR visit consisted of a free viewing and a rating phase. The phases were split in order not to interfere with the natural flow in the former. In the free viewing phase, participants walked around the room and reacted to the artworks [pictures] without disturbance. The test assistant did not speak unless participants initiated the communication. Participants indicated when they finished exploring the room and the artworks [pictures]. The test assistant confirmed they had reacted to all the artworks [pictures], and if they did, the test assistant read the last piece of instructions, describing the rating phase.

In the rating phase, participants were asked to walk freely around the room again, and to stand in front of an artwork [picture] and say 'ready' when they were ready to rate it. The test assistant then read aloud the statements from the shortened version of the ARS, one by one and in a set order, and participants gave their rate orally using 'strongly agree', 'agree', etc. Once participants rated all the statements regarding one picture, the test assistant thanked them and said they could move on to the following picture.

Once all the artworks [pictures] were rated and participants no longer wanted to explore the VR environment, the VR visit was completed, and the test assistant helped participants to take off the VR headset. Participants were then asked to complete the last part of the lab study. Using the same lab's computer, participants completed the PANAS (Watson et al. 1988) again, the full ARS, MAX statements, and the short interview consisted of five open-ended questions. Lastly, as we were interested in how the gallery and shop experiences unfold over time, two weeks after their lab visit, participants received an email from the VR study's email address asking them to complete a set of online questionnaires: the full ARS (Hager et al. 2012), the Art Interest Questionnaire, and a 15 open-ended interview. Participants completed the questionnaires at their own pace in their preferred place and, upon completion, emailed their answers back. Due to the high volume of data, only the analysis of the interview answers is reported in this paper, while the rest of the results will be reported in a separate paper. Importantly, these results confirmed that there was no significant difference in art interest between the groups [assessed through the Art Interest Questionnaire (Leder et al. 2006) using Independent Samples *t*-test: $t(28) = -1.215$, $p = 0.23$, *n.s.*, $d = -0.49$] The study's procedure is illustrated in Figure 3.

3 Qualitative Analysis

3.1 Interpretive Phenomenological Analysis (IPA)

IPA was used to analyse the interview answers. IPA stems from Husserl's theory of phenomenology, and it as such argues for the relevance of understanding the experiential perspective in psychology research in general (Eatough and Smith 2017). It is concerned with the detailed examination of personal lived experience from the first person's perspective. At the heart of the approach lies to hermeneutic circle: the attempt of the researcher to make sense of the participant as they try to make sense of their experience of a particular phenomenon (Eatough and Smith 2017).

Another commitment of IPA is to idiography, the study of the particular, the concrete, and the unique (Eatough and Smith 2017). As such, studies using IPA tend to include small samples of between one and 10

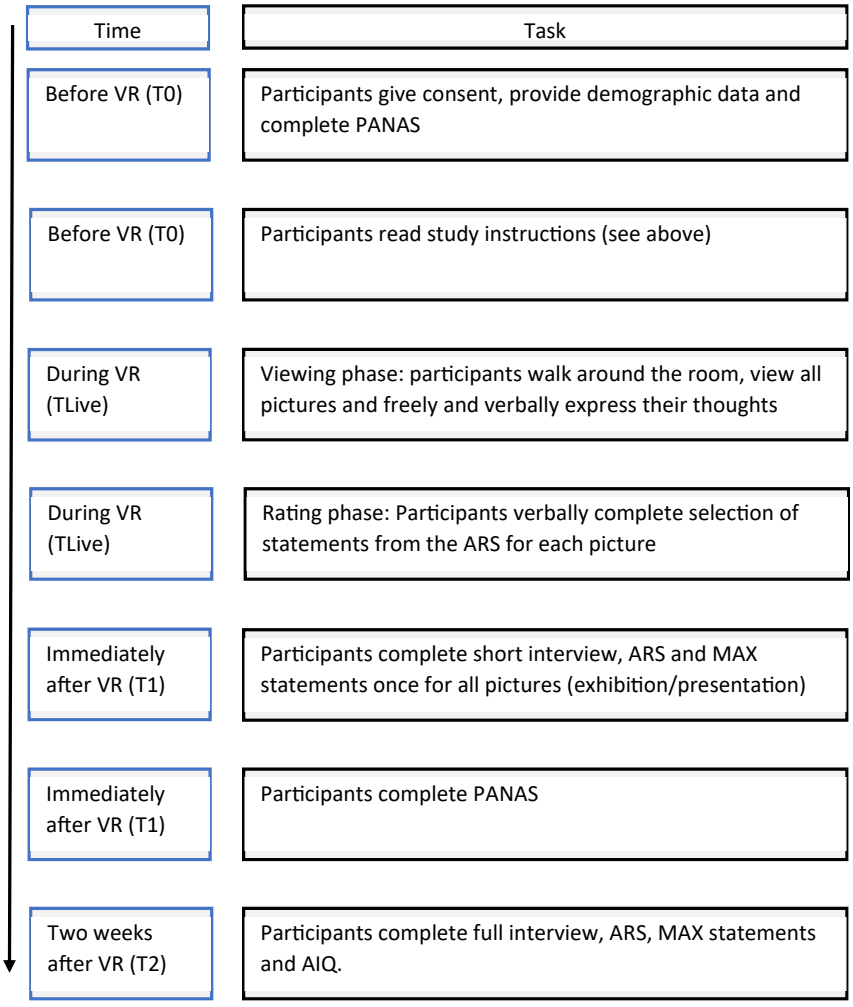


Figure 3: Study 3flow in both conditions. *Note*. Only the results from the short (T1) and long (T2) interviews are reported in this paper.

participants. Studies employing IPA also typically use semi-structured interviews and focus on topics that strongly matter to participants' personal lives (Eatough and Smith 2017). Although our study does not fulfil these recommendations, we opted for IPA because it seems very suitable to study the interaction with art, for two main reasons (Eatough and Smith 2017). First, IPA's emphasis on experience allows us to focus on this aspect, which is integral to MAX (Mode of Art *eXperience*) and that has hitherto seldom been addressed in empirical aesthetics research. Second, IPA's commitment to interpretation, both on the side of the participant and the researcher, makes it ideal to study art, a phenomenon that calls for rather vague and challenging experiences that frequently involve interpretation.

In line with IPA's recommended practice (Smith and Osborn 2024), three individuals conducted the analysis (the first author, an MSc and a BSc student, both familiar with art history, empirical aesthetics research and most importantly, blind to the experiment). The interview answers were translated from German to English using DeepL. The translation was approved as precise by several bilinguals. The first author does not speak German; therefore, he analysed the material in English. The two students were native German speakers, hence they used the original interview answers in German. Each person analysed all the interview answers separately first. Once all individuals had completed the full analysis, they met three times, discussed the results and made the required changes to achieve consensus. In each meeting, the students have shared their impressions first, to ensure minimal influence from the first author. The following findings are a result of this collaborative effort.

4 Findings

We will report the results theme by theme, always beginning with an overview of the superordinate theme before moving to the subthemes and sub-subthemes. We will present examples from both experimental conditions in each theme and discuss their similarities and differences, always starting with the Gallery condition. The T2 interview phase was included to explore how everyday life and art processing unfold over time. However, as our main interest was to explore the differences between the experimental conditions (Gallery vs. Shop) and not the interview phases (T1 and T2), we only stress the differences between interview phases if we interpret such differences as meaningful to our main research question concerning differences between these types of processing. If we do not interpret these differences as such, we freely discuss accounts from both interview phases. To assist the readers' understanding, each direct quote is accompanied by parentheses indicating the source of the quote, with G and S referring to a participant from the Gallery or the Shop condition, respectively, and T1 or T2 referring to the first interview phase conducted immediately after the VR visit or the second interview conducted two weeks after the VR visit, respectively. Hence, for example, (G, T2) would mean a quote from a Gallery participant, from the second interview phase. Lastly, accounts often address a specific artwork. However, participants frequently describe the artwork and do not name it. In such cases, we name the artwork that a participant seemed to refer to but add *(probably)* to reflect our uncertainty.

Importantly, while presenting the themes, we will discuss the connections among superordinate themes, subthemes, and sub-subthemes as they appear in the interview answers. With this, we aim to stress the natural flow and interlinkage of thoughts, ideas, feelings and emotions *as they were experienced* by participants. These were divided into discrete parts only for the sake of the analysis. We will use *italic* font whenever we mention a theme to help readers to easily identify these connections. Some quotes will appear several times throughout the analysis because they fit within and connect various themes, and their recurrence allows us to highlight this connectivity.

Table 3 shows how many participants fit within each theme. If participants produced one or more accounts that fit within a theme, they were always counted as a single entry. Therefore, the numbers in the table represent the number of participants who produced accounts that fit within the theme, not the total number of accounts. We opted for this strategy to ensure that if a single or several participants produced numerous accounts related to a single theme, their individual count did not skew the overall count. Such multiple mentions were nevertheless explicitly addressed in the qualitative analysis. Lastly, to assist readers, heading numbers in this section begin from 1.

5 Visual Exploration

The first superordinate theme comprises any comments participants made regarding their perceptual analysis of a picture. The comments covered a large spectrum, from comments about low-level features of a picture to broader comments about the look of a picture to reports indicating visual exploration of pictures. Given that the stimuli (pictures) consisted of visual material, the number of mentions seems relatively low (see Table 3).

Perhaps most interestingly, although the theme describes answers related to the perceptual processing of the stimuli, the reports are by no means limited to this aspect of experience. Rather, links between visual exploration and almost all the themes discussed below can be found. We therefore begin with this theme as it illustrates the highly varied nature of the art experience and the interwovenness of its different parts, as they appeared in our study.

For example, visual exploration shaped and was influenced by cognitive processes such as interpretation: *"The woman is looking at herself with calmness, but the background is in motion. The red tones of the background perhaps do imply some form of eroticism and physicality. Or is it about rape. All in all, I am overwhelmed and*

Table 3: Number of participants in each theme, divided by experimental condition and interview phase.

Superordinate theme	Sub-theme Sub-sub theme	Gallery condition		Shop condition	
		T1	T2	T1	T2
1) Visual exploration		7	5	8	4
2) Cognitive processing	*2.1 Creating possibilities*				
	2.1.2 Associative thinking	4	0	3	2
	2.1.3 Interpreting	11	5	5	4
	2.1.4 Intense cognitive engagement	3	5	2	1
	2.1.5 Lack of deep engagement	0	0	5	0
	2.2 Understanding				
	2.2.1 Lack of understanding	0	2	3	2
	2.2.3 Trying to understand	3	2	1	1
	2.2.4 Some understanding but desire to know more	2	0	0	2
	2.3 Exploring meaning				
	2.3.1 Meaning as singular	2	3	2	3
	2.3.2 Meaning(s) as plural	1	6	0	0
	2.4 Broad thinking	2	3	3	2
	2.5 Practical thinking	0	0	3	6
3) Feelings and emotions	*3.1 Negative feelings/emotions*	5	5	5	9
	3.2 Positive feelings/emotions	2	1	2	1
	3.3 Diminishing of boundaries	3	5	1	0
4) Personal reference	*4.1 Brief personal reference*	5	9	0	11
	4.2 Elaborate personal reference	4	8	5	4
5) Evaluation	*5.1 Exhibition evaluation*	4	1	4	3
	5.2 Experience evaluation	4	8	1	3

T1 refers to the interview conducted immediately after the VR visit, and T2 refers to the interview conducted two weeks after the VR visit. Please find descriptions of the Superordinate themes under headings 5–9 in the Findings section.

confused looking at the image" (G, T1). For one participant, the analysis of colour schemes even led to broad thoughts about the meaning of success: "*The portrait with the basketball player reminded me of the feeling that behind every success in life there is a lot of effort and also bad moments, which are usually not visible to the outside world. This could be seen through the black background on the left side and the right colourful background on the right side*" (G, T1).

Visual exploration was also linked to the experience of *feelings and emotions*. In some cases, it led to positive feelings: "*In addition, the painting had a relaxing effect on me because of the selected colours*" (G, T1), in others to negative feelings: "*The picture of the unclothed woman in front of the mirror caused an uneasy feeling in me, because it was very gloomy and painted with dark colours*" (G, T2). In some to mixed feelings: "*The Exit image made me think a bit about whether it had a positive (because of the vibrant colouring) or more negative (because of the menacing effect of the signs) effect on me*" (G, T1).

Taken together, the above examples highlight how inseparable manner and meaning are in art, not only in theory and production, but also experientially. Participants' exploration of colour, shape, composition, and figures arose curiosity, interest, and confusion, and were directly linked to a variety of emotional experiences.

6 Cognitive Processing

Cognitive processing is the richest superordinate theme, comprising five subthemes: *creating possibilities, understanding, exploring meaning, broad thinking, and practical thinking.* Considered together, these subthemes outline some of the main processes and dynamics of the art experience, as they appeared in our interviews. Clear

differences between the Gallery and Shop conditions were observed; hence, these subthemes also highlight what is unique to the art experience.

6.1 Creating Possibilities

Creating possibilities describes participants' engagement in *associative thinking, interpretation* and related processes, through which participants actively created their own schemes of meaning in relation to artworks. These processes offered opportunities for experience, both in the sense that engagement in them, by itself, seemed interesting and rewarding for participants and in that they served as gateways to other processes that enriched experience, such as *feelings and emotions*, and *personal references*. Participants' accounts illustrated how often artworks only open the door to an experience, which was then actively shaped by the participants themselves. We observed clear differences in any of these sub-subthemes between Gallery and Shop participants, which strongly suggests that the presentation of the artworks as art primed these elaborate patterns of cognitive processing. Indeed, several Gallery participants described this kind of engagement as unordinary and unusual.

6.1.1 Associative Thinking

We categorised accounts within this sub-subtheme if participants themselves mentioned the use of associative thinking, or if they described their associations. Interestingly, in both groups associations were triggered almost exclusively by the highly abstract or non-representational artworks (with the exception of the collage *COMP FR18* pictures). However, besides this similarity, the accounts of Gallery and Shop participants differed greatly. For Gallery participants the free generation of associations allowed for the creation of rewarding interactions with the highly abstract artworks, whose lack of clear figurative and thematic content was challenging at first.

One participant illustrated this process eloquently: "*The modern art image with the colourful shapes was more challenging to interpret. After a while, however, I have seen a fairly clear scene, but still thought about further interpretation possibilities. Due to the abstract painting style, the subject of the painting was not clear, but has triggered certain associations. I found that very interesting*" (G, T1). Noticeably, the participant explains the challenge *Espriu* (probably) posed. She tries to *interpret* it but encounters difficulties. In addition to her interpretative attempts, she also generates associations, which she finds interesting. The associations are described as triggered by the painting itself, making generating associations sound intuitive and effortless. The same participant later describes the process of generating associations as exciting itself: "*I found it exciting to research within myself what I associate with the pictures and what emotions are triggered*" (G, T1).

Other accounts further highlight the link between associative thinking, *feelings and emotions*. The free and voluntary use of associations opened the door to some of the most outstanding emotional experiences recorded in our interviews, which we termed *diminishing of boundaries* (see below). In such situations, participants were so immersed in the artwork that the boundaries that normally exist between a viewer and an artwork seemed almost to collapse. In the example below, *Between Lines* triggered the association of a chain carousel, which the participant associates with the feeling of vertigo: "*The black and white picture 'blurred lines' or something like that. It reminded me of a chain carousel and brought a slight feeling of vertigo*" (G, T1). Note that the participant even names the artwork "Blurred Lines" instead of *Between Lines*, perhaps reflecting the feeling of perceiving visual stimuli as blurry during the experience of vertigo.

In the Shop condition, the use of association did not differ only by quantity, but also by quality. Most of the associations did not create possibilities like in the gallery condition. They remained within their own realm and lacked the connectivity to emotional reactions, personal memories and other aspects of experience: "*It is exciting how certain associations came to me only after some time of the engagement with the pictures. However, these discussions or insights were not so important for me that I would have desire or interest in the future to deal more intensively with the works or the exhibition in general*". This account represents a tendency we clearly observed only among Shop participants: even when certain aspects of experience seemed elaborate in a similar way to that observed among Gallery participants, the participants abruptly cut this potential to develop into a meaningful

experience. It seemed that Shop participants lacked the audacity and will observed among Gallery participants to freely follow their associations towards unpredictable realms of experience.

6.1.2 Interpretation

Like *associative thinking*, *interpretation* was an activity through which participants actively generated their own idiosyncratic ideas in relation to the artworks. Sometimes participants formulated contradicting schemas of meaning around the same picture, which fuelled further interactions with it. Like *associative thinking*, *interpretation* seemed to enrich participants' experience for its own sake: it expanded possibilities and was not directed towards culminating in a single 'correct' interpretation of the picture. None of the participants expressed a need to choose among their interpretations or favour one over the others. If anything, what in some cases seemed to leave participants somewhat less rewarded was their inability to generate any interpretations at all, and thus open possibilities for further interactions with an artwork. Signs of interpretation were more apparent among Gallery participants. Interestingly, in the Gallery condition, accounts exemplifying both *associative thinking* and *interpretation* decreased dramatically between T1 and T2, perhaps suggesting that these aspects of experience fade over time, unlike *exploration of meaning*, *emotional reactions,* and forming *personal references* (discussed below), which evolved over the two-week interval.

For one Gallery participant, the ability to generate different interpretations to a single artwork led to developing interest in it: "*I was very interested in the painting of the wanderer in the storm, because many thoughts about the image came to me to interpret it*" (G, T1). Another participant, already discussed in the previous subtheme, illustrated the essence of this subtheme: "*The modern art image with the colourful shapes was more challenging to interpret. After a while, however, I saw a fairly clear scene, but still thought about further interpretation possibilities. Due to the abstract painting style, the subject of the painting was not clear, but it has triggered certain associations. I found that very interesting*" (G, T1). The participant describes an evolving process, whereby she initially finds the artwork challenging to interpret (note that interpretation is mentioned as a default activity). After a while (the participant indicates prolonged interaction with the artwork), she could recognise a fairly clear theme, but she "*…still thought about further interpretation possibilities*". Thus, although it is challenging to generate any interpretations of the artworks, the participant continues to draw further interpretations even after a "solution" is achieved. Interpretation is not a goal-oriented activity to fully understand the artwork or achieve fluency. Rather, interpretations (accompanied by *associative thinking*) are an open-ended activity that enables active, autonomous, continual, and rich interaction with the artwork.

While interpretation yielded enjoyment and interest for many Gallery participants, inability to generate interpretations (mostly in relation to highly abstract artworks) left other participants somewhat less satisfied: "*by the picture with the abstract shapes I was the most confused, because I could not interpret at all what the picture represents*" (G, T1), "*The image with the Union Jack and the image with the coloured shapes were challenging for me because I don't have a starting point of interpretation that leads me to the meaning behind the images*". The latter participant perhaps explains the rather flat experience resulting from the difficulty of generating interpretations. As interpretation is, to a degree, a process of injecting meaning into an artwork, a lack of interpretations can result in less meaningful experiences.

In the Shop condition, we found many fewer examples of interpretation in general and of open-ended joyful accounts of interpretation in particular. Most of the accounts presented interpretation as a mechanistic highly controlled and goal-oriented activity relating to *understanding*. One participant explicitly stated this linkage: "*much tried to deal with the mentioned pictures, to interpret something into it, to understand it*" (S, T2). Another participant, mentioned the strive to make sense: "*…the image with the black bars; as I said, I have not yet found an interpretation that makes sense to me*". Most of the other accounts were very short and simply listed interpretation in T2 interview as a cause for remembering pictures from the shop presentation: "*black and white painting with bars, two interpretations of the image*" (S, T2), "*Analysis of the images, interpretation*" (S, T2).

6.1.3 Intense Cognitive Engagement/Lack of Deep Cognitive Engagement

The last sub-subtheme within the *Creating possibilities* subtheme can be seen as a culmination of the two previous sub-subthemes. Among gallery participants, the prevalent engagement in *associative thinking* and *interpretation*, and the connections participants drew between those aspects and other parts of their experience, are linked to *intense cognitive engagement* with the artworks. Among shop participants, the relative absence of possibilities created through active engagement was more closely associated with a *lack of deep cognitive engagement* with the pictures.

We interpreted accounts as showcasing *intense cognitive engagement* if participants indicated heightened or prolonged thinking about or processing of an artwork or a set of artworks. For example, one participant indicated that "*the intensive and concentrated analysis of the images, thus deeper processing*" (G, T2) allowed her to remember the artworks two weeks after visiting the exhibition. In another quote already presented above, we interpreted the many thoughts and *interpretations* a single painting triggered as a sign of engaging in intense cognitive processing of it: "*I was very interested in the painting of the wanderer in the storm, because many thoughts about the image came to me to interpret it*" (G, T1). Another participant expressed her excitement resulting from acquiring insights into artworks "*…the exit work and the woman in the mirror and the self-portrait. I was able to read a lot into the works and I found the themes exciting*" (G, T1).

Two participants even described how the intense thinking and dealing with artworks marked a departure from everyday life mode of processing for them. For one participant, the concept of an art exhibition meant, perhaps, that certain links should exist between the artworks, and the search for these links, as well as the analysis of individual artworks, was very exciting: "*It was very exciting to analyse the different images and try to put them under a common denominator. I thought about images that I would normally have walked past and really enjoyed thinking about them and taking time to do so*" (G, T2).

Another participant described the experience of dealing intensely with art as rather unusual: "*I found it exciting to go to an art exhibition and to deal more intensively with art and its effect on me. I rarely do that, that I think about what I see and how it affects me*" (G, T1). The choice of words "*its effect on me*" likely refers to an effect of the artworks in terms of *feelings or emotions*. Thus, the participant describes the simultaneous processing of the same material cognitively, perceptually, and emotionally as rather unusual: she rarely *thinks* about what she *sees* and how it *affects* her. This kind of processing is enabled and encouraged, the participant explains, through the approaching of material as art.

In contrast to Gallery participants, whose *intense cognitive engagement* enabled the transformation of initially challenging interactions into rich and satisfying experiences, Shop participants' *lack of deep engagement* led to less favourable evaluations of experiences with rewarding potential. One participant summarised her experience as follows: "*Very good. There were interesting pictures. I couldn't do much with most of them, but it was still interesting to see them*" (S, T1). Note her choice of words: "*I couldn't do much with most of them…*" – *do* seem to signal a rather practical approach, as if the pictures are meant to be acted upon in a certain way. Note also the word *see* in "*…but it was still interesting to see them*", which indicates a rather passive approach where pictures are only presented to be looked at.

Several accounts pointed to a lack of effort to search for links between the presented pictures, or meaning within individual pictures, when such links or meanings are not immediately apparent: "*Very interesting, but I am not quite clear in how far the pictures fit together thematically*", "*…I like to recognise something in pictures and I do not know at all what should be represented*" (S, T1). It seems likely that most Shop participants did not assume that pictures presented in a furniture shop should convey meaning or carry some significance that should be uncovered. This resulted in unfavourable evaluations, which seem to reflect a static, monotonous and non-evolving experience.

6.2 Understanding

In contrast to the previous sub-theme, the striving for understanding, in most cases, seemed more limiting and deterministic of experience. It seemed to be elicited by the belief that artworks carry *specific ideas* that could and should be uncovered, which limited participants' motivation to generate their own ideas in response to the artworks. Nevertheless, the strive for understanding did seem to drive participants to scrutinise the artworks, as it was underlined by the assumption that artworks, as opposed to shop pictures, carry ideas or expressions that should be understood. Indeed, mentions belonging to this theme were much more apparent among Gallery participants. Interestingly, there were no descriptions of full understanding in the interviews.

6.2.1 Lack of Understanding

Given that our exhibition comprised pictures from various styles created almost exclusively by unknown artists and featured neither introduction nor individual descriptions of pictures, the number of participants who expressed a lack of understanding is surprisingly very low (see Table 3). Interestingly, none of the participants expressed dissatisfaction with their inability to understand the pictures.

One Gallery participant explained how this lack of situating information confused her and obscured her understanding: "*The picture with the naked woman who only had boots on confused me a bit because I couldn't understand the context and the statement at all*" (G, T1). Another participant described her wish to understand *the* meaning of some pictures. For this participant, the lack of understanding concurred with a lack of emotional resonance with the pictures: "*Particularly challenging were those whose meaning I still do not understand. Simply because I would have liked to know the meaning and the images have not triggered any specific emotions in me either*" (G, T2). Note that the participant mentions that she: "…*would have liked to know the meaning*…". Perhaps, as seen in one of the examples in the *interpretation* sub-subtheme, the assumption that pictures carry a single meaning ("*the meaning*") limited the participant's perceived freedom to think about the artwork independently and openly and create her own meaning concerning it, as her interpretation, or the meaning she finds, may not be the "correct" one.

Shop participants who expressed a lack of understanding provided shorter and less elaborate answers. They did not indicate any attempt to understand the pictures, nor did they link them to other aspects of their experience: "*The atheist prayer. Didn't make much sense to me*" (S, T1); "*the exit picture, because the statement is not quite clear to me*" (S, T2).

6.2.2 Trying to Understand

Participants who described attempts to understand the pictures generally demonstrated a deeper level of engagement than those discussed above, who lacked any understanding. For example, one Gallery participant felt pensive as she reflected on the feelings of and perhaps tried to connect with and understand the figure depicted in *Self-Portrait*: "*The self-portrait has made me a bit pensive, because I wonder why the man looks so serious and what he is experiencing or what must have happened to him that he seems a bit depressed*" (G, T1).

For another participant, the challenge to understand (probably) Esprio was stimulating: "*Challenging for me was especially the picture, which looks to my senses like painted by a toddler. I do myself difficult to understand the backgrounds of such images, which is why it also somehow stimulates me to think. I usually want to understand what the background is and what should actually be triggered*" (G, T1). The participant expects to experience predetermined thought or feeling ("*I usually want to understand… what should actually be triggered*", which like in previous examples, limits her freedom to explore it freely and *create possibilities*. This can explain why she remains somewhat passive and does not generate her own *interpretations* or *associations* in response to the picture, although the picture stimulates her thinking.

In the shop condition, the single example under this sub-subtheme conveyed a somewhat upset tone, despite the interest the picture triggered: "*The one that looked like scribbles. I didn't understand what it was supposed to*

represent or convey. I tried to find a sense in it at the beginning but didn't find one. It just looked like a toddler. But I was interested in why such a simple way of representation was chosen" (S, T1).

6.2.3 Some Understanding but Desire to Know More

Some participants were intrigued by the pictures and the aspects they felt able to grasp but wished to have been able to understand the pictures even further. The search for fuller understanding incorporated an aspect of experience not discussed yet: the connection to the artist. These participants felt that their understanding could not be complete without being made aware of the artist's intentions: "*The picture of Lebron James made me think, because I could recognise single hints to a meaning of the picture, but nevertheless I had no idea what the artist wanted to say with it*" (G, T1). Another participant seemed to trust more in her own intuition regarding the artist's intentions, but yet did not see her understanding as complete without this information: "*I found the self-portrait particularly challenging, because I had the feeling that the painter wants to express a deep self-questioning and dissociation from his own self, which I probably could not fully grasp without background information*" (G, T2). These examples highlight how the assumption that artworks are created by artists to communicate certain meanings and ideas adds an interpersonal dimension to the processing of art. However, a complete lack of information regarding the artist's intention, as seen above, can result in somewhat obscure experiences. Among Shop participants, only one answer seemed to indicate a wish to understand a picture further, again indicating a less elaborate processing.

6.3 Exploring Meaning

The *exploring meaning* subtheme is closely related to both the *creating possibilities* and the *understanding* of subthemes. This is because accounts describing the exploration of meaning vary tremendously among Gallery participants. For some, the exploration of meaning takes the form of a tedious scrutiny, possibly driven by a belief that artworks carry a single meaning that should be identified. Thus, finding this meaning is reminiscent of the attempts to *understand* the artwork. For others, the exploration of meaning seems a freer, more implicit process characterised by prolonged engagement in which participants seem to reflect on meanings rather than actively search for it somewhat passively. This seemed driven by the assumption that artworks can carry a myriad of different meanings, hence meaning can be constructed by the beholder. This activity is more reminiscent of the processes observed in the *creating possibilities* subtheme. In the Shop condition only evidence of the former was found.

Importantly, while the patterns of processing described in this subtheme do not differ greatly from those already discussed above, the *exploring meaning* subtheme seems to reveal a fundamental aspect of the art experience. That is, people implicitly assume that art *has* meaning(s), which drives them to actively interact with artworks to explore these meanings. By contrast, in the Shop condition, answers were very short and distanced and did not illustrate the same effort to explore meanings. Participants largely did not assume that pictures presented in a store carry meaning; and if they did, they invested minimal effort to explore it.

6.3.1 Meaning as Singular

Although the search for meaning as definite seemed to somewhat limit the participants' active involvement with the artworks, participants described it as confusing, challenging, interesting, and even thought-stimulating. Participants did illustrate a degree of involvement and although they did not "succeed" in finding ultimate meaning, they viewed the search itself positively.

One account, already discussed above, shows how, for one participant, the inability to understand the meaning triggered further thoughts: "*I couldn't tell in the exhibition what exactly was in the picture and didn't really understand the meaning. This confused me and made me think about it even more (but to no avail)*" (G, T2). Another participant described two artworks as challenging because "*…I don't have a starting point of*

interpretation that leads me to the meaning behind the images" (G, T1). For this participant, interpretation was perhaps not a way to create possibilities and expand her horizons, but rather a means to arrive at the artworks' ultimate meaning.

Shop participants were clearly less preoccupied with thinking about the meanings of pictures, perhaps because, as suggested above, they were less likely to assume that pictures presented in a furniture shop should carry any significant meaning: "*The one with the woman and the mirror – I thought more about the meaning of the picture*" (S, T1), "*Trying to understand even further the meaning behind it*" (S, T2), "*The naked woman: tries to include the current time, but it is still difficult to talk much about it or to see meaning in it*" (S, T2). Other participants simply mentioned a wish to know the meaning of a picture: "*I would like to know the meaning of the picture with the atheist*" (S, T1) or an inability to find meaning in the picture: "*the exit picture – I did not understand the meaning of it*" (S, T2).

6.3.2 Meaning(s) as Plural

For participants who viewed the meaning of artworks as plural, the exploration of meaning was freer, self-generated, and participatory. Such accounts were found only among Gallery participants, and their number rose between T1 and T2. In similarity to *associative thinking* and *interpretation*, exploration of meaning as plural acted to create possibilities rather than to arrive at concrete "solutions". However, unlike these subthemes, the process of becoming aware of meaning at times was not described as an active search, but as a contemplative uncontrolled activity. Additionally, the increase of these accounts may suggest that, due to the implicit, abstract and slowly developing nature of such processes, they continue to develop over time, even after the physical encounter with the artworks. In contrast, processes such as *associative thinking* and *interpretation* are explicit and occupy working memory during the gallery or museum visit itself, but may fade over time while less explicit processing remains.

One participant described undergoing such a process with several artworks: "*For me it was interesting that at first you often see 'nothing' in a picture and only after a longer view does a meaning reveal itself*" (G, T2). Another participant provided a similar but more detailed account with *COMP FR18*: "*…I also found the exit picture very interesting, because at the beginning I didn't think it was a particularly great work of art, but then, when I spent more time with it, I could somehow see a deeper meaning in it*" (G, T2). Note how the participant does not report seeing *the* meaning of the artwork, but *a* meaning, implying that the artwork can have several different meanings.

For other participants, the search was more active. Two participants described such searches: "*I found the exhibition very exciting. It made me think about the meaning of the pictures… Partly the pictures confused me, but it was very exciting what emotions I felt when I looked at the pictures* (G, T1); "*With the two black and white images, I couldn't really find a way. Although I liked them, and they both gave me a giddy feeling, I found it hard to find a deeper meaning. This has challenged me*" (G, T2). Both participants describe their search for meaning, but neither describes succeeding in finding meaning or connecting meaning to understanding. In fact, both participants describe undergoing relatively strong *emotional* experiences with the artworks, regardless of their inability to identify a clear meaning. Thus, it may be that for both participants the free search for meaning(s) was perhaps reflective of a more permissive approach to art experience in general, where they also enabled the artworks to influence them emotionally.

Overall, the *exploring meaning* subtheme may provide a preliminary explanation as for why people approach and process art differently from daily life phenomena. In contrast to most daily life stimuli and artifacts, people assume that artworks are made to express certain feelings, emotions, thoughts, ideas, etc., and therefore that *artworks carry certain meanings*. People then engage more deeply with artworks, either actively or passively, to explore their various meanings. When meaning is not immediately apparent, the interaction may be even longer and more participatory. What is more, people may assume that artworks do not possess *any* meaning but relatively deep, abstract, and complex meanings. This can explain the patterns of *broad thinking* observed in our interviews, which are discussed next.

6.4 Broad Thinking

For some participants, the cognitive processing of artworks included abstract and expansive thoughts, which we categorised as *broad thinking*. These patterns of thought seemed inspired by the belief discussed above that artworks possess complex and multilayered meanings. The active engagement in *associative thinking* and *interpretation*, can further explain how such wide-reaching conclusions were formed. In the Gallery condition, broad thoughts were more idiosyncratic, while in the Shop condition, they mostly referred to similar topics.

For one Gallery participant, broad thinking was inspired by visual exploration: "*The portrait with the basketball player reminded me of the feeling that behind every success in life there is a lot of effort and also bad moments, which are usually not visible to the outside world. This could be seen through the black background on the left side and the right colourful background on the right side*" (G, T1). Another Gallery participant exemplified art-specific broad thinking: "*…the woman in the mirror. Despite the time difference, it still brings up current issues of feminism. The sexualising of the woman in art history a great theme and until today it is strongly debated*" (G, T1).

Both groups' broad thoughts were mainly triggered by *Self-portrait* and *Woman before a mirror*. The subjects of those thoughts were related to self-perception and other's perception of oneself, perhaps reflecting the interests of our young sample comprised mostly psychology students. Two Shop participants described similar thoughts, inspired by *Self-Portrait*: "*self-portrait in blue. I find the contact with the outside world via reflection an exciting concept. Since we all regulate our behaviour to a certain degree and adapt it to others* (S, T1)", and (probably) *Espriu*: "*Picture with geometric figures: what one perceives is one's own construction -> connection with behaviour of people in reality, subjective perception is not the perception of others*" (S, T2).

6.5 Practical Thinking

In contrast to the far-reaching, broad thoughts described in the aforementioned subtheme, some accounts indicated narrow goal-oriented thinking reminiscent of typical everyday life processing. We interpreted such accounts as signs of practical thinking. Interestingly, we identified such accounts only among Shop participants; thus, this subtheme marks another central difference between the groups – participants described engagement in practical thinking only when they dealt with non-art pictures.

One account illustrates perhaps one of the main expected differences between the groups – an interest in buying a picture: "*…I thought the Exit painting was cool, though. I could see myself buying that…*" (S, T1). Interestingly, only one participant mentioned such interest. This could be due to the use of VR and the study settings, which meant that pictures could not actually be purchased, and that participants, unlike typical shop visitors, probably lacked the explicit motivation to buy any items. Two additional participants provided monetary-conscious answers. In response to the question whether they'd like to visit the picture presentation outside of VR, they responded: "*I don't think I would go somewhere especially for that and pay 'a lot' of money. But if you are there anyway or it arises, yes*" (S, T2), and "*I wouldn't pay to watch it, maybe I would watch it for free*" (S, T2). The assumption that a payment will be required to revisit a furniture store suggests that some Shop participants did not approach the setting entirely as a shop.

7 Feelings and Emotions

Unsurprisingly, descriptions of feelings featured prominently in the interactions with the artworks. These descriptions were closely linked to the *personal connection* and *associative thinking* subthemes. Participants in both conditions clearly produced more descriptions of negative than positive feelings and emotions, especially when considering that most of the emotions described in the *diminishing of boundaries* subtheme were also of a negative nature (see Table 3). This may have been a result of the presented artworks, or, alternatively of participants embracing the experience of negative emotions in particular. Interestingly, most of the artworks that

evoked the strongest negative reactions were highly abstract, suggesting that their open-endedness invited participants to *create possibilities* not only on the cognitive level (as seen above) but also on the affective level.

7.1 Negative Feelings and Emotions

There were no apparent differences in descriptions of negative feelings and emotions between Gallery and Shop participants when considering T1 and T2 separately. Nevertheless, a closer inspection reveals a clear difference: in the Gallery condition, there was a development in the descriptions, with accounts becoming richer in T2. There were more elaborate answers, more diverse emotions, and a larger variety of paintings evoking these emotions in T2. This may have been expected, as the second interview included more questions. However, in the Shop condition, this was not the case. Although the number of accounts doubled between T1 and T2, many of the answers in T2 were short and non-elaborate. Thus, it seems that for Gallery participants, the experience lingered and evolved over time, whereas for Shop participants, this was not the case.

Among Gallery participants, approximately half of the accounts in T1 concerned *Wanderer in the storm*. Many described a feeling of loneliness: "*The landscape image with the hiker triggered a strong feeling of loneliness in me, as it reminded me of cold weather/autumn and the atmosphere in general was rather cold and lonely*" (G, T1). In T2, many accounts again described the feeling of loneliness, but in response to a greater variety of paintings. This may suggest that the time between interviews may have allowed participants to reflect on and develop emotions towards paintings that did not initially evoke feelings. One participant mentioned *COMP FR18* (notice also the *broad thinking* in the latter part): "*The Exit picture also stuck in my mind because it described loneliness in a more unconventional way. You can't really escape your life*" (G, T2).

Perhaps the time between T1 and T2 allowed participants to reflect on the exhibition more holistically, as two participants described a feeling of loneliness felt in response to various pictures in the exhibition: "*When I told my friends about the study, I briefly thought about the paintings again and how it was such a diverse exhibition – different styles, colours, eras, and in most of the paintings I saw loneliness in retrospect*" (G, T2). Another participant added an elaborated description of her feelings towards (probably) *Espriu,* with a multilayered description rich with associations and imagination: "*Many of the images triggered loneliness, for example, the abstracted image with the shapes. It looked a bit like an armchair standing in the desert under a starry sky. As if a lonely traveller could take a seat there. Often it was not negative feelings related to loneliness, but rather the solved feeling of being alone*" (G, T2).

In the Shop condition, accounts in T1 were similar to those in the Gallery conditions, with two out of the four mentioning *Wanderer in the storm.* In T2, half of the accounts were short and non-elaborate: "*The man by the lake: sadness*" (S, T2), "*The picture with the lonely hiker made me sad in a way*" (S, T2), "*Self-portrait – the feeling of loneliness*" (S, T2). Two other participants provided answers that described negative emotions directed inwardly resulting from dissatisfaction regarding their own perceived inability to process the pictures successfully: "*The picture with the grey 'metal struts' has caused confusion or initial irritation, because it looks very messy at first glance*" (S, T2), "*And basketball player: worry and shame because I couldn't remember correctly and I'm embarrassed that my general knowledge is bad*" (S, T2).

These differences between the Gallery and Shop groups suggest that the exploration one's emotions in response to artworks is an evolving process that becomes richer and more complex over time. With the pictures processed as shop pictures, the experience does not seem to linger this way: accounts became shorter, and the direct connection to the pictures weakened.

7.2 Positive Feelings and Emotions

The *positive feelings and emotions* subtheme is significantly thinner than the *negative feelings and emotions* subtheme, both in mentions and elaboration. Still, there were more and more elaborate accounts describing positive emotions in the Gallery condition, with many participants describing the feeling of being inspired.

In T1, *Wanderer in the storm* was a main evoker of negative emotions, as seen above, but one participant felt relaxed following *visual exploration* of it: "*I was very interested in the painting of the wanderer in the storm… the painting had a relaxing effect on me because of the selected colours*" (G, T1).

In T2, the two descriptions again referred to several paintings collectively, perhaps indicating a reflection of the exhibition as a whole, or an attempt to make connections between paintings: "*The images, in which people looked at themselves in the mirror, was probably thematized among other things self-reflection. I saw how different this can look and it inspired me very much*" (G, T2). One participant linked a number of the pictures and *personal reference*: "*Many images have reminded me of my childhood (as described above). The pleasure of being alone, which I sometimes feel, has given me especially the abstract image*".

In the Shop condition, only one participant described positive emotions in each interview, with an elaborate answer in T1: "*In retrospect, I found the Joan Miro (?) painting the most interesting. Because it was simple, triggered positive emotions and was somewhat ambiguous (which made me feel drawn to it)*" (S, T2) and a very short answer in T2: "*-> emotion: look into the future, hope*" (S, T2).

7.3 Diminishing of Boundaries

The last subtheme within the *feelings and emotions* superordinate theme comprises the responses we interpreted as showcasing the strongest emotional reactions. Although most of these accounts describe feelings with negative connotations, we placed them in a separate subtheme because they exemplify a different and distinct type of experience. These responses describe an experience in which participants become fully immersed within the artwork, to the degree that the boundaries that normally exist between a viewer and an artwork seem to diminish. Some responses within this subtheme are not strictly emotional, but they all seem to possess a real, penetrating, drawing-in quality. It may be that the use of VR, which is itself immersive, partly caused these experiences, but the fact that, except for one account, all the descriptions came from Gallery participants strongly suggests that it is an art-specific phenomenon. Lastly, notice that here too, abstract paintings feature predominantly as the main evokers of such powerful experiences.

As already discussed in the *associative thinking* sub-subtheme, many of these strong immersive experiences followed or were connected to associations. Such was the case with *Between lines*: "*The black and white picture "blurred lines" or something like that. It reminded me of a chain carousel and brought a slight feeling of vertigo*" (G, T1). In this case, *visual exploration* further enhanced the strong effect: "*Through the structures on the sheet, it seemed a bit as if one would be pulled into the picture, like a suction that you try to hold against*" (G, T1).

Another participant described in detail her strong experience with *Between lines*: "*I found the picture between lines particularly interesting, because it triggered the most feelings in me. I felt very much in the situation, which for me seemed very threatening, horror-like. To awaken feelings through painting I feel is the highest art. The painting technique was also very unique, in my opinion*" (G, T1). The same participant continues in another answer: "*The image 'between lines' had a very threatening and eerie effect on me. The perspective of the image made me feel very small compared to the perceived danger of the black figure in the middle*" (G, T1). In this example, the participant repeatedly describes the threatening, intimidating effect of the painting on her. This is partly driven by *visual exploration*, as she mentions the painting technique and the perspective of the painting, which made her feel very small compared to the danger she identified in the painting. The descriptions include both a collapse of boundaries ("*I felt very much in the situation…*"), and a distortion of self-perception ("*The perspective of the image made me feel very small*"). The participant praises this moving experience: "*I found the picture between lines particularly interesting, because it triggered the most feelings in me… To awaken feelings through painting I feel is the highest art…*" (G, T1). This suggests that she expected or even wished to undergo such an experience ("*... is the highest art*").

Another participant described an experience of almost entering *Between lines: "A dizzy feeling with the two black and white pictures: one looks as if a person is spinning around himself in it. I used to do that sometimes as a kid and kind of enjoyed the vertigo afterwards. The other picture gives a feeling of height. The construction is going towards the sky. The knowledge of the height and the somewhat wobbly seeming scaffolding, scare me on the one*

hand. On the other hand, I would love to climb up the scaffolding and lie down on the platform in the middle of the picture" (G, T2). The described experience involves *associative thinking ("…one looks as if a person is spinning around himself), personal connection ("…I used to do that sometimes as a kid and kind of enjoyed the vertigo afterwards…")* and imagination (" …*The construction is going towards the sky…I would love to climb up the scaffolding and lie down on the platform in the middle of the picture*"). Thus, it seems that here, too, developing strong feelings towards an artwork are not coincidental: they arise from a general openness to process the material differently, both cognitively and affectively and a will to follow one's intuitions, feelings, and thoughts to the fulfilment of the experience.

For another participant, removing the boundaries between herself and the artwork seemed to offer not only an intense emotional experience, but a remedy to her own distressed state. She described a powerful experience with (probably) *Synchrotron*: "*Yes, the image I compared to a tornado in the question. It reminded me of my emotional state that day. The image was very jumbled and built-in explosive and that is how I had felt that day. I was very confused and stressed and the picture was able to sum up those emotions very well and also that I had felt lost in those circles*" (G, T2). Unlike the previous examples, in which participants seemed to approach the artworks with neutral feelings, here the participant enters the interaction with strong feelings that somewhat define the interaction. However, she is willing to process the painting openly, using *associative thinking* "*…the image I compared to a tornado…*". She also finds a strong *personal connection* to the artwork, in the form of identification with it or projection of her own emotions onto it: "*…The image was very jumbled and built-in explosive and that is how I had felt that day. I was very confused and stressed and the picture was able to sum up those emotions very well*". The painting then provides a haven to discharge or contain her emotions, and she feels lost and absorbed in it: "*… I had felt lost in those circles*".

Lastly, other participants provided shorter descriptions of their strong experiences, suggesting that strong, absorbing experiences do not necessarily result from a prolonged engagement with an artwork; they can occur abruptly and suddenly and last shortly: "*Between lines has triggered a dynamic, stimulating effect on me, the shimmering mood reminiscent of a ride with the person who has such different 'faces'?*" (S, T1), *Exit: feeling of being trapped, search for a way out… The feeling of being pulled into a maelstrom with the spinning wheel image*" (G, T2).

8 Personal Reference

The *personal reference* superordinate theme comprises accounts in which participants drew links between the pictures and their own lives. These could take the form of recalling childhood memories, thinking of recent or current activities, or disclosing feelings and emotions related to the self or loved ones. We divided the accounts into two subthemes based on how meaningful the participants themselves perceived their reference to be. The *brief personal reference* subtheme includes descriptions in which participants are reminded of personal memories through a picture, but the descriptions are short and disconnected from other processes. The *elaborate personal reference* subtheme includes descriptions that seem more meaningful to participants, as indicated by the feelings, emotions, and thoughts the references are connected to. Some memories are reached through associations, thus linked can also be drawn to the *associative thinking* subtheme. The main clear difference between the groups is the increase in accounts showcasing *elaborate personal reference* only among Gallery participants between T1 and T2. The nature of accounts did not differ, however, suggesting that perhaps creating such personal connections is not unique to the art experience. Interestingly, as opposed to the previous sub-theme, figurative paintings feature significantly more prominently in this theme, perhaps suggesting that the representation of immediately recognisable entities from one's life triggers autobiographical memories more directly and intuitively.

8.1 Brief Personal Reference

We categorised accounts as less elaborate if participants linked a picture to their own experience but did so relatively briefly. In both conditions there was a considerable increase in accounts between T1 and T2, suggesting that the two weeks between interviews allowed for more connections to form.

Two paintings, in particular, elicited numerous self-references. One of which was *Wanderer in the storm*, that evoked memories related to hiking or the sea: "*The picture with the hiker reminded me of hikes I've taken to ruins over the years and reminded me of the beautiful moments*" (G, T1), "*The picture with the person on the coast in the storm reminded me of my own vacations at the sea*" (G, T2).

Several Gallery participants drew links between artworks and their childhood memories. With the figurative paintings, these connections seemed very immediate, as the paintings included a representation that triggered personal experiences directly: "*The picture of the British flag reminded me of my 7th grade school trip to England*" (G, T2), "*Basketball player: childhood memories…The basketball player (Lebron James), because I recognized him, used to play basketball myself, was a fan of his*" (G, T2). With a highly abstract pictures, an intermediate step was added. In the following example, the participant first draws an *association* with the abstract representation and then links it to her memories: "*The abstract colourful image with the moon and stars reminded me of the technique of carving stamps from potatoes. Thus, I thought of my childhood*" (G, T1). In other cases, the highly abstract pictures reminded participants of more abstract childhood feelings rather than defined experiences: "*The black and white abstract image reminded me of how I loved to climb trees or structures when I was younger*" (G, T2), "*The picture with the spinning person in the centre reminds me of my childhood. As a child, I loved the feeling of dizziness after spinning around in circles very quickly*" (G, T1).

In the Shop conditions, very brief accounts with direct connections were more prominent. Although we categorised all the accounts in this subtheme as less elaborate, those in the Shop condition were even more brief and less personal than in the Gallery. They did not involve associations or descriptions of feelings, but only the direct personal connection itself: "*Yes, the one with the England flag, reminded me of my youth*" (S, T2), "*The basketball player thing reminded me of a cool basketball game I went to once*" (S, T2), "*The picture with the black lines and columns reminded me of the city hustle and bustle that I experience when I go on city trips*" (S, T2).

8.2 Elaborate Personal Reference

We categorised personal references as more elaborate, not only if they were more detailed, but also if the reference seemed more meaningful to the participants themselves, in terms of the *feelings and emotions* it evoked or its general significance.

Here too, *Wanderer in the storm* appeared frequently, but it was linked to more significant recollections. One participant described a highly sensual experience: "*The picture Wanderer in a Storm made me think of my personal experiences. Being alone on the road and feeling the strong, warm wind that heralds a storm. The joy and liveliness were recalled to me while thinking about the picture*" (G, T1). For another participant, the painting evoked mixed feelings: "*The hiker picture has caused loneliness in me, because the hiker looked very alone and I feel oh sometimes alone when hiking. But the picture has also triggered a nice feeling in me, because I like hiking*" (G, T2).

The second main elicitor of personal references was *Woman in front of a mirror*. It seems likely that our sample, which mainly comprised of young women, was particularly touched by the depiction of a woman examining herself in the mirror. One Gallery participants described moments of self-observation: "*The image of the woman in front of the mirror reminded me of similar situations in my own life where I also stood in front of the mirror and thought about my identity/appearance*" (G, T2). Another participant described her physical insecurity: "*Woman in the mirror: experiences of own insecurities, not being sure if you are satisfied with your own body*" (G, T2). Shop participants described similar moments of self-quiring: "*Woman with mirror, because I also looked at myself more often in the mirror, especially when I was sad and hardly recognized me in these moments…*" (S, T2).

9 Evaluation

The last theme identified in the interviews encompasses accounts in which participants expressed their opinion of the exhibition or their experience. As these evaluations represent an overall assessment of these facets, we explored what aspects of processing are incorporated into them. Most frequently, participants mentioned *interpretation*, *feelings and emotions*, *exploring meaning*, and also words that signify active interaction, such as dealing and engaging.

As discussed in the *creating possibilities* subtheme, positive artwork evaluations often represent a positive evaluation of the interaction with the pictures themselves. Thus, a more satisfying experience is likely to result in a more positive artwork evaluation. In the same vein, positive exhibition and experience evaluations seem to reflect an overall more meaningful, interesting, personal, stimulating, emotion-evoking, and enjoyable engagement with the pictures. Throughout the analysis, it was notable that Gallery participants created more such satisfactory experiences; hence, it is not surprising that they also produced more positive overall evaluations.

9.1 Exhibition Evaluation

Among Gallery participants, exhibition evaluations were almost only positive, while negative evaluations were more prominent in the Shop condition. Additionally, it seems that Gallery participants linked their evaluations to a greater variety of aspects of their interactions with the artworks. One Gallery participant described the *mixed feelings* which arose from the exhibition, which nevertheless left a positive mark: "*I personally found the exhibition to be very diverse. Partly the pictures were a bit confusing and gloomy, but nevertheless the exhibition aroused and left positive feelings in me*" (G, T1). Another participant described the variety of the exhibition: "*I found the exhibition very interesting, as one dealt with images from different eras and directions*" (G, T1). Note the word "dealt" which seems to signify rather active engagement with the exhibition.

Lastly, one Gallery participant evaluated the exhibition in light of other art experiences. The participant felt intrigued, although she does not attend art exhibitions regularly: "*I found the exhibition very exciting. It made me think about the meaning of the pictures… Partly the pictures confused me, but it was very exciting what emotions I felt when I looked at the pictures. I don't know much about art, and I rarely go to galleries because I'm not that interested, but the exhibition made me curious. In my opinion, very interesting and good works of art were shown*" (G, T1). The participant incorporates into her evaluation aspects from her rich experience, which seems to signal openness towards the exhibition despite her little interest in art. These include *exploring meaning* ("*It made me think about the meaning of the pictures…*") and *emotions* ("*it was very exciting what emotions I felt when I looked at the pictures").*

Several Shop participants referred to the picture presentation as an exhibition. Some of these participants provided positive evaluations: "*I was very fascinated and also inspired by the exhibition*" (S, T2). One participant described the *emotions* she felt her their satisfying engagement with the pictures: "*I found the exhibition very stimulating. The pictures were able to trigger different emotions in me and the engagement with each of the pictures was very interesting*" (S, T1). One participant could not establish the connections between the pictures but still evaluated the presentation positively: "*Very positive. I am still a bit puzzled by the combination of the different images and can not yet imagine a common denominator, but the exhibition was interesting*" (S, T2).

In contrast, two Shop participants were more critical: "*I found the exhibition okay, but not particularly exciting*" (S, T2), "*I found the exhibition interesting to have 'looked at', but the images themselves could have been more appealing. It would not be an exhibition that I would recommend. It didn't catch me enough for that. I thought the Exit painting was cool, though… Without this picture the exhibition would have been even sadder with all the monotonous black and white*" (S, T2). Note the choice of words here – "*to have 'looked at'*", which seems to indicate little cognitive or affective interaction with pictures, which may explain the unfavourable evaluation of it.

9.2 Experience Evaluation

We observed many more experience evaluations in the Gallery compared to the Shop condition. This may be because Gallery participants viewed the interaction with art as an experience or because their engagement with the artworks created experiences, while for those who visited the shop, the activity did not qualify as an experience, as the approach was less attentive and more utilitarian. The descriptions themselves were on the whole positive in both groups, but in the Gallery condition, descriptions were more elaborate as participants seemed more embracing of their experience.

Several Gallery participants struggled with parts of the exhibition but still praised their experience. One participant had a pleasant experience, although she struggled with *interpretation*: "*it was very pleasant partly difficult to interpret pictures, especially this quite abstract (different shapes, blue moon) partly nice memories*" (G, T1). Another participant struggled to identify a theme for the exhibition, yet she had a joyful experience: "*Positive. Even though I didn't find the broad theme of the exhibition obvious, it was fun to reflect and engage with the works*" (G, T1). Note the words "Reflect and engage" that signify active interaction with the artworks.

Many Gallery participants evaluated their experience in the context of other art experiences and the role of art in their lives. Two participants described how rare the experience was for them and appreciated the type of engagement it fostered. The first participant mentioned the intense dealing with the artworks: "*I found it exciting to go to an art exhibition and to deal more intensively with art and its effect on me. I rarely do that, that I think about what I see and how it affects me*" (G, T1). The second stressed the aspect of thinking: "*It was a very interesting experience that made me think. I'm not usually that interested in art, but I still enjoyed looking at and engaging with the images*" (G, T2). Another participant was so satisfied that she expressed her wish to pursue similar experiences in the future: "*I really liked it, I realised that art gives me a lot and I would like to visit an art exhibition in real life as well*".

Among Shop participants, accounts were mostly negative. One response, already discussed above, was critical: "*In general, the images did not interest me very much. A few have intuitively evoked positive, others negative feelings or interested me differently. It is exciting how certain associations came to me only after some time of the argument with the pictures. However, these discussions or insights were not so important for me that I would have desire or interest in the future to deal more intensively with the works or the exhibition in general*". On the face of it, the participant describes an experience with great potential: she develops *positive and negative feelings* for the pictures, draws *associations*, engages with the pictures for a relatively prolonged time, and reaches insights. However, her negative tone ("*these discussions or insights were not so important for me that I would have desire or interest in the future to deal more intensively with the works or the exhibition in general* ") might explain the unsatisfying experiences observed among other Shop participants too. Most of the participants did not seem to approach the pictures with the intention to create significant experiences, as the Gallery participants did. Moreover, even if such experiences began to develop, participants pushed back, as if they reminded themselves that they only interact with pictures presented in a shop. Thus, very few Shop participants viewed their shop visit as an experience at all, let alone a joyful and meaningful experience.

10 Discussion

The current study aimed to investigate the existence, nature and context-dependency of art-specific attention. Participants were randomly allocated into one of two experimental conditions, where they freely interacted with the same artworks either in an art gallery or a furniture shop environment using VR. Following their VR visit, participants completed two structured interviews: immediately after and two weeks after the VR visit. We reasoned that if apparent differences in the processing of images emerge in the interviews, these will likely result from the differences in context, which acted as the main manipulation. We predicted that in the gallery condition, participants are likely to approach the images as art; hence, this context should foster art-specific processing. In

the shop condition, participants are likely to approach the images as mass-produced consumer products; hence, this context should foster processing style typical to non-art everyday life situations.

Interview answers were analysed using Interpretive Phenomenological Analysis (IPA), with the aim of exploring the lived experience of participants from the first-person perspective. Overall, five superordinate themes were identified: visual exploration, cognitive processing, feelings and emotions, personal connection, and evaluation. Cognitive processing and feelings and emotions were undoubtedly the richest superordinate themes, comprising five and three subthemes, respectively. In almost all themes, clear differences in processing emerged between the groups. Therefore, our results lend support to previous findings pointing to the existence of an art-specific mode of processing that differs from daily life processing (Cupchik et al. 2009; Gerger et al. 2014; Grüner et al. 2019; Hanich et al. 2014; Iosifyan and Wolfe 2024; Kirk et al. 2009; Muth et al. 2017; Spence 2020; Wagner et al. 2014; Wagner et al. 2016).

However, and importantly, our results do not only confirm these previous findings; they go several steps further to describe the inner workings of this art-specific processing mode. While previous studies collected predominantly evaluation data from which inferences about art processing were made, our interview results suggest that evaluation plays a relatively minor part in the experience of art itself. The current study provides insights regarding experience itself that previous studies may have overlooked. In the discussion that follows, we wish to highlight some of the main differences identified in our interviews.

Regarding visual processing, our analysis surprisingly does not point to a difference between the groups: participants who approached the images as art did not conduct more thorough visual analysis than those who approached them as pictures in a store. This may be due to the use of VR, which does not allow for the same level of visual inspection as physical paintings. However, it may be that our predictions regarding heightened perceptual exploration during art processing were inaccurate. Future research may address these questions.

By contrast, cognitively there were undoubtedly clear differences between the groups. First, Gallery participants used more associations, of a more diverse nature and with more far-reaching meanings. They allowed themselves to follow these into more varied and unusual realms of experience. Therefore, our results align with Alison (Stolnitz 1978), Fechner (Ortlieb et al. 2020), and theories regarding the processing of art compared to kitsch objects (Ortlieb and Carbon 2019), suggesting that associative thinking is a main facet of art-specific processing. Gallery participants also drew more and more diverse interpretations of the images, which at times reached very broad horizons. These findings support conceptualisations of art as a multileveled activity (Kreitler and Kreitler 1972) that is mostly appreciated when it offers a challenge (Muth et al. 2015a) and multiple points to attack (Cupchik 2020). Numerous accounts showed that even when a work of art appeared obscured, participants persisted, and even after certain interpretations were formed, engagement with the artwork lingered because it appeared satisfying and entertaining in and of itself.

By contrast, Shop participants exemplified more narrow and restricted patterns of processing. Interpretations were limited, and processing involved practical thinking. Therefore, the interview answers also support the views of Shaftesbury (1671-1713/1964) and Kant (1790/1951) that art-specific attention is, to a degree, disinterested – individuals are likely to bracket out and detach from self-centred or practical needs when processing art. The increased exploration of meaning in the Gallery condition suggests that such interactions with artworks are driven by the underlying assumption that artworks, in contrast to ordinary everyday life objects, carry meaning(s). Enquiring why this may be the case is beyond the scope of this paper, but it seems that art has always been connected to meaningful, transcendental activities such as rituals, religious activities, tribal ceremonies and monarchical or national events that extend beyond the realm of the everyday life (Benjamin 1936; Dissanayake 1988; Donald 2006; Gombrich 1995); which leads beholders to assume, even unconsciously, that artworks possess fundamental ideas.

Importantly, many Gallery participants also illustrated a need for understanding. This, too, confirms Kant's view that art processing calls for a juxtaposition of understanding and imagination. However, none of the Gallery participants expressed dissatisfaction due to a lack of understanding, and none reported achieving full understanding. Therefore, views that art processing is predominantly about achieving processing fluency (Reber et al. 2004) or mastering artworks (Leder et al. 2004; Pelowski et al. 2017) are not supported by the experiences recorded in our interviews. Our results are more in line with the view that Aesthetic Ahas (Muth and Carbon 2013), wherein

beholders achieve partial insights into the artwork's complex meaning(s) but do not fully understand the artworks, are more rewarding for beholders (Muth et al. 2015b). In our study, such processes allowed participants to continue the interaction with given artworks over the two weeks between interviews, and perhaps even beyond.

Affectively, clear differences between the groups were observed. The artworks clearly evoked more negative than positive emotions, which supports our prediction and previous findings that the experience of negative emotions is embraced in art processing (Hanich et al. 2014; Menninghaus et al. 2017; Wagner et al. 2014; Wagner et al. 2016). However, as negative emotions were also more prevalent among Shop participants, the view that this is an art-unique feature may be challenged. Nevertheless, based on our interviews, two aspects are undoubtedly unique to art processing: 1) the lingering and evolvement of emotions over time and 2) the engagement and embracement of peak emotional experiences, especially of a negative nature.

As for the first premise, art processing resulted in a prolonged engagement with one's emotions, which allowed for new emotional reactions to form, for similar reactions to develop in relation to a greater variety of artworks, and to already existing emotions to linger and solidify. This was also the case for the elaborate personal references participants formed with the artworks, which grew in number and complexity when images were processed as art. By contrast, when approached as store pictures, the emotional reaction faded over time, leaving only traces of the initial tranquillity of emotion after the two-week interval. One possible explanation for this may be that recalling information regarding personal connections (which also showed signs of development in the interviews) or emotional episodes allow beholders to form integrated memories (Medved et al. 2004). This allows beholders to "colour" and unify the various pieces of information related to the memory of an artwork, which may otherwise remain disintegrated due to the complexity and disfluency of the artwork (Medved et al. 2004). As the same process was not observed among Shop participants, our findings may suggest that this is an art-specific effect, although they cannot directly support this observation. Regardless of the cause, it seems that art-specific processing not only influences the initial encounter with the material but also the subsequent recall and experience of it. When stimuli are approached as art, the emotional openness towards them is maintained and allows the experience to grow and expand over time (Dewey 1934/2005).

Regarding the second premise, art processing at times almost led to the diminishing of aura (Benjamin 1936): the mental distance we expect to exist between a viewer and an artwork almost disappeared as participants felt drawn into or fully immersed by the artworks. These experiences often resulted from associative thinking; hence, they culminate in cognitive and affective openness towards the artworks. Interestingly, these peak emotional experiences developed in response almost exclusively to the highly abstract or non-representational paintings. The interview answers suggest that these artworks gave rise to a multilayered experience, wherein the non-figurative appearance provided greater freedom to explore possible sets of meaning using associations and open-ended interpretations, from which extreme affective experiences sprang.

This finding is especially important in juxtaposition with current research, where, due to their lack of readily recognisable forms, highly abstract artworks are portrayed as less appealing to art "novices" than to experts. One may argue that such results were acquired because highly abstract artworks (like other artworks) are often presented out of context, in the lab, on computer screens, and for a limited time; conditions that do not allow for the unique experience these artifacts call for to come to fruition (Carbon 2023). Research consequently conceptualised highly abstract artworks as requiring greater skill; therefore, based on Flow theory, we should expect that only those skilful enough will interact with them meaningfully (Csikszentmihalyi and Robinson 1990). However, our results suggest that this is not the case and that, when provided with the appropriate context, even those without formal art education or experience can form highly meaningful and moving interactions with such works. It seems that this is highly driven by entering an art-specific mode, which allows beholders to freely deal with this ambiguity through engaging in interpretation, associative thinking, searching for (even abstract) meanings, exploring their own feelings and more.

Our last superordinate theme regarded evaluation. A repeating theme in our analysis was that positive artwork evaluations often result from a satisfying and meaningful interaction with an artwork, but are then applied to the artwork itself. Thus, we can speculate that what beholders really evaluate is their own experience, triggered by the artwork, rather than the artwork itself. Given this reasoning and the fact that we recorded many more fruitful experiences in the Gallery condition, it is not surprising that Gallery participants also provided

more positive exhibition evaluations. Specifically, participants incorporated aspects of interpretation, emotional reaction, and exploration of meaning into their exhibition evaluations; aspects that indeed featured much more prominently in the art experiences.

Similarly, we recorded more and more elaborate descriptions of experience evaluation among Gallery participants. It may be that, in fact, only Gallery participants had an experience in the sense that Dewey (1934/2005) described it: a distinctive participatory activity, with rhythm characterised by tensions and reliefs, encompassed by emotions. Some Gallery participants drew links to their previous art experience, highlighting aspects of interpretation, intense thinking, and dealing with ambiguity as those that make the art experience significant for them. Other participants stressed the rarity and non-everyday nature of the experiences they had. Thus, these overall experience evaluations supported our conceptualisations of art-specific processing.

Overall, although our sample comprised psychology students who were neither necessarily interested in art nor self-motivated to visit our gallery (the study was not advertised as a study about art), many Gallery participants seemed to have engaged in intellectually stimulating, emotionally moving, and personally meaningful and memorable experiences. In this sense, our results align with Csikszentmihalyi and Robinson (1990), who proposed that art processing is characterised by intense attentional involvement sustained for its own sake and that it provides a sense of fulfilment. However, it also seems that our results challenge Csikszentmihalyi and Robinson (1990) who argued that art-specific preexisting knowledge or skills are required to face the "challenges" that artworks pose and to undergo meaningful art experiences: "…a person with only rudimentary perceptual skills, a person who has never exercised visual discrimination… will be unable to derive an aesthetic experience from any, but the most simple forms… [the intensity of enjoyment] can be achieved only by those fortunate enough to have extraordinary sensitivity to visual stimuli… most of us are not so lucky" (p. 199–204).

In fact, our analysis suggests that meaningful art experiences are not passively undergone by participants; they are actively created by them. Even in the absence of any background information about the exhibition, the artists or the artworks, and without significant previous exposure to art, our participants were capable of creating moving, awe-inspiring, stimulating, and rich experiences. It seems that, if anything, art experiences may be influenced by constructs such as openness to experience, need for closure, and ambiguity tolerance (Muth et al. 2015a) and by general interest in the presented matters rather than art-specific training or skills. Importantly, we do not wish to deny altogether that variables such as expertise may shape the art experience, but these are not decisive preconditions for having a meaningful and resonant experience.

It is important to note that our study had a few limitations. First, as mentioned above, all participants were psychology students who were not necessarily interested in art or motivated to engage with it, and there was a predominant representation of females who may interact with art differently to males (Miller and Hübner 2023; Tröndle et al. 2014a,b). Despite this, it is worth noting that most of the themes that emerged in our analysis are similar to those identified by Csikszentmihalyi and Robinson (1990), whose sample consisted of museum professionals. One notable difference is that Csikszentmihalyi and Robinson (1990) identified an intellectual response category that consisted of art historical and theoretical considerations. It seems likely that such a theme is indeed more specific to art professionals. In this context, we wish to stress that our results may suggest what is probable and possible in the processing of art; however, as a first attempt to learn about the lived art experience, our study by no means covers all of the immense variety of ways to engage with art.

Second, we opted for VR as it allowed us to simulate an art-typical environment while maintaining experimental control (Carbon 2019). However, as a simulation, our environment cannot exactly replicate real-life environments. In fact, this seemed more of a limitation in the Shop condition. Although our analysis revealed clear differences between the experimental groups, many Shop participants engaged very meaningfully with the pictures. They even referred to them as artworks or to the presentation as an exhibition. We speculate that this is unlikely to be the case had participants encountered the picture in a real furniture shop, driven by the intrinsic motivation to complete their shopping. Indeed, many Shop participants described their excitement about using VR itself, and when asked to rate how realistic each environment was, Shop participants rated it significantly less realistic than Gallery participants. Therefore, we cannot completely rule out the possibility that some shop participants viewed the pictures as a form of 'low' art rather than as everyday consumer items, as we had expected.

Additionally, while we used examples from readymade artworks throughout the paper, our exhibition featured only paintings and collage works. Future research may examine whether daily objects also allow for more meaningful experiences when labelled art, as Iosifyan and Wolfe (2024) have shown in online conditions. Based on our results, this seems likely: *COMP FR18*, which was chosen for the main study due to its low impressiveness rating in the pre-study, probably because of its depiction of banal exit signs, turned out to be one of the most cognitively stimulating and frequently mentioned artworks in the exhibition. Given these limitations and the importance of the research questions, it is clear that the current study is merely a step towards understanding context-dependent, art-specific attention rather than providing definitive proof of it.

Lastly, one of the objectives of our study was to test and amend our definition of Mode of Art eXperience (MAX). Based on our analysis, we can support the claims that art processing involves detachment from practical concerns and fosters goalless associative thinking. We can also hold to our premise that art-specific attention is characterised by a stronger will to undergo peak and negative affective experiences. The results support the prediction that most of the differences between art and everyday life processing lie at the cognitive level; this was the richest superordinate theme and the one that showed the clearest differences between the groups in our interviews. Finally, given the similarities observed between the Gallery and Shop conditions, we can also support the prediction that art and everyday life modes are not mutually exclusive: they differ qualitatively rather than categorically.

The analysis also highlighted the need for certain amendments to our definition. First, the aspects of interpretation and broad thinking featured prominently and should therefore be incorporated into the definition. Second, the long-lasting nature of art-specific attention should be stressed. Third, the interview results showed that such peak emotional experiences are not only undergone by beholders; they are also formed by them. Lastly, the interconnectivity between perceptual, cognitive and affective processing seems fostered in art processing. We did not exclude the aspect of heightened sensual processing. However, our results suggested that this may not be a feature of art-specific attention, as this finding may result from using VR instead of physical artworks. We therefore propose an amended MAX definition (changes to the original definition are in italics):

Mode of Art eXperience (MAX) is a cognitive-affective mode that involves higher-order capabilities and differs qualitatively from other modes. People adopt MAX actively but often unconsciously, prior to or during their interaction with stimuli they identify as art, due to the cultural significance and experienced ambiguity of art. *Beholders may also adopt MAX during later recollections of the artworks.* While in MAX, individuals explore and focus heightened attention on incoming sensory information, detach themselves from practical concerns and default ways of processing information, draw and link together associations *and interpretations* intuitively and *engage in patterns of broad thinking,* for no clear goal. Individuals are more open to undergoing *and forming* affective experiences, including peak and negative emotions. *MAX also intensifies the interconnectivity between perceptual, cognitive and affective processing.*

11 Conclusions

Philosophers have long debated the existence and nature of an art-specific mode of processing that defies everyday life evolutionary adaptive utilitarian processing patterns. Although recent scholars have offered multiple conceptualisations of this mode, its nature has not been systematically explored empirically, largely because of a focus on a limited subset of ultimate art evaluation rather than lived art experiences. The current study aimed to address this gap: using VR, we invited participants to freely interact with the same pictures, presented either as artworks in an art gallery or as pictures for sale in a furniture shop. We found that indeed, even if the material does not differ visually, when it is processed as art it facilitates more elaborate cognitive engagement and yields more fulfilling, meaningful and long-lasting experiences. Hence, we suggest that an art-specific mode seems to exist. While adopting this mode, beholders are less bound by everyday life heuristics and schemas: they draw and link associations and interpretations freely, search for and generate far-reaching sets of meanings, engage in symbolic and abstract thinking, and experience more peak emotional episodes and elaborate personal connections. Art processing mode also seems to foster greater interconnections between the perceptual,

cognitive, and affective aspects of experience. Given these art-specific processing patterns, art may possess unique potential for introspection and development at the individual level, and possibly even at the interpersonal and societal levels.

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