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### Beyond beauty

*How social context shapes artistic creation, reception, and impact*

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# Beyond Beauty

How Social Context Shapes Artistic  
Creation, Reception, and Impact

Rohan Dunham



# Beyond Beauty: How Social Context Shapes Artistic Creation, Reception, and Impact

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# 1

## **General Introduction**

On the morning of July 29th, 1890, the Dutch painter Vincent van Gogh passed away, virtually unknown and financially destitute, having sold only one painting during his life. His art was deeply misunderstood when he was alive, and it was only through the discovery of personal letters to his brother Theo and others close to him, that light was shed on the intense emotional investment he had made in his art, providing a glimpse into his motives. Audiences began to understand that Van Gogh had not just painted for aesthetic pleasure, but also as a way of expressing the hopes and the turmoil within him—immediately enhancing the perceived emotional significance of his work and its authenticity. The posthumous understanding of Van Gogh’s motives for creating art – his intense desire for honest self-expression – reshaped the way that audiences received, interpreted, and ultimately resonated with his work. His art was celebrated the world over.

Fast-forward to July 1937 when Pablo Picasso unveiled his painting of ‘Guernica’ at the Spanish Pavilion of the Paris International Exposition, bringing to life his raw artistic response to the bombing of a Basque town during the Spanish Civil War. The impact of Picasso’s masterpiece transcended by far its immediate context, holding up a mirror to the atrocities of conflict and human suffering. Audiences from different backgrounds – even those far removed from the devastation in Spain – found themselves empathising with the victims and thinking about the terrible impact of violence and oppression. Partly due to its sheer physical size and undeniable expressive capacity, Guernica has, to this day, had the power to stir profound emotions within viewers. Feelings of awe and being moved by the work have made viewers pause, set aside their own seemingly inconsequential concerns, and open up to sympathise with the grim reality of others. The work is still considered a fundamental example of art’s ability to broaden the viewer’s capacity to care about people they have never met.

Skip ahead again to October 2018, at Christie’s auction house in New York, where the painting ‘Portrait of Edmond Belamy’ was auctioned for \$432,500. At first glance, the painting resembled a traditional 17th Century European oil portrait, depicting a male figure dressed in black formal attire with a white collar, reminiscent of clothing from a bygone era. But, on closer inspection, the subject’s face was oddly indistinct – almost blotchy – giving the individual a ghostly quality. Adding to the intrigue, there was an equation in the bottom right-hand corner where the artist’s signature would normally appear, hinting at the unconventional origin of the work. The sale of this artwork sparked fierce outrage and heated debate, not because of its price – a sum that was not unusual in the world of fine art – but because of its implications for artistic authenticity, creativity, and the whole notion of art as a uniquely human endeavour. The controversy stemmed from the fact that the picture had been generated by an algorithm, using artificial intelligence (AI) technology. Knowing that the “artist” was not actually human raised fundamental questions about the nature of art. Was its ability to serve as a conduit for emotions, ideas, and social impact not ultimately dependent on the human identity of its creator?

So, what do these three anecdotes have in common? They highlight the point that understanding the societal significance of art requires moving beyond its content and formal features. Instead, art must be examined in a broader social context—one that considers its connection to its creator, the motives and intentions behind its creation, and the diverse kinds of responses that it elicits in its audience. These responses can have meaningful downstream consequences, shaping the way we think, feel, and relate to others. To explore these ideas, the present dissertation addresses the overarching research question: *How does the broader social context*

*influence our responses to art?* This perspective contrasts considerably with traditional approaches to the psychological study of art, which I turn to in the following section.

### **Traditional Approaches to the Study of Art**

Historically, scholars in empirical aesthetics have sought to understand people's responses to art using bottom-up approaches. In their models, aesthetic experiences arise primarily from the way that our sensory systems process the formal features of an artwork, such as shapes, colours, symmetry, and complexity for visual art (e.g., Arnheim, 1964; Berlyne, 1971; Fechner, 1876) and tempo, harmony, pitch, and surprise for music (e.g., Huron, 2008; McDermott & Hauser, 2005).

Key findings from these bottom-up approaches include the view that in visual art, viewers tend to prefer symmetry and visual harmony (Jacobsen & Höfel, 2003; Palmer & Griscom, 2013), and that in music, listeners favour certain harmonic intervals and predictability interspersed with subtle surprises (Huron, 2008; McDermott & Hauser, 2005). Across domains, the relationship between complexity and appreciation follows an inverted U-curve, with moderate complexity leading to optimal arousal (e.g., Berlyne, 1971; Chmiel & Schubert, 2017). This effect is attributed to predictability and cognitive fluency, whereby stimuli that are neither too simple nor too complex are perceived as engaging without being overwhelming.

The assumption underlying these approaches is that aesthetic appreciation is largely automatic, driven by innate preferences for certain patterns or structures, essentially making aesthetic preferences universal and evolutionarily ingrained (e.g., Nadal & Chatterjee, 2019). For example, some suggest that the preference for visual symmetry is linked to mate selection and biological fitness, explaining why people are naturally drawn to symmetrical faces and imagery (Grammer & Thornhill, 1994). And similarly, preferences for rhythmic regularity in music are thought to stem from their role in motor coordination and social bonding (Savage et al., 2020).

However, bottom-up approaches have faced criticism over time. First, the assumption of universality has been challenged by research showing that aesthetic preferences are, in fact, also influenced by cultural and individual differences. Western and East Asian participants have been shown to process images differently, with Westerners preferring focal objects and high contrast, while East Asians favour holistic compositions with balanced foreground/background relations (Masuda & Nisbett, 2001). Similarly, preferences for consonant (as opposed to dissonant) tones in music are not as universally endorsed as previously assumed (McDermott et al., 2016). Individual differences also play a role, with personality traits like openness to experience being positively associated with preferences for novelty and abstraction (Fayn et al., 2015; Feist & Brady, 2004), and prior knowledge in the form of art expertise has been shown to increase preference for more visually complex art (Silvia, 2005).

Second, bottom-up approaches have also faced challenges related to replicability. Many studies have relied on highly controlled lab conditions, raising concerns about the extent to which their findings can be generalised to more naturalistic settings where cultural, historical, and personal context shape aesthetic responses (Pelowski et al., 2017). Similarly, neuro-aesthetic studies linking brain activity to aesthetic experiences have also shown high variability, depending on task instructions and individuals' prior exposure to art (e.g., Nadal & Chatterjee, 2019). In short, while bottom-up approaches can provide valuable insights, they offer an incomplete picture because they neglect the broader contextual and psychological factors related to the aesthetic experience.

More recently, theoretical models of aesthetic experience have incorporated the role of not only these bottom-up perceptual processes, but also more top-down processes – such as individuals’ personality, art knowledge, art expertise, and cultural background – and how they shape the way that an artwork is interpreted, by providing a lens through which preferences and meaning are constructed (Leder et al., 2004; Pelowski et al., 2017; Stamkou & Keltner, 2020). This shift in focus has inspired an array of empirical work uncovering various contextual factors that influence art engagement. Some examples include studies showing that the physical context of art engagement matters, with gallery settings leading to enhanced aesthetic appreciation and emotions compared to those of a classroom setting (Szubielska et al., 2021). Presenting art together with descriptive titles can help enhance audiences’ understanding of the work (Leder et al., 2006). Curatorial framing also affects aesthetic experiences. For instance, art is perceived as more influential when framed as a revolutionary departure from prior conventions rather than simply displayed alongside similar works by contemporaries (Specker et al., 2022).

While previous theoretical approaches emphasise the role of contextual factors in shaping art’s meaning, they do not fully address the interpersonal and social dimensions that shape both its creation and its reception. Why does that matter? Because art is not just an individual experience—it is a medium through which we engage with others, challenge social boundaries, and negotiate group identities. Art is created by an artist with a particular identity, and with a specific audience in mind. It is interpreted through the lens of cultural narratives and societal beliefs, and, as a result, it has the power to influence how we perceive – and ultimately relate to – others. Yet we know surprisingly little about the way that these social dimensions affect our interactions with art—a topic we turn to in the following section.

### **A Socio-Contextualised Approach**

Scholars have increasingly highlighted the limitations of traditional approaches to the psychological study of art, emphasising the need to consider socio-historical and socio-political contexts, as well as the intentions of the artist (Bullot & Reber, 2013; Skov & Nadal, 2020; Stamkou & Keltner, 2020). Although prior research has begun to examine social influences on art experience – such as the effects of social interactions during art engagement (Pelowski et al., 2014) or the impact of others’ judgements (Era et al., 2019) – empirical work in this area is still scarce. Much of the existing work is theoretical and progress has been hindered by the lack of empirical paradigms with which to assess the effects of social context on art experience in any systematic fashion.

Considering this, the present dissertation builds on prior work by developing such empirical approaches to investigate how the social context shapes art engagement, contributing to a more socio-contextualised understanding of art. In the following chapters, I adopt a social psychological perspective, treating art not as a stand-alone artefact detached from its context, but as a cultural product created by an artist with a specific identity, driven by particular motives, and received by an audience shaped by prevailing societal beliefs. Audiences’ responses, in turn, have the potential to influence social attitudes, behaviour, and even society at large. To investigate these dynamics, I aim to answer three sub-questions.

First, *‘Why do artists create art, and how do their motives influence audience responses?’* Scholars, artists, and laypeople alike have proposed various reasons, often distinguishing between ‘art for art’s sake’ and art created for societal purposes (Hirschman, 1983; Marshall & Forrest, 2011). Yet, little is known about the way that audiences respond when the motives are made explicit—do people appreciate art more when it comes from artists who are driven by certain motives

rather than others? Second, *‘What role does the artist’s human identity play in shaping responses to art?’* Art has traditionally been viewed as a uniquely human activity, with its value tied to the identity and intentions of its creator. However, with advancements in artificial intelligence (AI) enabling non-human agents to produce art, questions arise about how humanity – or the lack thereof – influences our engagement with art. And lastly, *‘How does art contribute to our relationships with others and society?’* Art is often celebrated for its ability to foster social cohesion (Dissanayake, 1995; Savage et al., 2020). Yet empirical evidence for this is limited, with most support coming from correlational studies linking art engagement to prosocial behaviour (e.g., Kou et al., 2020; Van de Vyver & Abrams, 2018). This leaves us questioning whether art can genuinely bring people together, and if so, through what mechanisms.

But before proceeding to answer these three questions, we first need to address a more fundamental question, namely *‘What is art?’* Drawing from common definitions, I adopt a broad conceptualisation of art as a cultural artefact that is produced and understood to be art within a given cultural context (Becker, 1982; Carroll, 2012; Stamkou & Keltner, 2020). Based on this definition, the subsequent empirical chapters conceptualise art in multiple ways, aligning with common approaches in the psychological study of art. These include selecting art from established databases featuring canonical works, employing framing manipulations (e.g., labelling stimuli as art and verifying perceived artistic value through manipulation checks), and asking participants to retrieve from memory something they themselves categorised as art. With this working definition in place, I then turn to the three sub-questions I have raised, providing background on each of them and outlining how they collectively contribute to a more socio-contextualised understanding of art.

### **Why Do Artists Create Art, and How Do Their Motives Influence Audience Responses?**

The question *‘why do artists create art?’* is one that has intrigued philosophers, psychologists, and art historians for centuries (Carroll, 2012; Gombrich, 2006). My goal has been to study the artist’s motives *within the social context*, asking how knowledge of motives affects, not so much the artist, as the audience’s appreciation of the artist’s work. Artists’ motives are important because they speak to people’s ideas about the role of art in society, whether it is by providing social commentary and instigating change (Belfiore & Bennett, 2010; Keltner & Stamkou, 2024), fostering cohesion and communicating emotions (Dissanayake, 1995; Savage et al., 2020), or enhancing self-awareness and empathy towards others (Sherman & Morrissey, 2017). But why should their motives affect the audience in any meaningful way?

Research shows that information that offers a glimpse into the artist’s background or psyche can affect the way that individuals respond to their art (Specht, 2010). This is largely because it can provide valuable socio-historical context to help interpret the work (Darda & Chatterjee, 2023) and foster feelings of social connection with the artist (Steinhardt & McClaran, 2023). Studies also show that, when engaging with art, people instinctively consider the artist’s mental states because, unlike other human-made artefacts, artworks tend to lack practical functionality, leading people to try and infer their meaning or purpose by speculating about why the artist created them in the first place (Barrett & Jucker, 2011; Jucker et al., 2014).

Individuals are thought to consider an artwork as a physical extension of the individual who created it (Newman & Smith, 2018). They tend to assume that the artist’s ‘essence’ is imbued in the work they create, reflecting their thoughts and experiences. As a result, when they are evaluating art, the audience is not only forming judgements about the artwork itself but is also, by extension, making inferences about the artist’s mental states and character.

There has been limited work on the motives of professional artists for creating art. Most of what does exist catalogues various motives (e.g., Djikic et al., 2006; McNiff, 1977), with one investigating their *intrapersonal* effects (i.e., how the motives affect the artists themselves)—albeit among college art students and not professionals (Elias & Berg-Cross, 2009). Their findings showed that creating art for self-development and self-expression was linked to better wellbeing, whereas creating art to cope with inner turmoil was associated with poorer wellbeing. Financially motivated artists showed no clear relationship between their motives and wellbeing. Importantly, this body of work has overlooked the *interpersonal* consequences of these motives—how knowledge about the artist’s motives can affect the audience. To address this gap, I developed a taxonomy of artists’ motives, enabling me (experimentally and systematically) to investigate how different motives influence audience appreciation of the artist’s work.

### **What Role Does the Artist’s Human Identity Play in Shaping Responses to Art?**

The previous section suggests that understanding art appreciation requires going beyond the artwork itself to consider the story behind it and the artist’s motives in creating it. Arguably, knowing the motives helps humanise the artwork, allowing audiences to connect with the artist and resonate more deeply with their work. I build on this idea by asking: *‘What role does the artist’s human identity play in shaping responses to art?’* If motives are central to humanising art and shaping our appreciation of it, what happens if the artist doesn’t have motives, or is not human at all, but artificial intelligence (AI)?

In doing this, I explore the broader societal discomfort surrounding creative AI that results from the realisation that human artistic ability may not be as unique as we had originally believed. By comparing responses to music that could be attributed to either AI or humans, I examine how the absence of humanity in AI-attributed music affects our emotional, cognitive, and physiological responses, and ultimately our appreciation of the work that we are listening to.

Research has shown that people generally respond less favourably to art if they believe it to be AI- and not human-created (Chamberlain et al., 2018; Shank et al., 2023). This makes sense, because AI is seen to lack the intentionality, the emotional capacity, and lived experiences that are considered to be vital ingredients in any art (Chamberlain et al., 2018). And yet, in the realm of music, AI is already capable of creating complex, emotionally evocative compositions, rivalling those of humans at the mere press of a button. In doing so, it challenges the notion that music-making is a uniquely human activity and raises an array of questions about the ethical and practical repercussions. In this work, I delve deeper, exploring the psychological mechanism driving this tendency to depreciate AI-attributed art. Is it the result of superficial anti-AI biases? Or could it be caused by more deeply embodied feelings about the threat that AI-made art poses to our sense of human uniqueness?

### **How Does Art Contribute to Our Relationships with Others and Society?**

The previous question concerns the identity of the artist and societal beliefs surrounding human creativity that shapes responses to art. It also highlights how art, when it lacks the human elements that ground it in shared experiences – such as motives – can evoke feelings of unease and even psychological distress. This disconnect appears to stem from the impersonal nature of AI-created art and the broader threat it poses to people’s sense of human uniqueness and ingroup superiority. Building on this, I examine whether, instead of creating disconnection, art can foster a sense of connection—specifically by influencing the way that we relate to others.

Great works of art have the power to provoke thought by offering unique perspectives and challenging us to look at the world in a different way (Pelowski et al., 2017). They can also

move us deeply, evoking strong emotions, personal associations, and physiological responses (Goldstein, 1980; Pelowski, 2015). However, while considerable research has been devoted to the *intrapersonal* effects that art engagement can have on the beholder (e.g., on aesthetic appreciation, emotional responses, and wellbeing; Leder et al., 2004; Pelowski et al., 2017; Trupp et al., 2022), its *interpersonal* effects (i.e., its downstream consequences on social interactions) have received less scholarly attention.

Here I investigate if interactions with art can be of benefit to society by positively affecting the way in which we relate to unfamiliar others—in this case, immigrants. One of the commonly argued benefits of art is its ability to enrich our lives by exposing us to novel perspectives and different worldviews (Christensen et al., 2023; Sherman & Morrissey, 2017), potentially catalysing meaningful social change (Stamkou & Keltner, 2020). Cross-sectional studies on art’s interpersonal outcomes have shown that engaging with a broad range of art forms is positively correlated with prosocial and cooperative behaviour (Keltner & Stamkou, 2024; Kou et al., 2020; Van de Vyver & Abrams, 2018).

However, while these studies are informative, they do not establish causality or identify the underlying psychological mechanisms that drive these effects (e.g., Leroux & Bernadska, 2014; Van de Vyver & Abrams, 2018). I focus on one affective mechanism through which art could foster social change: the bonding effects of ‘self-transcendent’ emotions. Self-transcendent emotions – such as feeling moved and awe – have been previously shown to reduce self-centredness and increase tolerance of others (Oliver et al., 2015; Piff et al., 2015; Stamkou et al., 2023). These emotions diminish our sense of self-importance, foster humility, and shift attention away from personal needs and concerns toward those of others (Stellar et al., 2018; Van Kleef & Lelieveld, 2022).

Self-transcendent emotions can also activate motivational and cognitive processes that enhance the understanding of others by fostering curiosity, prompting meaning-making, and encouraging the acquisition of new knowledge (Anderson et al., 2020; McPhetres, 2019; Schoeller & Perlovsky, 2016). In an interpersonal context, they can elicit the desire to explore others’ perspectives and to understand them, suggesting that art could enhance ‘other-understanding’ (Sherman & Morrissey, 2017). Through this research, I aim to test whether art can elicit such prosocial effects via its effect on individuals’ emotions.

## Overview of the Chapters

The three empirical chapters (Chapters 2 to 4) apply a socio-contextualised approach to the study of art by addressing the three sub-questions raised. Each chapter comprises multiple studies and employs a diverse range of research methods, including qualitative interviews, longitudinal surveys, and experimental manipulations, as well as self-reports, physiological measurements, and behavioural measures. The empirical chapters were prepared as independent articles, allowing them to be read separately, if so desired. They were co-authored, as reflected by the use of ‘we’ throughout.

Chapter 2 (total  $N = 1,004$  across five studies, including a pilot study) addresses the question ‘*Why do artists create art and how do their motives influence audience responses?*’ By exploring the motives behind art, it seeks to shed light on the way the artist’s intentions shape not only the meaning of their work, but also its reception by audiences, aligning with the broader goal of contextualising art as a product that is influenced by the creator’s intentions.

The chapter begins with interviews with professional artists designed to identify their motives (Study 2.1). Based on these insights, we developed a taxonomy of motives and used

them in an experimental manipulation to see whether and how they would influence audience appreciation of the artist's work (Studies 2.2 and a pre-registered replication in Study 2.3). Drawing on prior research on the interpersonal effects of motives outside the realm of the arts, we hypothesised that intrinsically motivated artists would be appreciated more than those who are extrinsically motivated. Lastly, we tested if this effect would hold over time by conducting a longitudinal survey (Study 2.4) in which we measured artists' motives at baseline and then followed up with the same artists two years later to assess audience appreciation.

Chapter 3 (total  $N = 472$  across three studies, including a pilot study) addresses the question '*What role does the artist's human identity play in shaping responses to art?*' It emphasises the importance of the artist's identity in shaping responses to art, exploring how the absence of human attributes in AI-generated art disrupts the audience's connection to the work. This contributes to the contextualised approach by highlighting the way societal beliefs (about human creativity) influence audience appreciation.

The goal of this chapter is to understand better the psychological mechanism that underlies the tendency to devalue AI-attributed art. Does it stem from superficial anti-AI biases or is it rooted in a deeper sense of threat that AI poses to the idea of human uniqueness? To distinguish between these two explanations, we employed physiological measures of participants' parasympathetic nervous system activity, which are less susceptible to socially desirable responding than self-report measures. A lab-in-field experiment was carried out at NEMO Science Museum in Amsterdam (Study 3.1) where participants listened to a piece of classical orchestral music after being told it was either human- or AI-generated. We measured their self-reported appreciation and emotional responses, as well as their parasympathetic nervous system activity. In the subsequent study (Study 3.2), we carried out a pre-registered replication of the previous experiment, incorporating additional measures of perceived threat and beliefs about the uniqueness of human creativity to provide further evidence.

Chapter 4 (total  $N = 33,400$  across three studies) focuses on the question '*How does art contribute to our relationships with others and society?*' It extends the socio-contextualised view of art by examining how impactful art operates within a social system to influence societal attitudes and behaviour. More specifically, we tested whether impactful art can evoke self-transcendent emotions in audiences, causing them to shift their focus away from the self and towards others, resulting in greater other-understanding and empathy. First, we sought initial correlational support using an existing (large-scale) Europe-wide dataset (Study 4.1). We then conducted an online experiment in which participants were asked to recall an impactful art experience (as opposed to an everyday experience unrelated to art) and then attribute various feeling states to immigrants, indicative of humanisation (Study 4.2). Lastly, in a pre-registered replication study, we operationalised attitudes towards immigrants in additional ways, using measures of interpersonal closeness and participants' willingness to support an immigrant cause by signing a petition (Study 4.3).

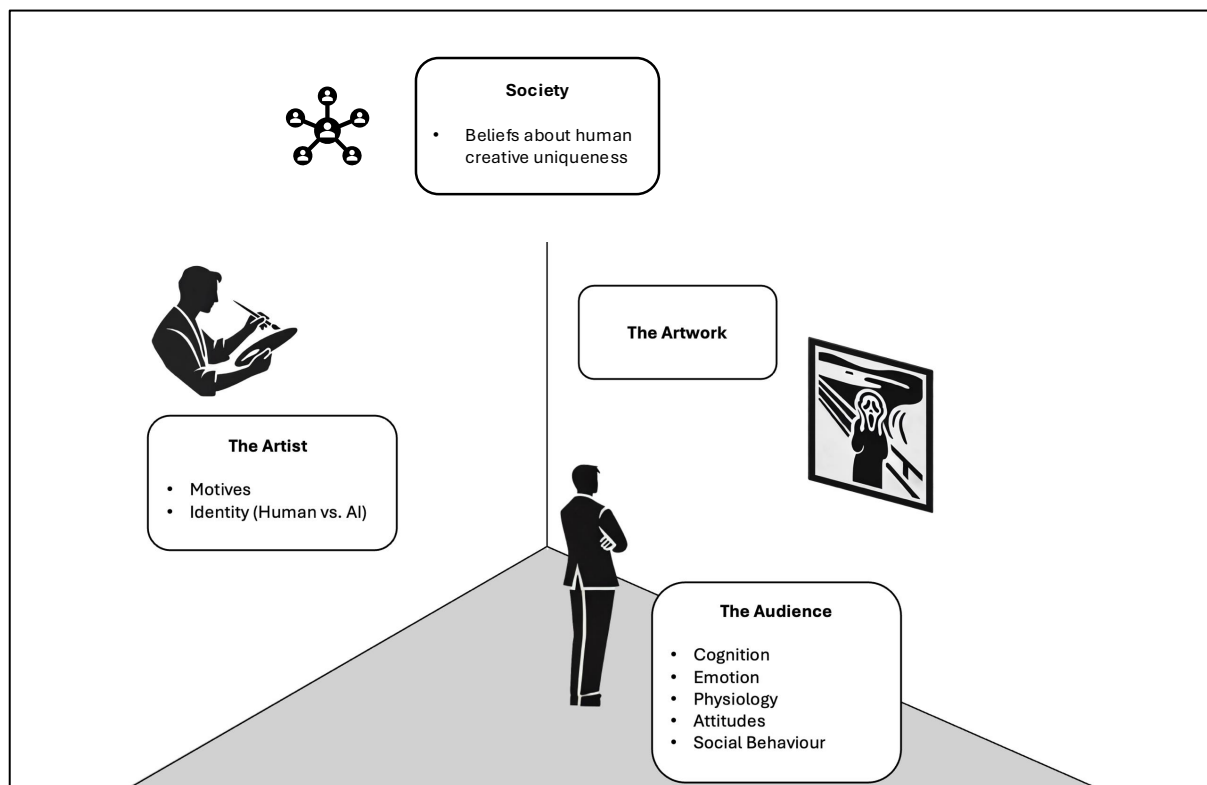
In Chapter 5, I summarise the main findings with regard to my overarching socio-contextual approach and discuss their theoretical and practical implications. The chapter also reflects on the strengths and limitations of the research and possible directions for future study.

Finally, to visually synthesise the key elements discussed, Figure 1.1 illustrates the interplay between artist, artwork, audience, and societal context, encapsulating the dissertation's overarching scope and framework. At the centre lies the artwork, which serves as the connective thread between the artist and their audience. Whereas traditional approaches often study the

artwork in isolation, this framework adopts a broader perspective by considering contextual contributions related to the artist (i.e., their motives for creating art and identity). These factors shape both the meaning and reception of the artwork and are themselves influenced by societal beliefs (i.e., about human creative uniqueness). On the audience side, the framework highlights the diverse responses that art can evoke (i.e., cognitive, emotional, physiological, attitudinal, and behavioural). These are shaped not only by the artwork itself but also by the artist and the social context in which the art is consumed. Together, this figure provides a holistic view of the dissertation's socio-contextual approach to understanding art, serving as a roadmap for the empirical chapters that follow.

### Figure 1.1

*A Socio-Contextual Framework for the Study of Art: The Interplay Between Artist, Artwork, Audience, and Society*



# 2

## **The Heart Behind the Art: Motives for Making Art and How They Influence Audience Appreciation**

This chapter is based on Dunham, R., Van Kleef, G. A., & Stamkou, E. (2025). *The Heart Behind the Art: Motives for Making Art and How They Influence Audience Appreciation*. Manuscript currently under review at *Psychology of Aesthetics, Creativity, and the Arts*.

“I want to touch people with my art. I want them to say: he feels deeply, he feels tenderly.”  
– Vincent Van Gogh

“Being good in business is the most fascinating kind of art. [...] But making money is art and working is art – and good business is the best art.”  
– Andy Warhol

Why do artists create art? This is a question that has intrigued philosophers, psychologists, and art historians for centuries (Carroll, 2012; Gombrich, 2006). As the above quotes from famous artists suggest, the motives driving an artist’s desire to create art are highly diverse. But why should an audience even care about an artist’s motives? Shouldn’t art be judged solely on its aesthetic qualities, independent of what people know about the artist? Research in psychology shows that contextual information – including insights into the artist’s background – can significantly shape responses to their work (Darda & Chatterjee, 2023), and theoretical work suggests that viewers take the artist’s motives into account when engaging with art (Bullot & Reber, 2013; Marshall & Forrest, 2011).

However, despite the apparent importance of contextual information, research on professional artists’ motives is limited and has yet to examine how these motives affect others—for instance, in terms of audience appreciation of the artist’s work. To investigate this, we first need to understand what these motives entail by developing a comprehensive taxonomy. Such a framework is currently lacking because previous research has been scattered, identifying various idiosyncratic motives without offering a unifying structure to link motives to outcomes. This lack of insight is surprising, given that curators and art historians often include motive information in curatorial narratives and accompanying literature to help audiences contextualise artworks. Similarly, artists themselves often share motive-related insights in interviews and introductions to their work. It is therefore important to understand how such information influences audiences who interact with art.

In this study, we develop a taxonomy of professional artists’ motives informed by psychological motivation theory which distinguishes between intrinsic and extrinsic motives. This enables us to systematically investigate the broader consequences of these motives. Rather than focusing on how motives affect artists themselves, we examine for the first time how these motives influence others, specifically by studying their impact on audience appreciation of their art.

### **Information on Artists Affects Responses to Their Work**

What determines how people respond to a work of art? Art appreciation is not solely driven by passive bottom-up processes interacting with the perceptual qualities of the artwork; it also involves active, top-down cognitive processing, where individuals draw on declarative knowledge and contextual information to interpret and make sense of the work (e.g., Leder et al., 2004; Pelowski et al., 2017). A substantial body of research has examined the role of various contextual influences on audience responses. These include contextual factors inherent to the aesthetic experience such as the physical context (Szubielska et al., 2021), titular information (Leder et al., 2006), contextualising information (Swami, 2013; Vuoskoski & Eerola, 2015), and curatorial narratives (Specker et al., 2022). Additionally, social influences such as social interactions during art engagement (Pelowski et al., 2014) and the impact of others’ judgements (Era et al., 2019) have been studied. Importantly, prior research has also shown that information

about the artist can shape responses to their work, including factors like the artist's name (Cleeremans et al., 2016), fame or reputation (Mastandrea & Crano, 2019), perceived eccentricity (Van Tilburg & Igou, 2014), ingroup/outgroup membership (Mastandrea et al., 2021), and even criminal background (White et al., 2014).

Although previous work on the effects of artists' motives on audience appreciation is lacking, preliminary insights can be drawn from studies on artist statements/narratives. This research shows that information offering a view into the artist's background or psyche can affect the way that individuals respond to their work (e.g., Specht, 2010). Biographical information can enhance appreciation, especially among people with limited art-relevant knowledge by providing valuable socio-historical context to help interpret the work (Darda & Chatterjee, 2023). In addition to this epistemic function, such narratives can also foster feelings of social connection with the artist. Inspiring narratives can increase appreciation due to people's desire to see the artist succeed (Steinhardt & McClaran, 2023). Conversely, narratives that paint the artist in an unflattering light can reduce appreciation of their art (Kaube et al., 2023).

Research also shows that, when engaging with art, people instinctively consider the artist's mental states (Barrett & Jucker, 2011; Jucker et al., 2014). This is because, unlike other human-made artefacts, artworks tend to lack practical functionality, leading people to try to understand their meaning or purpose by speculating about why the artist created them in the first place (Barrett & Jucker, 2011; Jucker et al., 2014; Wimsatt et al., 1946)—a tendency even observed in children as young as two years old (Preissler & Bloom, 2008). Such background information can meaningfully shape perception. For example, when people are given information about the emotional circumstances surrounding the creation of an artwork – such as whether it was inspired by joy or hardship – their perception and appreciation of the work shift accordingly (Margulis et al., 2017).

But why should artists' motives matter in particular? Artists' motives are important as they speak to people's ideas about the role of art in society, whether it be providing social commentary and instigating social change (e.g., Belfiore & Bennett, 2010; Keltner & Stamkou, 2024), fostering cohesion and communicating emotions (e.g., Dissanayake, 1995; Savage et al., 2020), or enhancing self-awareness and empathy towards others (e.g., Sherman & Morrissey, 2017). It follows that audiences may respond differently to artists' work depending on whether their motives align with the audience's expectations. This connection between the artist and their work further aligns with the notion that people view an artwork as a physical extension of the individual who created it (Newman & Smith, 2018). People tend to assume that the artist's 'essence' is imbued within the work that they create, reflecting their thoughts and personal experiences. Consequently, when evaluating a piece of art, the audience is not only forming judgements about the work itself but is also, by extension, making inferences about the artist's mental states and character.

Overall, prior work suggests that people find it difficult to separate artists from their art when making aesthetic judgements. Although previous research does not directly address the influence of artists' motives, it offers tentative evidence for our thesis by showing that, when engaging with art, people seek to form an impression of the artist and understand their mental states, which subsequently informs their aesthetic judgements. In the following sections, we explore the structure of motives, examining how different types may shape audience appreciation.

## Artists' Motives for Creating Art

A distinction is commonly made in psychological motivation theory between intrinsic and extrinsic motives (Benabou & Tirole, 2003; Deci & Ryan, 1985; Legault, 2016). *Intrinsic motives* refer to the drive to engage in behaviour for its inherent reinforcing qualities, such as enjoyment, interest, and satisfaction. In our case, a classic example of an intrinsically motivated artist would create art for sheer enjoyment. Conversely, *extrinsic motives* refer to the tendency to engage in behaviour for more instrumental reasons that are external to the task itself—in response to rewards, punishment, or social pressures. A common example of this would be of an artist motivated by a desire for fame and/or fortune. Prior work suggests that although intrinsic and extrinsic motives may seem to work in opposition, they need not undermine each other (Amabile, 1993). That is, artists, just like any other professionals, can be motivated by both types of motives simultaneously (Amabile et al., 1994).

Research indicates that individuals are primarily driven by intrinsic motives when engaging in ‘everyday’ creative tasks or art activities during leisure time (Benedek et al., 2020) or in educational settings (Harrington & Chin-Newman, 2017). This makes sense because they are pursued voluntarily, without the pressure of sustaining a livelihood or advancing a career. However, art professionals rely on their art for income and career development, suggesting that they are not only driven by intrinsic motives, but also by extrinsic ones pertaining to more practical concerns such as financial stability and public recognition. It is therefore important to adequately map both intrinsic and extrinsic motives to effectively study how these different motivations affect audience responses.

Research on *professional* artist’s motives for creating art is scarce and it has been largely descriptive, failing to examine how motives predict important outcomes. While it has identified and catalogued various motives, it has done so without a unifying framework or taxonomy that would facilitate a systematic investigation of motives’ predictive validity. The only study which examined outcomes tied to motives is that of (Elias & Berg-Cross, 2009). Yet it focused on non-professionals and artist-related outcomes (i.e., the relationship between adolescent art students’ motives and their own wellbeing), as opposed to professional artists’ motives and their effects on others (i.e., on viewers’ appreciation)—the focus of our investigation.

Additionally, the descriptive work on motives that exists has generally not explicitly categorised them based on the intrinsic/extrinsic distinction. The only study that compared intrinsic and extrinsic motives as such is by Stohs (1992), which examined visual artists with varying career stability. Fine artists – who created art on their own terms – were more likely to report being intrinsically motivated, while applied artists – who tailored their art to meet market demands – were more likely to be extrinsically (i.e., financially) motivated.

Prior work does provide valuable insights into various intrinsic motives, despite not explicitly labelling them as such: for instance, the drive for mastery, emotional expression, societal change, self-understanding, and coping with life’s unresolved issues, etc. (Arts Council of New Zealand, 2003; Daniel, 2018; Djikic et al., 2006; McNiff, 1977a). Yet extrinsic motives, though highly relevant, have received far less attention. Arguably, artists may be reluctant to openly discuss more practical concerns such as financial stability or recognition, which can be considered socially undesirable (Abbing, 2002) or deemed “too obvious” by scholars (e.g., McNiff, 1977). As a result, very few examples of extrinsic motives have thus far been identified: the desire to achieve immortality through one’s work, financial motives, and the desire for recognition from others (Arts Council of New Zealand, 2003; Daniel, 2018; McNiff, 1977a). In

this study, we aim to address these shortcomings by developing a taxonomy of professional artists' motives with a more balanced focus on intrinsic and extrinsic motives. This approach will allow us to determine how these distinct categories of motives differentially influence audiences' appreciation of the artist's work.

### **The Influence of Intrinsic vs. Extrinsic Motives on Appreciation**

Anecdotal evidence suggests that artists are held to a higher standard than non-artists when their motives are evaluated. That is, intrinsically motivated, selflessly devoted artists are implicitly assumed to be the norm, whereas extrinsically motivated, commercially driven artists are seen as diminishing the 'sacred' nature of art in society's eyes (Abbing, 2002). Empirical research on how third-party observers judge and respond to artists' motivations remains absent. However, insights can be drawn from the broader, emerging literature on the interpersonal effects of motivation.

People described as intrinsically motivated and who express passion for their work tend to be liked and admired (Jachimowicz et al., 2019; Wang et al., 2022; Wild et al., 1992, Wild et al., 1997). As a result, they enjoy various social benefits including positive feedback, favourable emotional reactions, self-development opportunities, status conferral, and increased support (Jachimowicz et al., 2019; Wang et al., 2022). Conversely, people driven by extrinsic motives are subject to negative stereotypes, with their desire for extrinsic rewards (such as money and status) being perceived as materialistic, self-centred, immodest, and even immoral (Kim & Pettit, 2014; Kwon et al., 2023; Van Boven et al., 2010; Yan et al., 2024). Expressions of extrinsic motives can lead to negative social consequences, including biased treatment in job recruitment, reduced prosocial behaviour from others, and stigmatisation (Derfler-Rozin & Pitesa, 2020; Kim & Pettit, 2014; Kwon et al., 2023). It is therefore unsurprising that people actively engage in impression management techniques to conceal or downplay their extrinsic motivation from others (Kirgios et al., 2020; Yan et al., 2024). Building on the above, we propose that audiences will respond more favourably to artists they perceive as being intrinsically, rather than extrinsically, motivated to create their work. Specifically, we hypothesise that intrinsically motivated artists will be appreciated more than extrinsically motivated artists.

### **Overview of Studies**

Our research had two main goals, which we addressed using a mixed-methods approach. First, we aimed to develop a taxonomy of professional artists' motives grounded in psychological motivation theory through qualitative interviews with professional artists (Study 2.1). Building on this taxonomy, we then examined how these motives influenced audience appreciation by conducting quantitative studies in which we experimentally manipulated motive information using vignettes (Studies 2.2 and 2.3—with Study 2.3 being a pre-registered replication). Finally, we conducted a longitudinal two-wave quantitative survey study in which we aimed to establish which motives predicted future audience appreciation, this time assessed from the artist's own perspective (Study 2.4). Data and analysis code for all studies except Study 1 are available on OSF ([https://osf.io/wbc2v/?view\\_only=5a9e3ea1ec164fa2af82abd516b14af9](https://osf.io/wbc2v/?view_only=5a9e3ea1ec164fa2af82abd516b14af9)). To protect participants' privacy, data from Study 1 are not made publicly available due to their identifiable nature.

#### **Study 2.1**

The goal of Study 2.1 was to investigate the motives that underlie professional artists' desire to create art. We conducted semi-structured interviews with artists and constructed a motivational taxonomy using an inductive approach. This involved thematic analysis, a method

used for identifying recurrent themes within the data (Braun & Clarke, 2006). The study was approved by the ethics committee of the authors' institution with ERB number 2020-SP-12647.

## **Method**

### ***Participants***

A convenience sample of  $N = 34$  professional artists (19 female, 15 male), based in the Netherlands and the United States ( $M_{\text{age}} = 41.73$ ,  $SD_{\text{age}} = 17.30$ , range = 19-82), was recruited through the researchers' professional and personal networks and took part on a voluntary basis. A breakdown of their artistic disciplines can be found in Supplementary Table 2.1.

### ***Procedure***

We started each interview with questions assessing demographic information. We then asked the artists to describe their professional trajectory from when they started up until the time of the interview, and what drove them to create art. We used prompts and follow-up questions when necessary to ensure that we captured sufficient breadth and depth of topic. All interviews were recorded to facilitate transcription.

### ***Measures***

We asked the artists the following open-ended questions during the interview: “What kind of art do you make?”, “Can you tell us a bit about your journey as an artist, from the moment you started to what you do today?”, “What initially drove you to start creating art?”, “What drives you to make art nowadays?”, “What is your general goal when making art?”, “Are there any other reasons why you would make art?”, and “Where do you see yourself in 10 years in your career/ with your art?”

### ***Analysis Strategy***

Interviews were conducted in English or Dutch, either in person or via video-conferencing software, and were manually transcribed by the first author or a research assistant. Data were analysed according to Auerbach and Silverstein's (2003) method, coding repeating ideas to identify themes. After 34 interviews, data saturation was achieved as no new themes emerged. For the first half of the interviews, double coding was used, yielding high interrater reliability  $\kappa = .88$  (Landis & Koch, 1977). The first author then completed the coding of the remaining interviews.

## **Results**

We identified 24 distinct motives from the interviews (16 intrinsic and 8 extrinsic motives), which are presented with illustrative excerpts in Supplementary Table 2.2. In the interviews, artists endorsed multiple motives to varying degrees, and in line with prior research, intrinsic and extrinsic motives were not necessarily mutually exclusive (e.g., Amabile et al., 1994). Four motives emerged as particularly prevalent: 'enjoyment', 'need to explore', 'reputational concerns', and 'affecting the audience's feelings'<sup>1</sup>.

Prior research highlights the importance of considering not only the locus of motivation (i.e., intrinsic vs. extrinsic) but also the intended target of the creative behaviour (i.e., the artist themselves vs. others; (Forgeard & Mecklenburg, 2013; Hirschman, 1983). Therefore, in addition to our main distinction between intrinsic and extrinsic motives, we further subcategorised them based on whether they were self-focused or other-focused.

Ultimately, our classification resulted in four distinct clusters. The intrinsic/self-focused cluster encompassed motives that originated from within the artist and were directed toward

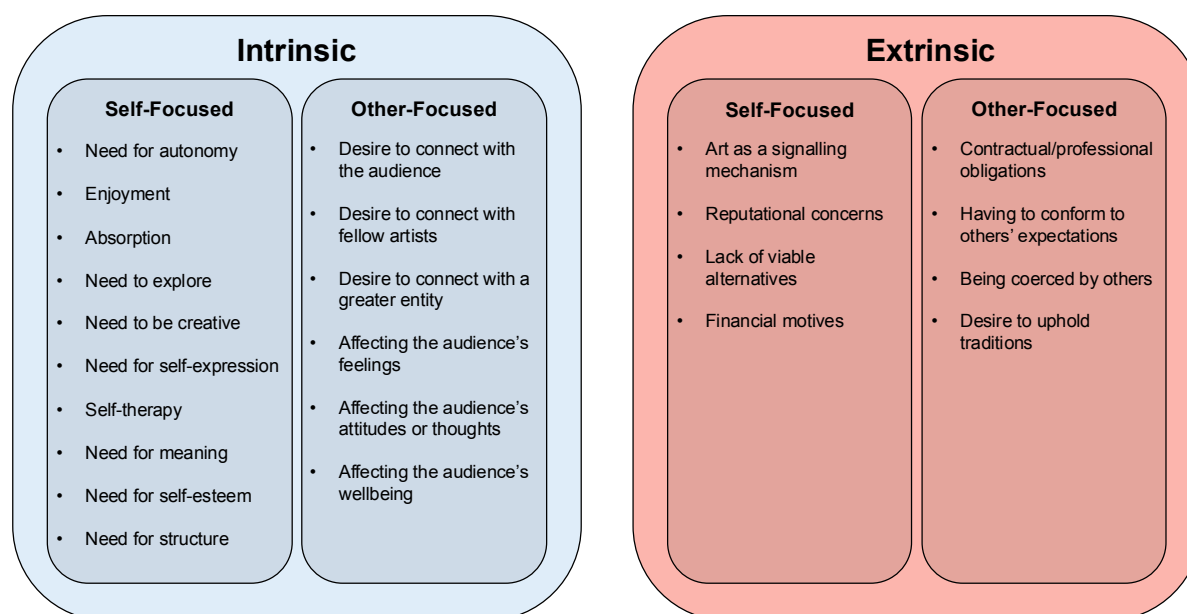
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<sup>1</sup> For further insights from our interviews, please refer to the Supplementary Materials.

benefiting the artist him-/herself (e.g., enjoyment and self-therapy). The intrinsic/other-focused cluster comprised motives that also originated internally yet the target of which were others (e.g., desire to connect with the audience and affecting the audience's feelings). The extrinsic/self-focused cluster related to motives external to the artist, yet designed to benefit the artist (e.g., reputational concerns, financial motives). Lastly, the extrinsic/other-focused cluster included motives with an external origin, yet which targeted others (e.g., having to conform to others' expectations and desire to uphold traditions). All four clusters of motives are presented in Figure 2.1.

**Figure 2.1**

*Taxonomy of Professional Artists' Motives for Creating Art*



## Discussion

The interviews with professional artists revealed 24 distinct motives. By categorising these into clusters, we created a taxonomy which formed the foundation of our subsequent studies. A key insight from Study 2.1, and in line with prior research (Amabile et al., 1994; Hirschman, 1983), is the fluidity with which artists navigate between intrinsic/ extrinsic and self-focused/other-focused motives, suggesting a complex interplay driving their desire to create art.

### Study 2.2

The goal of Study 2.2 was to examine how information on an artist's motives affects audience appreciation. We conducted an online experiment with a between-subjects design, using vignettes to manipulate motive information. We assessed audience appreciation in three complementary ways: social perceptions (i.e., appreciation of the artist), aesthetic evaluations (i.e., immediate appreciation of the art), and perceived artistic impact (i.e., long-term appreciation of the art).

First, *social perceptions* are largely based on two fundamental dimensions – warmth and competence – along which individuals evaluate others (Abele & Wojciszke, 2007; Fiske et al., 2007; Leach et al., 2007). Warmth consists of traits like friendliness, trustworthiness, and

kindness (Abele et al., 2021). An artist perceived as warm is likely seen as approachable and trustworthy (Fiske et al., 2007), fostering a deeper connection with the audience and a greater personal attachment to their work, resulting in increased loyalty and support (Marshall & Forrest, 2011). Competence includes traits like intelligence, skill, and effectiveness (Abele et al., 2021). An artist perceived as competent is likely to be respected for their abilities and expertise (Fiske et al., 2007), enhancing their credibility and the perceived value of their work, suggesting that it is worthy of recognition (Marshall & Forrest, 2011). Together, warmth and competence shape the overall perception of the artist, potentially influencing professional opportunities for exhibitions, collaborations, and media coverage.

Second, *aesthetic evaluations* involve the appraisal of an artwork's aesthetic qualities such as its beauty and emotional impact. It directly taps into how the work is received by the audience at the time of engagement. Research suggests that aesthetic appreciation is affected by both characteristics of the artwork as well as contextual information on the artist (Bullot & Reber, 2013).

Finally, *artistic impact* refers to the lasting influence that an artwork or artist has on the audience and cultural landscape at large. It represents the artist's ability to remain relevant over the course of time and highlights their contribution to culture and innovation (Baumann, 2007). Artists who are perceived to have significant impact are more likely to be appreciated and remembered in the long run. This can ultimately lead to sustained interest in their work, ongoing exhibitions, as well as their inclusion in art history narratives (Baumann, 2007). The study was approved by the ethics review board of the authors' institution (ERB code: 2022-SP-14424).

## Method

### *Participants*

A power analysis based on a small-medium effect size ( $f = .17$ ) and .80 power recommended a minimum sample of 384 participants. Four hundred US-based participants took part in our study via Prolific, 10 of whom were excluded for failing an attention check embedded in the questionnaire, resulting in a final sample of  $N = 390$  ( $M_{\text{age}} = 45.87$  years,  $SD_{\text{age}} = 15.95$  years; 186 female, 177 male, 27 missing data). They reported mid-levels of interest in art ( $M = 4.16$ ,  $SD = 1.89$ , on a 7-point scale with higher scores reflecting greater interest).

### *Procedure*

Participants first read a backstory explaining that our team of researchers had conducted interviews with professional artists from various artistic disciplines in which they were asked about their motives for creating art. Participants were informed they would read one randomly selected interview excerpt (though they were actually randomly assigned to one of four experimental vignettes) and were asked to form an impression of the artist<sup>2</sup>. Following the manipulation, we measured social perceptions (i.e., appreciation of the artist). Next, participants were informed they would be shown 42 paintings, presented one by one, purportedly all created by the artist from the interview excerpt. We assessed their aesthetic evaluations (i.e., immediate appreciation) using two measures: 1) participants rated each painting out of five stars, and 2) they had the option to stop viewing the artworks and proceed to the next section of the study at any time, with the assurance that their payment would remain unaffected by this decision. We recorded the number of artworks each participant chose to view. Next, a measure of the artist's

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<sup>2</sup> We ensured to not provide any additional contextual information about the supposed artist (e.g., demographics, information on their artistic discipline etc.) as these could potentially introduce confounds in our design.

perceived impact (i.e., long-term appreciation) followed. The session concluded with items assessing their familiarity with the paintings and art interest, which were measured as control variables to test the robustness of the focal effects.

### **Materials**

**Artist Motive Vignettes.** We manipulated information on the artist's motives by creating vignettes that resembled excerpts of interviews with professional artists. Each excerpt conveyed three motives that we considered to best capture the essence of each motive cluster. A pilot test demonstrated good validity for these vignettes (see the Supplementary Materials for the results of the pilot study). The following vignettes were presented to participants:

**Intrinsic/Self-Focused.** (Incorporating the motives 'need for autonomy', 'need to explore', and 'personal enjoyment').

*"Well... I create art mainly because I enjoy it. I get a lot of satisfaction from it! But I guess it also gives me this sense of independence... I can do things the way I want to do them... And when I'm busy with my art, I go into this whole process of discovery. I get to understand myself better [...] Yeah, I guess you could say art gives me a lot of personal benefits..."*

**Intrinsic/Other-Focused.** (Incorporating the motives 'desire to connect with the audience', 'desire to affect the audience's feelings', and 'desire to affect the audience's thoughts').

*"I create art because I want to connect with an audience... I want to tell them what I think about social issues that mean a lot to me. [...] Also, I want to trigger emotions in people, to move them, to challenge the way that they look at things... I suppose art is my way of reaching out to others... my way of shaping the way they think and feel about things..."*

**Extrinsic/Self-Focused.** (Incorporating the motives 'financial motives', 'reputational concerns', and 'lack of viable alternatives').

*"Well, I create art to make a living – I have bills to pay! And to be honest, I wouldn't know what else to do! But deep down, I also hope that someday my work will be recognized professionally and that I'll leave some sort of legacy... that I'll be remembered. [...] So, I guess besides the security it gives me, art is my way of achieving something in life..."*

**Extrinsic/Other-Focused.** (Incorporating the motives 'need to conform', 'desire to uphold traditions', and 'coercion').

*"To be honest, I started because the people around me were pretty much all artists... and from a young age, they expected that I'd also become one! I guess I felt like I kind of had no choice! [...] I now really feel that I have this special duty to keep the tradition alive... Art for me is all about... this sense of responsibility that I feel towards my artistic community..."*

**Artistic Stimuli.** We selected paintings by the American painter George Luks (1867-1933) for several reasons. First, we selected work by a 20<sup>th</sup>-21<sup>st</sup> century artist to ensure that it would be believable that the paintings shown could be the work of someone interviewed recently. Second, we aimed for the work to be unfamiliar to participants and neither too strongly liked nor disliked, increasing the likelihood of sufficient variance in participants' aesthetic evaluations. An exploratory analysis of paintings from the Vienna Arts Picture System (VAPS; Fekete et al. 2023) indicated that Luks' work was appropriate for our study, as it scored low on familiarity ( $M_{\text{pooled}} = 1.38$ ,  $SD_{\text{pooled}} = 1.04$  on a 7-point scale where higher scores reflected greater familiarity), and mid-range on likeability ( $M_{\text{pooled}} = 3.73$ ,  $SD_{\text{pooled}} = 1.70$  on a 7-point scale where higher scores represented greater liking).

Lastly, Luks' work spans a broad range of subject matter, including scenes, portraits, still lifes, and landscapes, which we felt would best reflect the work of artists driven by diverse

motives. We searched for as many of Luks' paintings online as possible, using the highest resolution of images available. To ensure the artist's name did not influence participants' responses, we digitally removed his signature for the experiment. The paintings were presented to participants in a consistent order to maximise variation in subject matter and style. All 42 paintings are presented in the Supplementary Materials.

### **Measures**

**Social Perceptions.** We measured the two fundamental dimensions of social perceptions (warmth and competence) using three items for each from a scale by Leach and colleagues (2007;  $\alpha = .93$  for warmth and  $\alpha = .89$  for competence). Example items included: "I find this person likeable" for warmth and "I find this person competent" (1 = *not at all*, 7 = *very much*) for competence.

**Aesthetic Evaluations.** We measured aesthetic evaluations in two ways. First, participants rated each individual painting they viewed on a scale from 1 to 5 stars, with more stars reflecting greater appreciation. We then calculated an average star rating score for each participant by dividing the sum of their ratings by the number of paintings they viewed. Second, as previously mentioned, we recorded the number of paintings viewed as an unobtrusive measure of their immediate appreciation of the artist's work.

**Perceived Artistic Impact.** We measured this variable using three items from Stankou and colleagues (2018), such as "I think that this artist has a great artistic vision" (1 = *not at all*, 7 = *very much*).

**Familiarity.** We measured familiarity with the paintings shown using the item "How familiar were the paintings you viewed earlier?" (1 = *not at all familiar*, 7 = *very familiar*).

**Art Interest.** We measured art interest with the item "I am interested in art." (1 = *strongly disagree*, 7 = *strongly agree*).

### **Results**

Correlations between focal variables are displayed in Table 2.1, with descriptive statistics and pairwise comparisons between conditions presented in Table 2.2. Participants reported being relatively unfamiliar with the paintings shown ( $M = 1.57$ ,  $SD = 1.08$ ). Our analysis plan included ANOVAs with a planned contrast between intrinsically motivated artists (i.e., intrinsic/self-focused and intrinsic/other-focused combined) and extrinsically motivated artists (i.e., extrinsic/self-focused and extrinsic/other-focused combined), followed by pairwise comparisons with a Bonferroni correction to compare differences between individual conditions. Since the number of paintings viewed (ranging from 0 to 42) constituted count data, we conducted a negative binomial regression to compare differences between conditions, followed by pairwise comparisons. Lastly, as a robustness check, we reran our focal analyses in both Studies 2.2 and 2.3 while statistically controlling for art interest and familiarity with the artworks. As this did not meaningfully alter the pattern of effects, these results are not reported in the main text, but they can be found in the Supplementary Materials.

**Table 2.1***Correlations Between Focal Variables in Study 2.2*

Variable	1.	2.	3.	4.
1. Perceived warmth <sup>a</sup>	-			
2. Perceived competence <sup>a</sup>	.79***	-		
3. Average star rating <sup>b</sup>	.37***	.36***	-	
4. Number of paintings viewed <sup>b</sup>	.08	.02	.15**	-
5. Perceived artistic impact	.64***	.71***	.36***	.07

*Note.*  $N = 390$ ; \*\*  $p < .01$ , \*\*\*  $p < .001$ ; Pearson correlations are reported except for the variable 'number of paintings viewed', for which Spearman correlations are reported; <sup>a</sup> variable measuring social perceptions of the artist; <sup>b</sup> variable measuring aesthetic appreciation.

### ***Social Perceptions***

Intrinsically motivated artists ( $M_{\text{pooled}} = 5.42$ ,  $SD_{\text{pooled}} = 1.13$ ) were perceived as warmer than extrinsically motivated artists ( $M_{\text{pooled}} = 5.04$ ,  $SD_{\text{pooled}} = 1.16$ ),  $B = 0.19$ ,  $SE = 0.06$ ,  $t(386) = 3.35$ ,  $p < .001$ .

Similarly, intrinsically motivated artists ( $M_{\text{pooled}} = 5.36$ ,  $SD_{\text{pooled}} = 1.11$ ) were perceived as more competent than extrinsically motivated artists ( $M_{\text{pooled}} = 5.07$ ,  $SD_{\text{pooled}} = 1.13$ ),  $B = 0.14$ ,  $SE = 0.06$ ,  $t(386) = 2.52$ ,  $p = .012$ .

**Table 2.2***Descriptive Statistics for Focal Variables in Studies 2.2 and 2.3*

	Intrinsic				Extrinsic			
	Self		Other		Self		Other	
	<i>M (SD)</i>	95% CI	<i>M (SD)</i>	95% CI	<i>M (SD)</i>	95% CI	<i>M (SD)</i>	95% CI
	Study 2.2							
Perceived warmth	5.70 (1.17) <sup>a</sup>	[5.47, 5.93]	5.14 (1.09) <sup>b</sup>	[4.92, 5.36]	4.98 (1.18) <sup>b</sup>	[4.74, 5.21]	5.09 (1.13) <sup>b</sup>	[4.87, 5.32]
Perceived competence	5.53 (1.15) <sup>a</sup>	[5.31, 5.75]	5.18 (1.07) <sup>ab</sup>	[4.97, 5.40]	5.12 (1.15) <sup>ab</sup>	[4.88, 5.34]	5.02 (1.10) <sup>b</sup>	[4.81, 5.25]
Average star rating	3.11 (0.96) <sup>a</sup>	[2.90, 3.30]	3.07 (0.81) <sup>a</sup>	[2.92, 3.23]	2.79 (0.77) <sup>a</sup>	[2.65, 2.94]	3.05 (0.88) <sup>a</sup>	[2.89, 3.23]
Number of paintings viewed	18.80 (14.93) <sup>ab</sup>	[15.85, 21.79]	20.74 (15.21) <sup>ab</sup>	[17.88, 23.88]	21.20 (14.73) <sup>a</sup>	[18.45, 24.21]	15.42 (13.56) <sup>b</sup>	[12.70, 18.28]
Perceived artistic impact	4.49 (1.25) <sup>a</sup>	[4.23, 4.73]	4.48 (1.17) <sup>a</sup>	[4.26, 4.73]	3.76 (1.21) <sup>b</sup>	[3.52, 4.00]	3.98 (1.28) <sup>b</sup>	[3.74, 4.24]
	Study 2.3							
Perceived warmth	5.56 (1.01) <sup>a</sup>	[5.34, 5.76]	5.18 (1.00) <sup>ab</sup>	[4.98, 5.37]	4.93 (1.28) <sup>b</sup>	[4.66, 5.18]	5.27 (1.18) <sup>ab</sup>	[4.66, 5.11]
Perceived competence	5.10 (1.01) <sup>a</sup>	[4.90, 5.32]	5.17 (0.92) <sup>a</sup>	[4.99, 5.34]	5.00 (1.10) <sup>a</sup>	[4.75, 5.23]	4.89 (1.18) <sup>a</sup>	[4.66, 5.11]
Average star rating	3.16 (0.78) <sup>a</sup>	[3.00, 3.33]	3.20 (0.75) <sup>a</sup>	[3.04, 3.36]	2.97 (0.73) <sup>a</sup>	[2.82, 3.11]	2.96 (0.75) <sup>a</sup>	[2.81, 3.10]
Perceived artistic impact	4.12 (1.19) <sup>a</sup>	[3.89, 4.37]	4.56 (0.90) <sup>c</sup>	[4.38, 4.73]	3.71 (1.11) <sup>ab</sup>	[3.51, 3.92]	3.62 (1.32) <sup>b</sup>	[3.37, 3.86]

*Note.*  $N = 390$  ( $n = 97$  in intrinsic/self,  $n = 97$  in intrinsic/other,  $n = 97$  in extrinsic/self, and  $n = 99$  in extrinsic/other conditions) in Study 2.2;  $N = 384$  ( $n = 96$  in intrinsic/self,  $n = 92$  in intrinsic/other,  $n = 97$  in extrinsic/self, and  $n = 99$  in extrinsic/other conditions) in Study 2.3; Bootstrapped 95% confidence intervals are based on 1000 samples. Means within a row not sharing the same superscript are significantly different from each other at  $p < .05$ .

### ***Aesthetic Evaluations***

The difference in star ratings given to the work of intrinsically motivated artists ( $M_{\text{pooled}} = 3.09$ ,  $SD_{\text{pooled}} = 0.89$ ) compared to extrinsically motivated artists ( $M_{\text{pooled}} = 2.92$ ,  $SD_{\text{pooled}} = 0.83$ ) was only marginally significant,  $B = 0.08$ ,  $SE = 0.04$ ,  $t(386) = 1.94$ ,  $p = .053$ , with the trend being in the expected direction.

Participants chose to view and rate an average of 19.02 ( $SD = 14.74$ ) paintings. A visual inspection of the distribution of number of paintings viewed suggested a bimodal distribution with most participants viewing either relatively few (0-10) or all 42 paintings. There was no difference in the number of paintings people were willing to view when comparing intrinsically motivated ( $M_{\text{pooled}} = 19.75$ ,  $SD_{\text{pooled}} = 15.05$ ) to extrinsically motivated artists ( $M_{\text{pooled}} = 18.30$ ,  $SD_{\text{pooled}} = 14.16$ ),  $B = 0.04$ ,  $SE = 0.04$ ,  $t(386) = 1.08$ ,  $p = .281$ .

### ***Perceived Artistic Impact***

Intrinsically motivated artists ( $M_{\text{pooled}} = 4.49$ ,  $SD_{\text{pooled}} = 1.21$ ) were thought to be more impactful than extrinsically motivated artists ( $M_{\text{pooled}} = 3.87$ ,  $SD_{\text{pooled}} = 1.25$ ),  $B = 0.31$ ,  $SE = 0.06$ ,  $t(386) = 4.96$ ,  $p < .001$ .

### **Discussion**

Our findings in Study 2.2 revealed that information on artists' motives does generally affect audience appreciation, offering initial support for our hypothesis. Social perceptions of intrinsically motivated artists were more positive than those of extrinsically motivated artists, with the former being perceived as warmer and more competent. Our findings also showed that intrinsically motivated artists were perceived as more impactful (i.e., long-term appreciation of their work) than extrinsically motivated artists. However, motive information did not affect aesthetic evaluations (i.e., immediate appreciation of their work). Although there was a trend towards awarding more stars to the work of the intrinsically motivated than extrinsically motivated artists, the effect did not reach significance. Additionally, motive information did not affect the number of paintings participants were willing to view.

In interpreting our lack of a clear effect regarding the painting-viewing measure, the bimodal data distribution suggested that participants were either motivated to view relatively few paintings and quickly move on, or view all of them, implying that factors beyond pure aesthetic considerations could have influenced their decision. Furthermore, the discretionary nature of discontinuing viewing introduced a confound into the design, as not all participants viewed the same artworks. As a result, we concluded that the number of paintings viewed was not an ideal measure for assessing aesthetic evaluation, leading us to exclude it from the replication in Study 2.3.

### **Study 2.3**

Study 2.3 was a pre-registered replication study that closely mirrored the design of Study 2.2, with one notable exception<sup>3</sup>. In Study 2.2, we presented participants with 42 of George Luks' paintings, allowing them to decide how many they would choose to view and rate. To standardise the process and minimise participant fatigue, we made a smaller selection of Luks' work. We selected 11 paintings, all of which had to be viewed and rated by participants, ensuring a consistent evaluation across the sample.

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<sup>3</sup> See [https://aspredicted.org/blind.php?x=DM4\\_J7Y](https://aspredicted.org/blind.php?x=DM4_J7Y). Note that we also measured participants' Big 5 personality characteristics and cultural background for exploratory purposes, however, these are not discussed further.

**Method**

**Participants**

Four hundred US-based participants took part in our study via Prolific, 16 of whom were removed for failing at least one of two attention checks, leaving us with a final sample of  $N = 384$  ( $M_{age} = 37.85$  years,  $SD_{age} = 14.13$  years, 196 female, 186 male, 1 who preferred not to say, and 1 with missing data). Participants reported being relatively interested in art ( $M = 5.20$ ,  $SD = 1.54$ , on a 7-point scale with higher scores reflecting greater interest).

**Procedure & Measures**

The procedure and measures were identical to those of Study 2.2.

**Materials**

We chose four of Luks’ paintings depicting scenes, four depicting landscapes, and three portraits to allow for sufficient diversity in terms of categories, ensuring that the pieces we selected were not too strongly liked or disliked in the previous experiment. All artworks are presented in the Supplementary Materials.

**Results**

Correlations between focal variables are presented in Table 2.3 with descriptive statistics and pairwise comparisons between conditions presented in Table 2.2. Once again, participants reported being relatively unfamiliar with the artworks shown ( $M = 1.63$ ,  $SD = 1.09$ ). We adhered to the same analysis procedure as in Study 2.2.

**Table 2.3**

*Correlations Between Focal Variables in Study 2.3*

Variable	1.	2.	3.
1. Perceived warmth <sup>a</sup>	-		
2. Perceived competence <sup>a</sup>	.66***	-	
3. Average star rating <sup>b</sup>	.32***	.36***	-
4. Perceived artistic impact	.51***	.62***	.41***

*Note.*  $N = 384$ . \*\*\*  $p < .001$ ; Pearson correlations are reported; <sup>a</sup>variable measuring social perceptions of the artist, <sup>b</sup>variable measuring aesthetic evaluations.

**Social Perceptions**

Intrinsically motivated artists ( $M_{pooled} = 5.36$ ,  $SD_{pooled} = 1.00$ ) were again perceived as warmer than extrinsically motivated artists ( $M_{pooled} = 5.10$ ,  $SD_{pooled} = 1.23$ ),  $B = 0.13$ ,  $SE = 0.06$ ,  $t(380) = 2.25$ ,  $p = .025$ .

Contrary to expectations, intrinsically motivated artists ( $M_{pooled} = 5.12$ ,  $SD_{pooled} = 0.99$ ) did not differ from extrinsically motivated artists ( $M_{pooled} = 4.95$ ,  $SD_{pooled} = 1.14$ ) in terms of perceived competence,  $B = 0.09$ ,  $SE = 0.05$ ,  $t(380) = 1.61$ ,  $p = .109$ .

**Aesthetic Evaluations**

Intrinsically motivated artists ( $M_{pooled} = 3.18$ ,  $SD_{pooled} = 0.76$ ) rated the artist’s work with more stars on average than extrinsically motivated artists ( $M_{pooled} = 2.97$ ,  $SD_{pooled} = 0.75$ ),  $B = 0.11$ ,  $SE = 0.04$ ,  $t(380) = 2.77$ ,  $p = .006$ .

**Perceived Artistic Impact**

Intrinsically motivated artists ( $M_{pooled} = 4.33$ ,  $SD_{pooled} = 0.76$ ) were perceived to have greater artistic impact than extrinsically motivated artists ( $M_{pooled} = 3.67$ ,  $SD_{pooled} = 0.75$ ),  $B = 0.33$ ,  $SE = 0.06$ ,  $t(380) = 5.67$ ,  $p < .001$ .

## Discussion

In a pre-registered replication of Study 2.2, we again found support for our hypothesis that intrinsically motivated artists are appreciated more than extrinsically motivated ones. Specifically, intrinsically motivated artists were perceived as warmer, their work was appreciated more, and they were seen as having greater artistic impact. The only finding that did not align with our hypothesis was that ratings of the artists' perceived competence were unaffected by their motives. In the following study, we extend our focus to examine whether intrinsic motivation can predict audience appreciation over the long term. We conducted a longitudinal study with a sample of professional artists to investigate how the motives we measured at baseline related to their perceived appreciation later.

### Study 2.4

Whereas our previous studies focused on the *immediate* consequences of motive information on audience appreciation as they engaged with the art, in Study 2.4, we shift perspectives to explore the *long-term* effects of artists' intrinsic and extrinsic motives on perceived appreciation. We conducted a two-wave longitudinal survey with a diverse online sample of professional artists from various artistic disciplines. Given the heterogeneity of our sample, we aimed to capture audience appreciation using both subjective and objective measures that were broadly applicable across different art forms. Unlike in our previous studies, here we assess aesthetic appreciation from the artist's point of view, which provides insights into their own beliefs about how their work is received and valued over time.

With a two-year interval between the measurements, we assessed motives at the initial time point and measured self-rated appreciation in the eyes of others at the follow-up, specifically focusing on aesthetic evaluations and perceived artistic impact, as it was not meaningful for artists to rate themselves on social perceptions. This design allowed us to examine how motives predicted future appreciation.

Additionally, although the previous experiments supported our hypothesis that intrinsically motivated artists would be appreciated more than extrinsically motivated ones, they did not clarify the direction of the effects. More specifically, it could be that artists' intrinsic motivation increased audience appreciation, their extrinsic motivation decreased it, or both. Our approach in Study 2.4 allowed us to disentangle these effects. The study received approval from the ethics review board of the authors' institution (ERB code FMG-4276) and was not pre-registered as it was not clear at the time whether it would be feasible to conduct the second wave of the study.

## Method

### *Participants*

In August 2021, we conducted a pre-screening of participants on Prolific who were employed in the arts sector by asking whether they were a professional artist, inviting those who were to take part in our survey<sup>4</sup>. Two-hundred and four participants completed our study at Timepoint 1, five of whom were removed for failing an attention check, leaving us with a sample of  $N = 199$ . One-hundred and fifty two participants completed our survey two years later, one of whom was removed for failing an attention check. We also removed sixteen participants who

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<sup>4</sup> More specifically, we asked participants the following: "A professional artist is a person whose career involves creating/ performing art. They can belong to any art form(s) such as visual arts, music, dance, literature, theatre etc. A professional artist is *not* the same as a person who only engages in art as a hobby or as a form of recreation. Based on what you read above, are you a professional artist?", to which they could respond 'yes' or 'no'.

reported no longer professionally creating art at Timepoint 2, leaving us with a final sample of  $N = 135$ , representing a retention rate of 67.84%.

At Timepoint 1, participants were an average of 34.84 years old ( $SD_{age} = 11.21$  years), 58 were female, 75 male, and two non-binary. They had been creating art professionally for an average of 10.13 years ( $SD = 8.66$ ), with 68.89% working as a freelancer/self-employed, 11.11% employed by an arts institution/organisation, 16.30% working both as a freelancer and in employment of an arts institution/organisation, and 3.70% unemployed at the time. Given that we wanted to reach as wide a population of artists as possible, we did not restrict ourselves to a single geographical location or artistic discipline. Most participants were residing in the UK ( $n = 40$ ) and the US ( $n = 18$ ) and mainly belonged to the disciplines: music ( $n = 30$ ), painting/illustration ( $n = 25$ ), photography/videography/cinema ( $n = 21$ ), graphic design/animation ( $n = 19$ ), and literature/poetry ( $n = 18$ ). These individuals were relatively highly educated with 80.00% having completed tertiary education.

### **Procedure**

At Timepoint 1, participants took part in a survey measuring demographics and professional characteristics and filled in a questionnaire we developed measuring our taxonomy's 24 motives. In the follow-up survey at Timepoint 2, we first asked if participants were still working as a professional artist; those who were not were paid and excluded from the rest of the survey. The remaining participants completed the survey consisting of items assessing appreciation.

### **Measures**

**Professional Characteristics (T1).** We measured participants' duration creating art ("How long have you been creating art for professionally in full years?"), artistic discipline ("What is currently your main artistic discipline?", 1 = *painting/illustration*, 2 = *sculpture*, 3 = *music*, 4 = *photography/videography/cinema*, 5 = *dance/performance art*, 6 = *graphic design/animation*, 7 = *theatre/acting*, 8 = *literature/poetry*, 9 = *fashion*, 10 = *other*), and employment status ("How would you describe your current employment situation as an artist? I am currently...", 1 = *unemployed*, 2 = *a freelance/self-employed artist*, 3 = *employed by an arts institution/organisation*, 4 = *both a freelance artist and employed by an arts institution/organisation*).

**Motives For Creating Art (T1).** We developed a scale to measure the 24 motives from our taxonomy in Study 2.1, consisting of four items for each motive (96 items in total), and presented these to participants in randomised order with responses on a 7-point scale (higher scores reflected a greater endorsement of the respective motive). The full list of items and the internal consistencies for each motive (all Cronbach's  $\alpha$ 's = .75 – .93) can be found in the Supplementary Materials. We created composite scores for each cluster by aggregating scores of each of the motives that belonged to the respective cluster.

**Professional Characteristics (T2).** We measured whether participants were still creating art professionally two years later "Do you still create art professionally (as opposed to as a hobby or recreationally)?", with 1 = *yes*, 2 = *no*.

**Aesthetic Evaluations (T2).** We measured aesthetic evaluations using three items ( $\alpha = .75$ ) with the stem: "How appreciated do you feel that your work is, as an artist..." ending with "...among the public/ among fellow artists/ among art critics/experts" (1 = *not at all*, 7 = *very much*), which we aggregated to form a composite variable where higher scores reflected greater perceived appreciation.

**Perceived Artistic Impact (T2).** We measured this construct in two ways. First, we measured *professional accolades* by presenting participants with four binary items asking whether in the past two years, they had 1) won any awards, 2) received any public reviews, 3) received some form of grant or funding for their work as an artist, and 4) whether their work had been publicised in broadcast media (0 = *no*, 1 = *yes*). We summed these scores, resulting in a variable ranging from 0-4, with higher scores reflecting a greater artistic impact.

Second, we asked participants about their *perceived transformative effect* on their audience, using three items ( $\alpha = .81$ ). All three started with the stem “To what extent do you believe your art affects...”, ending with “...people’s feelings”, “...people’s thoughts or opinions about certain social issues”, or “...people’s wellbeing” (1 = *not at all*, 7 = *very much*). We aggregated these to form a composite variable where higher scores were indicative of greater perceived impact.

## Results

Descriptive statistics and intercorrelations between focal variables are presented in Table 2.4. All motive clusters showed strong positive intercorrelations except the intrinsic/self-focused and extrinsic/other-focused clusters, which were uncorrelated. To compare intrinsic with extrinsic motives, we first aggregated scores on intrinsic/self-focused and intrinsic/other-focused motives to create a composite ‘intrinsic motivation’ variable, followed by the same for ‘extrinsic motivation’. We regressed our dependent variables on these two composite variables simultaneously.

**Table 2.4**

*Descriptive Statistics and Correlations Between Focal Variables in Study 2.4*

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.
1. Intrinsic/self-focused (T1)	5.38	1.01	–					
2. Intrinsic /other-focused (T1)	3.53	1.05	.68***	–				
3. Extrinsic/self-focused (T1)	3.51	1.03	.35***	.49***	–			
4. Extrinsic/other-focused (T1)	2.34	1.02	.13	.36***	.64***	–		
5. Aesthetic evaluations (T2)	4.24	1.21	.22*	.23**	.07	.07	–	
6. Professional accolades <sup>a</sup> (T2)	1.10	0.98	.14	.10	.09	.10	.15	–
7. Perceived transformative effect <sup>a</sup> (T2)	4.48	1.33	.28**	.36***	.10	.12	.48***	.17*

*Note.*  $N = 135$ ; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; Pearson correlations are presented, except for correlations involving the variable ‘professional accolades’ for which Spearman correlations were conducted; <sup>a</sup> variables measure perceived artistic impact.

In line with our hypothesis, intrinsic motives positively predicted future aesthetic evaluations,  $B = 0.33$ ,  $SE = 0.12$ ,  $t(132) = 2.78$ ,  $p = .006$ ; extrinsic motives did not have a significant negative effect,  $B = -0.03$ ,  $SE = 0.12$ ,  $t(132) = -0.29$ ,  $p = .773$ .

Contrary to our hypothesis, a negative binomial regression showed that intrinsic motives were not a significant positive predictor of professional accolades,  $B = 0.15$ ,  $SE = 0.10$ ,  $z(132) = 1.48$ ,  $p = .140$ . Extrinsic motives also did not significantly negatively predict these,  $B = -0.02$ ,  $SE = 0.10$ ,  $z(132) = -0.25$ ,  $p = .803$ .

Consistent with our hypothesis, intrinsic motives positively predicted future perceived artistic impact,  $B = 0.50$ ,  $SE = 0.13$ ,  $t(132) = 4.00$ ,  $p < .001$ , whereas extrinsic motives did not have a significant negative influence,  $B = -0.03$ ,  $SE = 0.13$ ,  $t(132) = -0.25$ ,  $p = .807$ .

## Discussion

Study 2.4 extends our previous findings by showing that the relatively greater appreciation of intrinsically over extrinsically motivated artists is largely driven by the positive influence of intrinsic motivation, rather than by any detrimental effect of extrinsic motivation. Specifically, intrinsic motivation predicted audience appreciation two years later, both in terms of subjective aesthetic evaluations and perceived artistic impact. However, contrary to our expectations, there was no significant effect on more objective markers of success, such as awards, reviews, grants/funding, or features in broadcast media.

This discrepancy might firstly be due to the fact that professional recognition is often determined to a greater extent by external factors beyond the artist's control, such as industry trends, institutional backing, or consumer preferences (Fraiberger et al., 2018; Marshall & Forrest, 2011), which could weaken the influence of motives. Additionally, despite our aim to include objective markers of success that could broadly apply across a heterogeneous sample of artists, it could be that these indices were not universally relevant. This diversity in industries, disciplines, and job situations might have made some of these success measures less applicable or meaningful for certain artists in the sample. Indeed, in our sample, 85.19% of artists had not received awards and 82.22% had not received grants, suggesting a restriction of range in our 'professional accolades' variable, which may have reduced our ability to detect an effect, even if one existed.

### General Discussion

The current research investigated the motives behind a professional artist's desire to create art, and how they influence audience appreciation of the artist's work. In Study 2.1, we identified 24 motives based on interviews with professional artists. These were categorised based on the intrinsic/extrinsic distinction that is widely applied in psychological motivation theory, which categorises motives based on the locus of the behaviour (i.e., whether they are internal or external to the artist). We further subcategorised motives based on their intended target (i.e., the artist or others). This yielded four distinct clusters (intrinsic/self-focused, intrinsic/other-focused, extrinsic/self-focused, and extrinsic/other-focused motives) that formed the foundation for our subsequent studies.

In Studies 2.2 and 2.3 (a pre-registered replication), we manipulated motive information experimentally using vignettes – each representing one of the four motive clusters – to establish how they affected audience responses. The results largely supported our hypothesis that intrinsic motives lead to greater audience appreciation, by positively affecting social perceptions of the artist, aesthetic evaluations of their work, and their perceived artistic impact. Study 2.4 extended these findings by demonstrating that the positive influence of intrinsic motives on audience appreciation is not limited to immediate exposure but also applicable over the long term, as captured using measurements of appreciation (i.e., aesthetic evaluations and perceived artistic impact) conducted two years later. Overall, our findings indicate that intrinsic (rather than extrinsic) motives have a positive and lasting impact on the way art is perceived and valued by audiences.

### *Theoretical Contributions and Practical Implications*

Our findings make two main contributions to the literature. First, they add to the extensive body of psychological research that examines contextual influences on audience appreciation of art. This work is conceptually rooted in the 'aesthetic contextualism' approach to

art which emphasises the importance of socio-historical contingencies in the interpretation and appreciation of art (e.g., Danto, 1964; Levinson, 1996). Artworks are seen not only in terms of their perceptual qualities, but also as products shaped by the artist's intentions and by the historical and cultural context in which they were created. Research has shown that, when engaging with art, people consider various contextual factors about the artist, including biographical information (Darda & Chatterjee, 2023), ingroup/outgroup membership (Mastandrea et al., 2021), criminal background (White et al., 2014), fame (e.g., Mastandrea & Crano, 2019) etc., which influence their aesthetic judgements.

However, many contextual influences reflect external factors over which the artist has little to no control. Motives, which are more psychological in nature, reflect internal processes that drive the artist's actions, and they are also more malleable. By examining motives, we extend prior work, focusing on factors that artists can potentially shape or can emphasise when presenting their work. We provide empirical support for the relevance of artists' motives, extending existing theory that suggests that motives can shape people's responses to art (Bullot & Reber, 2013; Marshall & Forrest, 2011).

Second, our findings contribute to the emergent psychological literature on how an individual's intrinsic or extrinsic motives are perceived by others. Much of the existing literature has focused on the impact of motives on the individual's *own* affect, cognition, and behaviour, for instance examining whether intrinsic motivation is positively associated with greater creativity (e.g., Liu et al., 2016) or if intrinsically motivated employees perform better at work (e.g., Cerasoli et al., 2014). Less attention has been paid to the way motives affect the perceptions and behaviour of *others*.

The limited work that exists on these *interpersonal* effects has been conducted mainly in organisational (e.g., Derfler-Rozin & Pitesa, 2020) and educational settings (e.g., Wild et al., 1992). It has examined how an individual's expressed motivation influences person perception variables – such as others' views of their enthusiasm or morality (e.g., Kwon et al., 2023; Wild et al., 1992) – and favourable treatment responses, including prosocial behaviour and supportive interactions (Jachimowicz et al., 2019; Kwon et al., 2023; Wang et al., 2022), rather than perceptions of the value of their work. Our research extends this work by not only applying it to a different context such as the arts, but also by incorporating distinct outcomes related to the valuation of one's creative contributions. Understanding how these motives affect audience perceptions is important because it can have consequences for audience appreciation and, in turn, influence artists' career trajectories.

Our research has two main practical implications for artists. First, many artists may be unaware of the fact that audiences expect them to be selflessly devoted to their craft, driven by intrinsic motives, not external rewards (Abbing, 2002). Our findings suggest that artists who align with these normative expectations are more favourably received, leading to greater long-term appreciation of their work. Artists may want to reflect on their own motives, and how best to communicate them, highlighting their intrinsic motivations when they discuss their creative process, and being mindful not to overemphasise extrinsic ones. Additionally, as professional development becomes an increasing focus in artist training and coaching programmes, it could also be helpful for these initiatives to inform artists about the importance that people attach to motives and how it can impact their careers (even inadvertently).

Second, over recent years, the artistic landscape has changed with the growing integration of generative Artificial Intelligence (AI) technology in creative fields. Its development

suggests that human artists may soon be faced with new and unanticipated challenges. Visual art, poetry, and music can be created almost instantly at the push of a button, which raises concerns about how it will impact the livelihoods of many art professionals. We would argue that one of the main ways in which human-made art differs from AI-generated art is the humanity and personal touch that human artists bring to their work. Audiences often seek a deeper connection with art—one that stems from the artist’s personal motivations, thoughts, and emotions. Our findings suggest that intrinsic motives – ones that reflect the artist’s passion, personal expression, and communicative intentions – are likely to be key, ultimately enhancing the distinctiveness and appreciation of human artists’ work over computer-generated artwork. When AI can mimic technical skill but lacks the emotional depth and lived experiences behind human art, artists should be aware of the value their motives convey and use them to the full to maintain their unique appeal.

### ***Strengths, Limitations, and Future Directions***

Our work has two main strengths. First, the artists we interviewed in Study 2.1 and whose motives we measured in Study 2.4 were highly heterogeneous, representing a broad array of artistic disciplines such as visual arts, music, dance, literature/poetry and more. Their job situations were also diverse, with some experiencing job uncertainty – working as freelancers or facing periods of unemployment – and others enjoying greater stability through their employment at arts institutions (like theatres or opera houses), albeit sometimes at the cost of individual expressive freedom. This diversity helped us capture a wider range of motives than in previous studies, particularly in relation to extrinsic motives. It also speaks to the generalisability of our taxonomy and our main finding of Study 2.4 that intrinsically motivated artists are more appreciated in the long run, making them applicable to a broad range of artists and disciplines.

Second, our work gives both researchers and practitioners tools to investigate the impact of motives across a range of outcomes. Our taxonomy is the first systematic attempt to not only catalogue but also categorise motives. Previous research on the motives of professional artists was very scattered, lacking a unifying structure. We offer a framework that can be used to generate research questions in the field of empirical aesthetics and beyond. Given the finding that intrinsically motivated artists tend to be more appreciated over the long term, future research could explore if intrinsic motivation results in greater life satisfaction and wellbeing of artists compared to extrinsic motivation. The taxonomy could also be applied to other professions, raising questions such as whether the expectation for artists to be intrinsically motivated is unique to the arts, while individuals in fields like business face less scrutiny for being driven by external rewards.

The motive scale we developed showed good reliability, making it a useful tool not only for academic research but even for practical applications. It could be used diagnostically to measure the degree to which an artist is overly focused on extrinsic motives at the expense of intrinsic ones. Such insights could be beneficial for coaches, mentors, or psychologists working with artists to address potential motivational imbalances that could lead to job dissatisfaction or even burnout. If practitioners can identify when an artist is overly driven by extrinsic factors, interventions can be implemented to help them reconnect with their intrinsic motives (see above), alleviate the pressures of external rewards, and enhance their creative output and general well-being.

But our work is not without its limitations. First, our experiments in Studies 2.2 and 2.3 focused solely on visual art, which could raise questions about the generalisability of their

findings to other artistic disciplines. For example, would people appreciate a dancer's performance or a musician's composition more if they expressed intrinsic rather than extrinsic motives for creating their art? Drawing on the findings from Study 2.4, which tested the predictive validity of intrinsic and extrinsic motives in a more diverse sample of artists, we would argue that they probably would. However, future work is needed to see if these effects could extend to other forms of art, or whether audience responses to motive information are, in fact, discipline specific. This could offer insights into whether different art forms are tied to different expectations in terms of motives, and if they evoke different reactions from audiences.

Studies 2.2 and 2.3 were conducted with US-based samples, raising questions about cultural variability in audience responses to motive information. Research has shown that cultures differ greatly in terms of what they value, and that this can shape the way individuals respond to others (e.g., Hofstede, 2016)—even the way in which they perceive and engage with art (e.g., Darda & Cross, 2022; Masuda et al., 2008). One well-established cultural distinction is between individualism and collectivism. Individualistic cultures, such as the US, place a premium on values such as uniqueness and independence, whereas collectivistic cultures, such as China, prioritise group harmony and conformity instead (Triandis, 1989). Our findings revealed a preference for intrinsically motivated artists, a result that could reflect individualistic values prevalent in our US samples.

One could also argue that audiences in collectivistic cultures respond more positively to artists expressing extrinsic/other-focused motives – such as conforming to others' expectations or upholding traditions – because they resonate with collectivistic values emphasising social cohesion and respect for the group's collective identity (Markus & Kitayama, 1991; Triandis, 1989). In Study 2.3, we measured individualism and collectivism as exploratory cultural variables and found that they did not moderate the findings. However, future research could explore whether other operationalisations of culture influence audience reactions to artists' motives, and it might offer insights for artists aiming to engage more effectively with different cultural markets.

### **Conclusion**

From Van Gogh's tender introspection to Warhol's business-as-art ethos as expressed in the opening quotes, our study similarly reveals that the motives driving artists to create art are as varied as the artists themselves. Our findings highlight the influence of these motives – whether intrinsic or extrinsic – in shaping the audience's appreciation of both the artist and their work. And, in doing so, they reinforce the idea that the story behind the creation is often as meaningful as the creation itself.

# 3

## **The Threat of Synthetic Harmony: AI vs. Human Origin Beliefs Affect Listeners' Cognitive, Emotional, and Physiological Responses to Music**

This chapter is based on Dunham, R., Van Kleef, G. A., & Stamkou, E. (2025). *The Threat of Synthetic Harmony: AI vs. Human Origin Beliefs Affect Listeners' Cognitive, Emotional, and Physiological Responses to Music*. Manuscript submitted for publication.

Since prehistoric times, humans have created music—a cultural expression that distinguishes them from other species (Conard et al., 2009; Dissanayake, 1980). Music is thought to have evolved as a means of fostering social cohesion, with individuals jointly singing, producing melodies, and dancing to beats, thereby strengthening social bonds and enhancing collective survival (Savage et al., 2021). However, advances in generative artificial intelligence (AI) challenge the notion of music-making as a uniquely human activity, while raising concerns about ethical and practical repercussions (Anderson et al., 2018). This raises the question of how people respond to AI-attributed music.

Research shows that people generally react less favourably to music when they know it was composed by AI and not by humans (e.g., Shank et al., 2023). Yet, as AI becomes increasingly adept at producing complex and emotionally evocative compositions, distinguishing between AI and human origins of music will become more challenging. This shift raises important questions about how people perceive and respond to AI generated art and the psychological mechanisms driving these reactions. Here, we investigate whether the resistance to AI-attributed art reflects motivated reasoning – where people consciously adjust their evaluations to align with pre-existing beliefs (Kunda, 1990) – or a more deeply ingrained, embodied threat response evoked by AI’s role in creative domains. Understanding the nature of this resistance is important, as it informs how malleable these reactions are. If opposition to AI-attributed art is primarily cognitive, it may diminish over time as AI’s presence in creative fields becomes more normalised. However, if it arises from deeply rooted feelings of threat, these responses may persist, necessitating more proactive interventions.

### **Motivated Reasoning Versus Embodied Threat**

Studies have shown that both professionals and non-experts tend to hold negative attitudes to AI-created music (Tigre Moura & Maw, 2021). The same piece is appreciated less, considered less creative, and less emotionally evocative when attributed to AI as opposed to a human (Millet et al., 2023; Shank et al., 2023; Tubadji et al., 2021; but see Friedman & Taylor, 2014). However, this research has relied on self-reports, which are prone to bias, making it unclear whether effects merely reflect motivated reasoning – a controlled process where people consciously downgrade AI’s creative potential to align with their pre-existing beliefs (Kunda, 1990) – or instead reflect deeper, embodied feelings of threat that automatically manifest in physiology. While motivated reasoning can be threat-driven, it operates at a deliberate, controlled level, unlike automatic embodied processes (Kunda, 1990).

On the one hand, the *motivated reasoning account* suggests that unfavourable self-report responses to AI- (versus human-) attributed music stem from strategic cognitive justifications rather than automatic threat responses. Individuals may report appreciating AI-generated music less because they believe that AI’s creative capacity is limited. Research shows that people more readily accept AI’s involvement in analytical tasks (Castelo et al., 2019) than in creative ones (Chamberlain et al., 2018). They may also rationalise AI’s inferiority based on its perceived lack of intentionality, emotive capacity, or effort expenditure (Chamberlain et al., 2018; Demmer et al., 2023; Tubadji et al., 2021). This rationalisation can lead individuals to downplay their appreciation of AI-attributed music and report less profound emotional reactions to maintain their beliefs. Indeed, people have been found to deliberately downgrade their initially positive evaluations of music upon learning that it was AI-created (Tubadji et al., 2021). If negative responses to AI-attributed music merely reflect motivated reasoning, we would expect these

responses to manifest in conscious self-reports of appreciation and emotion, with no accompanying changes in nonconscious (e.g., physiological) markers of stress.

On the other hand, the *embodied-threat account* suggests that unfavourable self-report responses to AI- (versus human-) attributed music stem from a deeper, automatic reaction to AI's creative capabilities. To some, AI represents a significant challenge to humanity, not just through threats like mass unemployment, but by challenging the very definition of what it means to be human (Anderson et al., 2018). The ability to create art has long been a key defining feature of humanity, underscoring our perceived cultural and cognitive advancements over other species. As AI encroaches on the creative domain, these *anthropocentric creativity beliefs* – that creativity is uniquely human – risk being shattered (Millet et al., 2023). Indeed, individuals who embrace creative AI respond more favourably to AI-generated art (Hong et al., 2021), whereas those with stronger anthropocentric creativity beliefs depreciate it (Millet et al., 2023). If negative responses to AI-attributed music stem from embodied threat, we would expect these responses to manifest both in conscious self-reports of appreciation and emotional experiences and in nonconscious physiological responses that reflect a deeper, automatic emotional reaction beyond cognitive control.

In short, both accounts predict that people who believe a piece of music was created by AI (as opposed to humans) will show reduced appreciation and less pronounced emotional responses. However, the embodied threat account additionally predicts physiological stress responses. More specifically, if negative self-reports purely reflect motivated reasoning, physiological responses should remain unchanged, suggesting that devaluation is a controlled, cognitive process rather than an automatic, embodied response. In contrast, if negative responses stem from embodied threat, we would expect signs of physiological stress, reflecting a deeper, automatic reaction to AI's role in creative fields.

### **Physiological Responses to Stress: Respiratory Sinus Arrhythmia**

Physiological responses are processes that happen involuntarily, beyond individuals' control (Blascovich & Mendes, 2010). These can be monitored via the autonomic nervous system, which has parasympathetic and sympathetic branches. The vagus nerve, central to the parasympathetic nervous system, acts as a brake on the heart, promoting relaxation and social interaction by suppressing sympathetic influences (Porges et al., 1996). According to (Porges, 1995) Polyvagal Theory, the vagus nerve modulates heart rate by accelerating it during inhalation and decelerating it during exhalation. To capture vagus nerve reactivity, we measured participants' respiratory sinus arrhythmia (RSA)—a heart rate variability component linked to the respiratory cycle and a biomarker of stress (Porges, 2007).

Exposure to a stress-eliciting threat commonly leads to *vagal withdrawal*, where the vagus nerve reduces its calming effect on the heart, resulting in a temporary decrease in RSA (Brindle et al., 2014). Empirical work supports vagal withdrawal as a response to various psychological threats, including stress-inducing mental arithmetic (Lovallo, 2016), phobia-triggering stimuli (Johnsen et al., 2003), and threats to masculinity in males (Kramer et al., 2017) and the opposite (increased RSA) as an index of a dampened stress response (Stamkou et al., 2023; van Kleef et al., 2008). Two meta-analyses further corroborate that vagal withdrawal occurs in response to stress-inducing tasks (Brindle et al., 2014) and negative social interactions (Shahrestani et al., 2015).

Given its links with threat and stress, RSA reactivity enables us to examine the aforementioned explanatory mechanisms. Specifically, if the motivated reasoning account held

true, we would expect no effect of AI- versus human-origin information on RSA reactivity while listening to a piece of music. Conversely, if the embodied-threat account held true, we would expect people who believe the music was AI-generated to also exhibit a relative decrease in RSA while listening compared to those who believe it was human-made.

### Overview of Studies

We tested the explanatory accounts in two field experiments. In both experiments, participants listened to the same emotionally evocative orchestral piece introduced as either AI-generated or human-made, while we measured their RSA and self-reported responses. In Study 3.2, we also assessed participants' perceived threat and anthropocentric creativity beliefs to determine whether these factors influenced their reactions. Additionally, we present a pilot test study in the Supplementary Materials in which we compared multiple candidate music tracks to find the most suitable stimulus for our studies.

### Study 3.1

#### Method

##### *Participants*

Study 3.1 was conducted at an event at NEMO Science Museum in Amsterdam, where we had a five-hour window to collect data. Participants were recruited voluntarily and were informed that the study concerned their responses to music, with no mention of artificial intelligence. We enlisted as many participants as possible within the allocated time, resulting in 56 participants. Six who failed an attention check were excluded, culminating in a final sample of  $N = 50$  (age:  $M = 29.12$ ,  $SD = 4.46$ , 64% female, 96% completed tertiary education, 68% Dutch speaking).

##### *Procedure*

The study, approved by the local ethics review board (ERB code: FMG-5350), employed a two-condition between-subjects design and was available in English or Dutch. Participants were seated in private booths equipped with computers and noise-cancelling headphones. Electrocardiography (ECG) sensors were attached to their chest to measure RSA. Upon giving informed consent, participants sat still while a two-minute baseline RSA measure was recorded. They were then randomly assigned to either the AI ( $n = 22$ ) or human condition ( $n = 28$ ). The music origin manipulation was presented through introductory text displayed on the screen: *"In just a moment, you will listen to a classical music piece by [Artificial Intelligence/ an orchestra]. The piece is by the [Artificial Intelligence music composition software called AIVA/ Sofia Symphonic Orchestra]. After listening, we will ask you a few questions about your thoughts and feelings"*.

To reinforce the manipulation, participants saw either a screenshot of the AIVA software or a photo of the Sofia Symphonic orchestra, depending on their assigned condition. They were instructed to listen to the music with their eyes closed. After listening, they completed items assessing appreciation and emotional responses, followed by an attention check and a manipulation check. Finally, demographic information was collected. The study took approximately 12 minutes.

##### *Materials*

**Music track.** The music used in both Studies 3.1 and 3.2 was a symphonic piece entitled 'I am AI', with a duration of 2 minutes and 49 seconds<sup>5</sup>. This piece was generated using the AI music composition software 'AIVA' (AIVA, 2020) and performed by the Sofia Symphonic

<sup>5</sup> A link to this track on YouTube can be found here: <https://youtu.be/Emidxpsyk6o?si=fopUqyIab5pdSuib>

Orchestra in the recording. We deliberately chose an AI-composed and human-performed piece so that the origin information provided to participants would be truthful in both conditions. In a previous pilot study, multiple tracks were evaluated and 'I am AI' was selected as the most suitable candidate as it was ambiguous as to whether its origin was AI or human. Additionally, the pilot study showed that the piece was relatively unfamiliar and emotionally evocative (see Supplementary Materials). The composition progressively intensifies, with continuous additions of new layers of instruments and vocals, until reaching a climax at its conclusion, thereby enhancing the likelihood of a steady build-up of feelings over time.

### ***Self-Report Measures***

All self-report measures were assessed on seven-point Likert scales anchored by 1 = *not at all* and 7 = *very much* unless stated otherwise.

***Appreciation.*** Music appreciation was measured using five items, combined into a composite scale ( $\alpha = .90$ ;  $\alpha = .91$  in Study 3.2): “How much did you like this piece?”, “How much did you enjoy this piece?”, “How interesting did you find this piece?”, “How creative did you find this piece?”, and “How original did you find this piece?”. Higher scores indicated greater appreciation.

***Emotional responses.*** For emotional responses, we measured prototypical aesthetic emotions, which refer to generally positively valenced emotions that are commonly elicited by art (such as feeling moved or fascinated; (Menninghaus et al., 2019). We used five items based on the AESTHEMOS scale (Schindler et al., 2017), which were combined to form a composite scale ( $\alpha = .74$ ;  $\alpha = .85$  in Study 3.2): “While listening to the piece, I felt...” “fascinated”, “deeply moved”, “awe”, “a sense of wonder”, and “a sense of beauty”. Higher scores reflected more profound emotional responses.

***Attention check.*** Participants were presented with the item: “The music piece I listened to was by...” and were asked to choose between two forced-choice answer options: “AIVA” or “The Sofia Symphonic Orchestra”.

***Manipulation check.*** We presented participants with two items: “The music piece I listened to was by Artificial Intelligence technology” and “The music piece I listened to was by human music artists” (reverse-coded), which we combined ( $r = .93$ ;  $r = .83$  in Study 3.2) so that higher scores reflected greater perceived non-human music origin.

### ***Respiratory Sinus Arrhythmia (RSA)***

We measured participants’ cardiovascular activity using a standard Lead II ECG configuration, recorded using Vsrp98 software version 12.8 (Molenkamp, 2024), with a National Instruments NI 6224 data acquisition card, sampling at a rate of 1,000 S/s per channel. We pre-processed the raw ECG data with a second-order Butterworth high-pass filter set at 0.5 Hz to remove noise. Next, we identified R-peaks using a second-order band-pass filter at 17 Hz. We extracted QRS waves from the raw data using a QRS detector, based on the positions identified in the 17-Hz filtered signal. To analyse RSA, we used Porges’ algorithm (Porges, 1985) to extract the high-frequency component of the inter-beat interval cycle. We resampled the inter-beat interval signal at 4-Hz and applied an eighth-order Butterworth band-pass filter ranging from 0.12 to 1.00 Hz to isolate RSA. RSA scores were extracted at 30-second intervals, producing four measurements during the two-minute baseline, that were averaged. During the music track, RSA scores were extracted at six timepoints. In both studies, the RSA scores were normally distributed.

### ***Transparency and Openness***

We report sample size determinations, all data exclusions, manipulations, and measures used. Data, analysis code, and study materials (except for copyrighted music) are available on OSF ([https://osf.io/3k8gb/?view\\_only=e44ca2ea65f44243bb1c3068f8be6397](https://osf.io/3k8gb/?view_only=e44ca2ea65f44243bb1c3068f8be6397)). Analyses were conducted using R, version 2023.12.1+402. This study was not preregistered.

### **Results**

#### ***Manipulation Check***

Participants in the AI condition ( $M = 6.23$ ,  $SD = 1.16$ ) were more likely to report that the music track was by AI than those in the human condition ( $M = 2.62$ ,  $SD = 1.39$ ), Wilcoxon's  $W = 593.5$ ,  $p < .001$ ,  $r = -0.80$ , suggesting that our manipulation was successful.

#### ***Self-Report Measures***

***Appreciation.*** Participants in the human condition ( $M = 5.30$ ,  $SD = 0.91$ ) indicated appreciating the music more than those in the AI condition ( $M = 4.44$ ,  $SD = 1.03$ ),  $t(48) = -3.14$ ,  $p = .003$ ,  $d = -0.90$ , 95% CI [-1.42, -0.31].

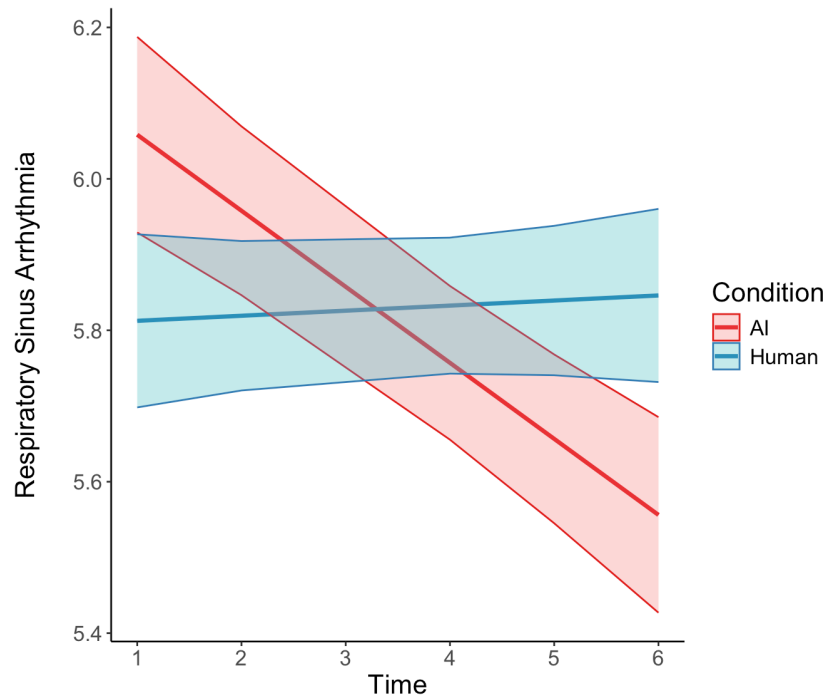
***Emotional responses.*** Participants in the human condition ( $M = 4.74$ ,  $SD = 0.94$ ) also reported experiencing more profound emotional responses to the music, as compared to those in the AI condition ( $M = 4.14$ ,  $SD = 0.98$ ),  $t(48) = -2.19$ ,  $p = .033$ ,  $d = -0.63$ , 95% CI [-1.15, -0.05].

#### ***Respiratory Sinus Arrhythmia***

We conducted a multilevel analysis with maximum likelihood estimation to account for the hierarchical structure of the data, as timepoints (Level 1) were nested within participants (Level 2). We regressed RSA scores on time, condition, and their interaction, while controlling for baseline RSA (Laborde et al., 2017; Quintana & Heathers, 2014). Our model included an AR1 autoregressive correlation structure and random intercepts as model comparisons indicated that their inclusion resulted in the best fit for our data. We report linear trends of RSA because we are interested in differences between the start and the end of the track rather than fluctuations in the trend over time, which would be captured by non-linear trends.

**Figure 3.1**

*The Interactive Effects of Time and Condition on Respiratory Sinus Arrhythmia in Study 3.1*



*Note.*  $N = 50$ . Shaded areas represent 95% confidence bands.

Figure 3.1 depicts the interaction effect of time and condition on RSA using scores predicted by the model. Our findings showed a significant cross-level interaction between time and condition on RSA,  $\gamma = 0.11$ ,  $SE = 0.04$ ,  $t(248) = 2.44$ ,  $p = .015$  (see Supplementary Table 3.3 for all parameter estimates). Subgroup analyses indicated that, in the AI condition, there was a significant negative effect over time,  $B = -0.11$ ,  $SE = 0.03$ ,  $t(109) = -4.22$ ,  $p < .001$ . Conversely, in the human condition, there was no significant effect,  $B = 0.02$ ,  $SE = 0.04$ ,  $t(139) = 0.40$ ,  $p = .691$ .

These results indicate that people appreciated music less, experienced less profound emotions, and experienced more cardiovascular stress (vagal withdrawal) if they believed it was created by AI rather than humans. These findings provide initial support for the embodied-threat account, suggesting that the less favourable response to AI-attributed music manifests not only in participants' conscious self-reports, but also in their physiology.

### Study 3.2

In Study 3.2, we conducted a confirmatory test of the embodied-threat account, incorporating additional measures to further substantiate it. We measured perceived threat to examine whether participants in the AI condition felt more threatened than those in the human condition. Additionally, we measured anthropocentric creativity beliefs (Millet et al., 2023) to establish whether these feelings of threat and negative responses were more pronounced among individuals with stronger beliefs about the uniqueness of human creativity.

### Method

#### *Participants*

Study 3.2 took place over two weeks at NEMO Science Museum and could be completed in either English or Dutch. We recruited 390 participants on a voluntary basis,

eighteen of which failed an attention check and were subsequently excluded, aligning with our pre-registered criteria. This resulted in a final sample of  $N = 372$  participants ( $n = 183$  in the AI condition,  $n = 189$  in the human condition; age:  $M = 37.99$ ,  $SD = 10.58$ , 52% female, 92% completed tertiary education, 69% Dutch speaking).

We did not conduct an a priori power analysis, as we preregistered that our stopping rule would involve collecting data from as many participants as possible within the period allocated to us by the museum. Our preregistered goal was to collect data from a minimum of  $N = 300$  participants, which we achieved. We conducted sensitivity analyses with G\*Power (Faul et al., 2007) to determine the minimum effect sizes our sample would enable us to detect. For the self-report measures, the sensitivity analysis ( $\alpha = .05$ , power = .80; two-tailed) indicated we would be able to detect an effect size of Cohen's  $d = 0.29$ . For the physiological analysis, to get an indication of the power afforded by our sample, we conducted a sensitivity analysis for multiple regression with  $\alpha = .05$ , power = .80, and eight predictors (i.e., condition, time, ACB, condition\*time, condition\*ACB, ACB\*time, condition\*time\*ACB, and baseline RSA) which suggested the ability to detect an effect of  $f^2 = 0.04$ . However, this is likely underestimated due to the unaccounted nested structure of the data, which was applied in our formal analysis (Moerbeek, 2004).

### **Procedure**

The study received approval from the local ethics review board (ERB code: FMG-6808) and was pre-registered. The procedure mirrored that of Study 3.1, with the addition of two variables: perceived threat and anthropocentric creativity beliefs. Perceived threat was measured immediately after participants listened to the track, before the appreciation and emotional responses. Anthropocentric creativity beliefs were measured after appreciation and experienced emotions, to ensure that these would not prime participants in the human condition to think of possible non-human involvement in the creation of the piece. The entire study procedure took approximately 15 minutes.

### **Measures**

All measures were consistent with Study 3.1 ( $\alpha = .91$  for appreciation and  $\alpha = .85$  for emotional responses). We report only the additional variables below.

**Perceived threat.** We measured this variable using eight items, with the stem differing by condition: “When I think about the fact that the music was by [the Artificial Intelligence music composition software AIVA/ the Sofia Symphonic Orchestra], I feel...”. This was followed with the randomly ordered adjectives: stressed, tense, worried, anxious, hopeful, reassured, relaxed, and calm (with the last four reverse-coded). These items were combined into a composite measure ( $\alpha = .82$ ) where higher scores reflected greater feelings of threat<sup>6</sup>.

**Anthropocentric creativity beliefs.** Anthropocentric creativity beliefs (ACB) were measured using five items by Millet and colleagues (2023), combined into a scale ( $\alpha = .78$ ). An example item was “Creativity is a uniquely human characteristic” (1 = *strongly disagree*, 7 = *strongly agree*), with higher scores reflecting stronger anthropocentric creativity beliefs.

### **Transparency and Openness**

We report sample size determinations, all data exclusions, manipulations, and measures used. Data, analysis code, and study materials (except for copyrighted music) are available on OSF ([https://osf.io/3k8gb/?view\\_only=e44ca2ea65f44243bb1c3068f8be6397](https://osf.io/3k8gb/?view_only=e44ca2ea65f44243bb1c3068f8be6397)). Analyses were

<sup>6</sup> These items were listed under ‘various feeling states’ in the preregistration.

conducted using R, version 2023.12.1+402. This study's hypotheses and methods were preregistered on AsPredicted ([https://aspredicted.org/V2J\\_T7P](https://aspredicted.org/V2J_T7P)).

## Results

### *Manipulation Check*

Participants in the AI condition ( $M = 5.77$ ,  $SD = 1.41$ ) were more likely to report that the music track was by AI in the human condition ( $M = 2.88$ ,  $SD = 1.35$ ), Wilcoxon's  $W = 31762$ ,  $p < .001$ ,  $r = -0.73$ , suggesting a successful manipulation.

### *Self-Report Measures*

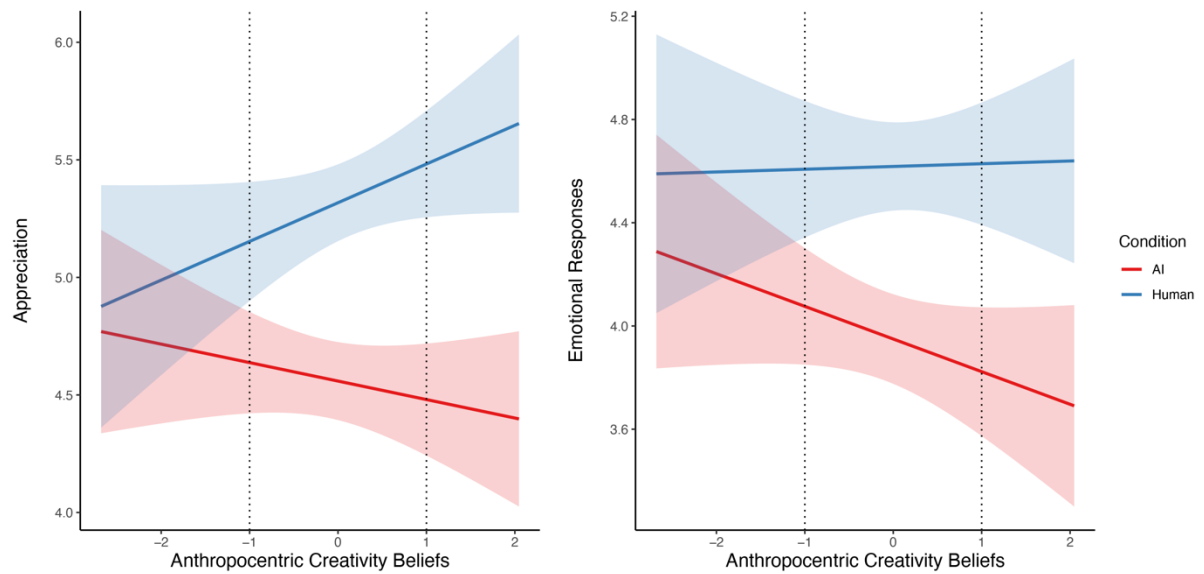
**Appreciation.** Participants in the human condition ( $M = 5.33$ ,  $SD = 1.01$ ) appreciated the music more than those in the AI condition ( $M = 4.57$ ,  $SD = 1.25$ ),  $W = 11150$ ,  $p < .001$ ,  $r = -0.31$ . Next, per our pre-registered exploratory analyses<sup>7</sup>, we tested whether this difference was influenced by anthropocentric creativity beliefs (ACB). ACB scores were standardised using z-scores prior to analysing interactions. Our findings revealed a significant interaction between condition and ACB on music appreciation,  $B = 0.24$ ,  $SE = 0.12$ ,  $t(368) = 2.04$ ,  $p = .042$ ,  $f^2 = 0.01$ , as depicted in the left panel of Figure 3.2, with parameter estimates presented in Supplementary Table 3.4. Probing the interaction showed that the effect was stronger at higher levels of ACB (human condition  $M = 5.48$ ,  $SE = 0.12$  and AI condition  $M = 4.48$ ,  $SE = 0.12$ ),  $t(368) = -5.99$ ,  $p < .001$ , than at lower levels of ACB (human condition  $M = 5.15$ ,  $SE = 0.13$  and AI condition  $M = 4.64$ ,  $SE = 0.11$ ),  $t(368) = -3.05$ ,  $p = .002$ . Lastly, we conducted a moderated mediation analysis with 10,000 bootstrap samples using the PROCESS macro (Model 7; Hayes, 2017) to examine whether perceived threat mediated this effect; path coefficients are presented in Figure 3.3. Our results showed a significant index of moderated mediation, index = 0.06,  $SE = 0.03$ , 95% CI [0.00, 0.13], providing evidence for the role of threat as an underlying mechanism.

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<sup>7</sup> In the pre-registration, exploratory analyses are categorised as 'secondary' due to the pre-registration form format.

**Figure 3.2**

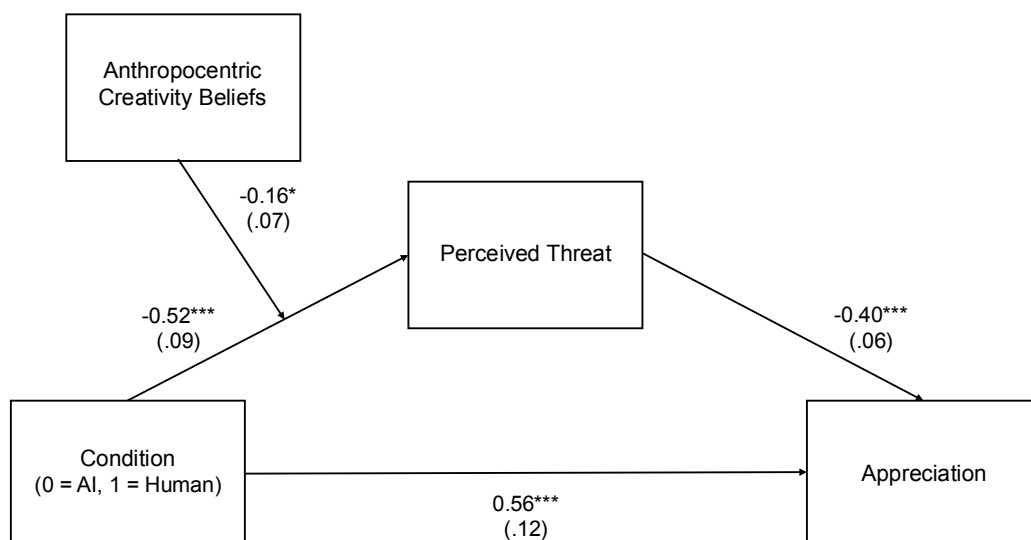
*The Interactive Effects of Music Origin Condition and Anthropocentric Creativity Beliefs on Appreciation and Emotional Responses in Study 3.2*



*Note.*  $N = 372$ . The dotted vertical lines indicate lower and higher levels of anthropocentric creativity beliefs at 1  $SD$  below and above the mean, respectively. Shaded areas represent 95% confidence bands.

**Figure 3.3**

*The Moderated Mediation of Condition and Anthropocentric Creativity Beliefs on Appreciation via Perceived Threat in Study 3.2*

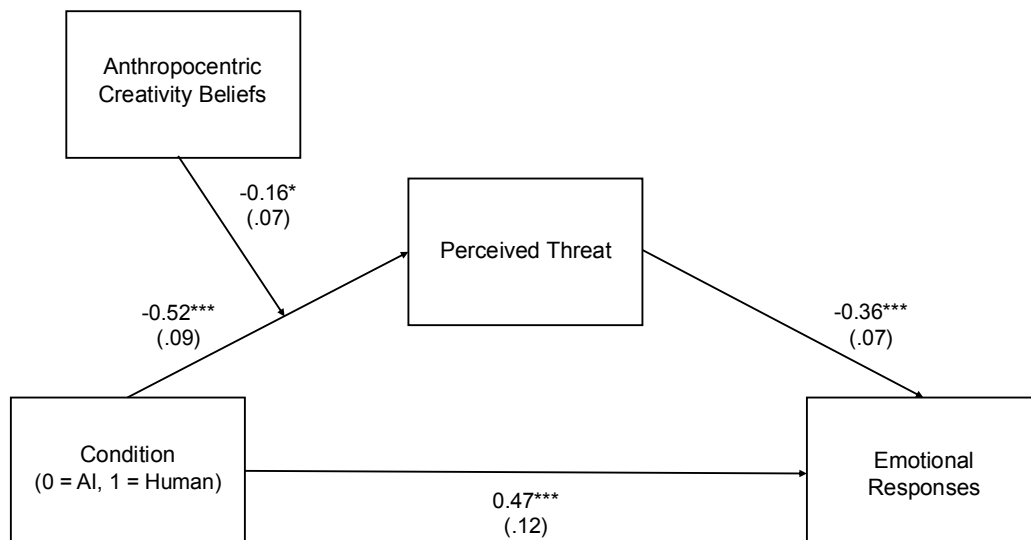


*Note.*  $N = 372$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; unstandardised coefficients are reported; standard errors are presented within parentheses.

**Emotional Responses.** Participants in the human condition ( $M = 4.62$ ,  $SD = 1.11$ ) reported experiencing stronger emotions in response to the music compared to those in the AI condition ( $M = 3.96$ ,  $SD = 1.27$ ), Wilcoxon's  $W = 12270$ ,  $p < .001$ ,  $r = -0.25$ . Despite the results of the pre-registered exploratory analysis showing a non-significant interaction between condition and ACB,  $B = 0.14$ ,  $SE = 0.12$ ,  $t(368) = 1.10$ ,  $p = .273$ ,  $f^2 = 0.00$  (parameter estimates are presented in Supplementary Table 3.4), the trend was in the expected direction (see the right panel of Figure 3.2). An inspection of the interaction showed that, at higher levels of ACB, the human condition ( $M = 4.63$ ,  $SE = 0.12$ ) scored higher than the AI condition ( $M = 3.82$ ,  $SE = 0.13$ ),  $t(368) = -4.60$ ,  $p < .001$ . Similarly, at lower levels of ACB, the human condition ( $M = 4.61$ ,  $SE = 0.13$ ) scored higher than the AI condition ( $M = 4.08$ ,  $SE = 0.11$ ),  $t(368) = -3.00$ ,  $p = .003$ . A moderated mediation analysis supported an indirect effect through perceived threat, with an index of moderated mediation = 0.06,  $SE = 0.03$ , 95% CI [0.00, 0.12]; see Figure 3.4 for path coefficients.

**Figure 3.4**

*The Moderated Mediation of Condition and Anthropocentric Creativity Beliefs on Emotional Responses via Perceived Threat in Study 3.2*



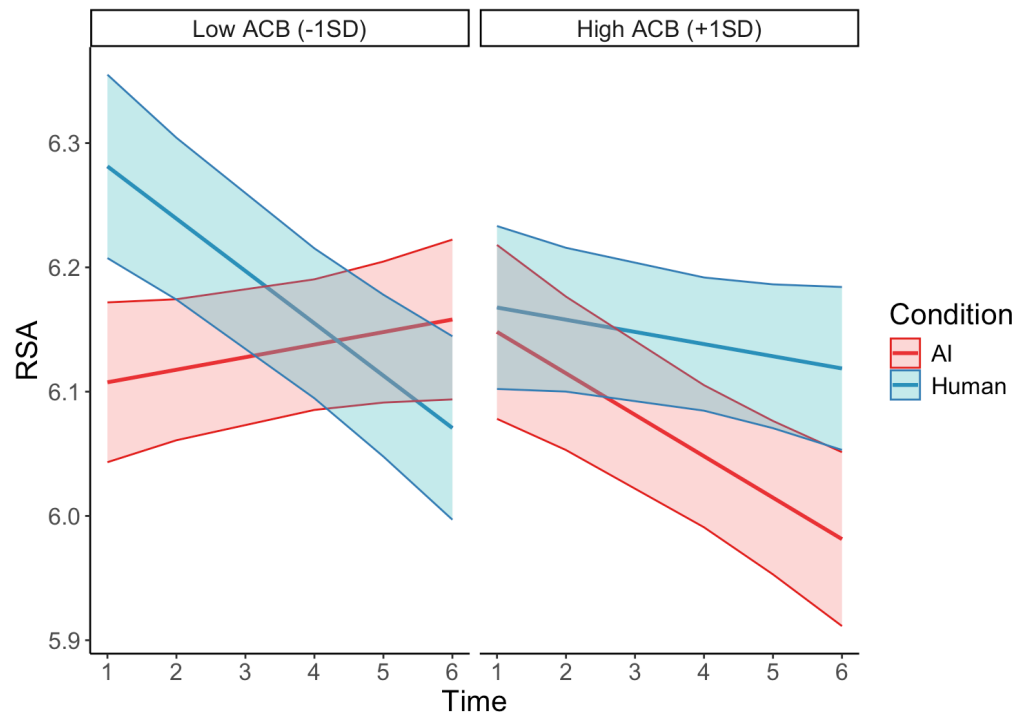
*Note.*  $N = 372$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; unstandardised coefficients are reported; standard errors are presented within parentheses.

### ***Respiratory Sinus Arrhythmia***

Due to a technical issue, we could not obtain RSA data from 17 participants, leaving 355 participants with complete data for analysis. We conducted a multilevel analysis, regressing RSA scores on time, condition, ACB, and their interaction, while controlling for baseline RSA. Model comparison indicated a model with AR1 correlation structure, and random intercepts had the best fit.

**Figure 3.5**

*The Interactive Effects of Time and Condition on Respiratory Sinus Arrhythmia in Study 3.2*



*Note.*  $N = 355$ . ‘ACB’ stands for ‘anthropocentric creativity beliefs’. Shaded areas represent 95% confidence bands.

Figure 3.5 depicts the three-way interaction between condition, time, and ACB using the scores predicted by the model, with parameter estimates available in Supplementary Table 3.5. We did not observe a significant cross-level interaction of condition and time on RSA,  $\gamma = -0.01$ ,  $SE = 0.02$ ,  $t(1771) = -0.89$ ,  $p = .373$ . Yet as per our pre-registered exploratory analysis, a significant three-way interaction with ACB emerged,  $\gamma = 0.04$ ,  $SE = 0.02$ ,  $t(1771) = 2.34$ ,  $p = .020$ . To probe this interaction, we partitioned the data into subgroups for each condition separately. Subsequently, we transformed the z-scored ACB scores to represent high and low levels by respectively subtracting or adding 1 to them (Aiken & West, 1991). This transformation allowed us to examine the trends in RSA for each condition at both high and low levels of ACB. Results showed that at high levels of ACB, the AI condition exhibited a significant decrease in RSA over time,  $\gamma = -0.03$ ,  $SE = 0.02$ ,  $t(868) = -2.10$ ,  $p = .036$ , while the human condition showed no significant effect,  $\gamma = -0.01$ ,  $SE = 0.02$ ,  $t(903) = -0.61$ ,  $p = .539$ . Conversely, at low levels of ACB, the AI condition showed no significant change over time,  $\gamma = 0.01$ ,  $SE = 0.01$ ,  $t(868) = 0.67$ ,  $p = .505$ , whereas the human condition exhibited an unanticipated decrease in RSA,  $\gamma = -0.04$ ,  $SE = 0.02$ ,  $t(903) = -2.35$ ,  $p = .019$ .

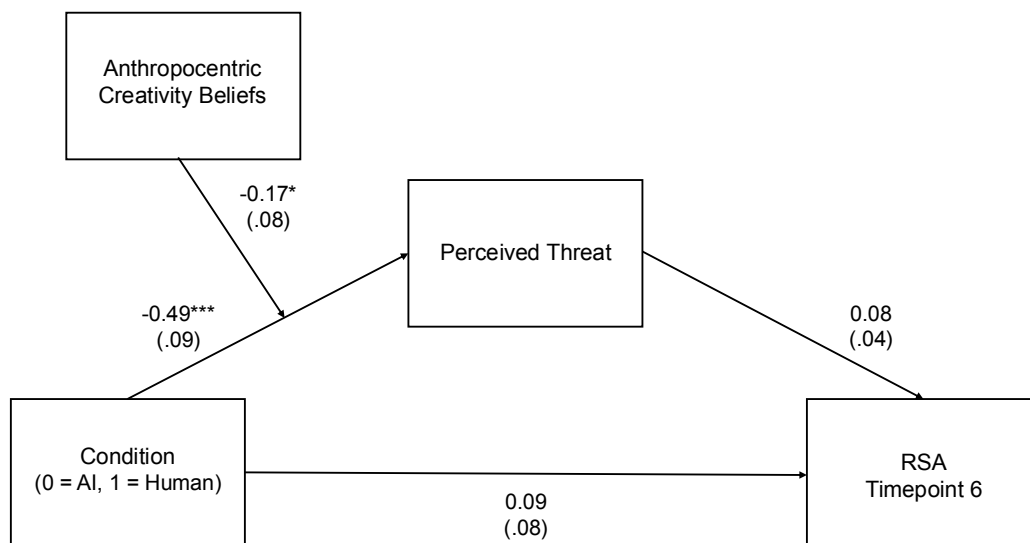
Lastly, a moderated mediation analysis was conducted using only the sixth timepoint of RSA as the dependent variable, as it is not feasible to include multiple time points in this analysis. The sixth time point was chosen as the most fitting alternative as it represents the cumulative physiological response to the entire music track. We controlled for baseline RSA to account for individual differences prior to listening. Our findings revealed a non-significant indirect effect,

index of moderated mediation =  $-0.01$ ,  $SE = 0.01$ , 95% CI  $[-0.04, 0.00]$ ; path coefficients are displayed in Figure 3.6.

These findings provide further support for the embodied-threat account: People's lower appreciation, dampened aesthetic emotions, and decreased vagal tone in response to AI-generated versus human-made music were largely driven by perceived threat, and the effects were more pronounced among people with stronger (rather than weaker) anthropocentric creativity beliefs.

**Figure 3.6**

*The Moderated Mediation of Condition and Anthropocentric Creativity Beliefs on Respiratory Sinus Arrhythmia via Perceived Threat in Study 3.2*



*Note.*  $N = 355$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; unstandardised coefficients are reported; standard errors are presented within parentheses. 'RSA' stands for 'respiratory sinus arrhythmia'. The analysis was conducted while statistically controlling for baseline RSA.

### General Discussion

We investigated two explanations for individuals' tendency to devalue AI- (as opposed to human-) attributed music: motivated reasoning and embodied threat. Across two studies, people exhibited less appreciation, weaker aesthetic emotions, and greater physiological stress in response to AI-attributed music. Study 3.2 further showed these effects to be particularly pronounced among individuals with stronger anthropocentric creativity beliefs, who were more prone to experiencing AI-generated music as a threat to human creative uniqueness. Together, these findings suggest that the depreciation of AI-generated music does not only reflect deliberate, motivated reasoning, but also deeper, automatic embodied threat responses.

Our study demonstrates that research on attitudes towards generative AI can benefit significantly from complementing explicit self-report measures with implicit measures, such as physiological responses. Insights from intergroup relations and prejudice research highlight the importance of disentangling explicit from implicit attitudes, as these can diverge and influence

behaviour in different ways (Dovidio et al., 2002). This is relevant to human/AI relations, as people respond to AI as though it were an outgroup that threatens their sense of uniqueness and perceived ingroup superiority.

In our study, implicit physiological attitudes aligned with explicit self-reports, likely because people quite openly express disdain for AI in creative fields like music composition (Tigre Moura & Maw, 2021). However, this need not always be the case. Previous research shows that people can be ambivalent about AI (Fietta et al., 2022). Explicitly, they may express favourable attitudes because of its perceived benefits, such as efficiency and productivity. But implicitly, they may harbour concerns about its long-term consequences, such as job redundancy and privacy issues. This complexity can only properly be understood if researchers use implicit measures in tandem with explicit ones. And knowing how people truly feel is vital for improving human-AI relations.

Our research suggests that resistance towards AI-generated art stems from a fear of the consequences of AI's creative capabilities. As such, a comprehensive approach can help reduce people's feelings of threat. Policymakers can assist in protecting artists' rights by implementing measures that safeguard creative authorship and ensure greater transparency about the involvement of creative AI. Clearly indicating whether and to what extent AI was used would help art consumers make informed decisions and help professional artists preserve their livelihoods. Human artists can consider how to position themselves in a world that is becoming more integrated with AI, for instance, by emphasising the uniquely human elements of their work, like intentionality, effort, emotional depth, and personal narrative. Lastly, feelings of threat can be reduced by emphasising that AI tools are trained on human data and developed to assist human creativity, not replace it.

Although our research provides evidence for a deeply embedded tendency to devalue AI-attributed music, it is important to consider potential limitations and how these can inform future scholarly efforts. One limitation pertains to the potential changes in the demonstrated effects with repeated exposure over time. As AI's creative influence becomes more prevalent, initial feelings of novelty and associated perceived threat may wear off. This could reduce negative explicit evaluations and possibly even increase positive evaluations as people become more accustomed to AI-generated art. To address these possibilities, longitudinal studies are needed to examine how familiarity and repeated exposure influence feelings of threat and evaluations of AI-generated art over time.

Another limitation is our research's focus on a single music style: emotionally evocative orchestral music. AI is increasingly implemented in other popular genres like electronic music, raising the question as to whether people would show a similar response when listening to AI-created music in those styles. Previous research found that although people reported liking classical music less if it was AI- as opposed to human-made, this effect was not found for electronic music (Shank et al., 2023). This suggests that people may feel less threatened by AI when listening to genres that are seen as inherently more computer-generated. Future research should test whether styles like electronic music elicit less threat, suggesting different patterns of acceptance across genres.

As creative industries eagerly explore the integration of AI in their field, its acceptance may well depend on the extent to which it is perceived as encroaching on traditionally human domains. Our research shows that creative AI is met by apprehension by many, as people respond differently to its art not only in their minds, but also in their hearts.

# 4

## **The Art of Acceptance: The Effect of Engagement with Art on Attitudes Towards Immigrants**

This chapter is based on Dunham, R., Van Kleef, G. A., & Stamkou, E. (2025). *The Art of Acceptance: The Effect of Engagement with Art on Attitudes Towards Immigrants*. Manuscript currently under review at *Group Processes & Intergroup Relations*.

“This is the power of art: The power to transcend our own self-interest, our solipsistic zoom-lens on life, and relate to the world and each other with more integrity, more curiosity, more wholeheartedness.”

– Popova (2011)

This quote by writer Maria Popova encapsulates an often-claimed societal benefit of art, namely its ability to shape the way that we relate to and interact with others. Intuitively, it makes sense. Great works of art have the power to provoke thought by offering unique perspectives and making us think differently (Pelowski et al., 2017). They can also move us, evoking strong emotions, personal associations, and physiological responses (Goldstein, 1980; Pelowski, 2015). However, while considerable research has been done on *intrapersonal* effects that art engagement can have on the beholder (e.g., on aesthetic appreciation, emotional responses, and wellbeing; Leder et al., 2004; Pelowski et al., 2017; Trupp et al., 2022), its *interpersonal* effects (i.e., its downstream consequences on social interactions) have received less scholarly attention. Can engaging with impactful art make us more tolerant of unfamiliar others and more inclined to treat them more favourably? The current paper explores this possibility and provides initial support for the view that the self-transcendent effects of art engagement can improve our attitudes towards immigrants.

### **The Interpersonal Effects of Art Engagement**

What are the benefits of art? This question has plagued philosophers and scientists for centuries and it always appears when proponents and opponents of art debate its value for society. Some argue that art can enrich our lives by exposing us to novel perspectives and different worldviews (Christensen et al., 2023; Sherman & Morrissey, 2017), thereby catalysing meaningful social change (Stamkou & Keltner, 2020), while others see it as pointless indulgence, with little or no benefit beyond its immediate hedonic value. In this paper, we offer support for the former—that impactful art can benefit society in tangible ways by positively affecting the way that we relate to unfamiliar others such as immigrants. We contend that impactful art experiences can foster social bonding in a way that can transcend clear ingroup/outgroup distinctions.

Art is a promising medium for eliciting social change as it provides alternative views of reality that can influence our attitudes towards others. This is supported by research on prejudice reduction, showing that entertainment can be an effective strategy for reducing biases (Paluck et al., 2021). And, based on the contact hypothesis (Allport, 1979), it shows that exposure to underrepresented groups through educational messages in narrative media can enhance attitudes towards them. However, it examines the effects of exposure to information on specific groups rather than the impact of exposure to art itself. For that, we need to compare the effectiveness of art to that of non-art mediums to understand how it shapes perceptions.

Further support for our thesis can be derived from cross-sectional studies on art’s interpersonal outcomes which have revealed that engaging with a broad range of art forms is positively associated with prosocial and cooperative behaviour (Kou et al., 2020; Leroux & Bernadska, 2014; Van de Vyver & Abrams, 2018). However, while these studies are informative, they do not allow us to infer causality and do not tap into potential underlying psychological mechanisms. We argue that the ability of impactful art to shape attitudes can extend beyond the specific content of the artwork and affect attitudes unrelated to the work of art itself. We expect

this because we believe art can have broader self-transcending effects, as discussed in the following section.

### **Art and Self-Transcendence**

We contend that impactful art has the power to make people transcend self-interest and show greater interest in and understanding of others. Previous work shows that one reason people enjoy narrative artforms is because it transports them into an alternate reality, helping them to identify with the individuals portrayed (Green et al., 2004). Reading literature has also been shown to be positively associated with socio-cognitive skills, enabling readers to take on others' perspectives and understand what they are going through (e.g., Dodell-Feder & Tamir, 2018). Although these processes of transportation and perspective taking help viewers gain a greater understanding of others' thoughts, art can also help people transcend self-interest through its mere affective impact. Self-transcendent emotions (such as beauty and awe) – commonly experienced in response to impactful art – have been shown to make people less self-centred and more tolerant of others (e.g., Piff et al., 2015). While impactful art can help people transcend self-boundaries in multiple ways, our focus here is on self-transcendent emotions because they can be experienced in response to art, irrespective of its topic (i.e., art that may or may not be thematically centred on immigrants).

Theory on the social functions of emotions advances the view that emotions evolved to play a vital role in our ability to coordinate and thrive as a species; they can help us build and maintain social bonds which, in turn, enable us to overcome challenges that may impede our effective functioning as a group (Fischer & Manstead, 2008; Keltner & Haidt, 2003). In line with this approach, theoretical and empirical accounts in social psychology show that self-transcendent emotions can have important downstream consequences for the way we relate to others, thereby suggesting that their function could extend beyond mere hedonic pleasure, into the interpersonal domain (Stamkou, 2022). But how can the emotions elicited by art make us any more tolerant of unfamiliar others?

We argue that self-transcendent emotions have the power to shift people's focus from their own momentary needs and concerns to the needs and concerns of others—thereby motivating them to do what they can to enhance the welfare of others (Stellar et al., 2017; Van Kleef & Lelieveld, 2022). Empirical findings using non-artistic elicitors have linked various self-transcendent emotions to prosocial behavioural outcomes, thereby lending support to this argument. People who experienced 'elevation' (commonly elicited using videos depicting morally virtuous acts) and 'beauty' (in response to nature) showed a greater willingness to help and do good for others, more favourable attitudes towards them, and had greater feelings of connectedness with stereotyped groups (Oliver et al., 2015; Schnall et al., 2010; Zhang et al., 2014). People who felt moved when viewing advertisements or by morally beautiful stories in the media showed a greater intention to donate money, and to offer emotional support and help to others in the face of the COVID-19 pandemic (De Leeuw et al., 2023; Strick et al., 2015).

Awe, another self-transcendent emotion, has been found to generate prosocial effects in both children and adults. Awe elicited by natural vistas and through experimental recall has been tied to increased generosity (Piff et al., 2015), greater readiness to donate time to help others (Rudd et al., 2012), and increased willingness to donate experimental earnings to refugees (Stamkou et al., 2023). Research has shown that this can be explained by its tendency to diminish our sense of self-importance, making us feel humbler and less entitled (Bai et al., 2017; Piff et al., 2015; Stellar et al., 2018). And awe, in turn, is commonly elicited by impactful works of art

(Keltner & Haidt, 2003). While these studies provide compelling support for a link between self-transcendent emotions and increased interest in others, it has still to be shown empirically that works of art that elicit such emotions can produce similar prosocial effects.

We know that, aside from shifting our focus towards others, self-transcendent emotions can set into motion motivational and mental processes geared towards enhancing our knowledge and understanding of others. Research shows that such emotions can activate epistemic motivations in those who experience them, by fostering curiosity and interest, prompting meaning-making, and promoting the acquisition of new knowledge (Anderson et al., 2020; McPhetres, 2019; Schoeller & Perlovsky, 2016). Applied to the interpersonal context, self-transcendent emotions can potentially elicit the desire to explore others' perspectives and understand them better, thereby suggesting that impactful art could enhance other-understanding (Sherman & Morrissey, 2017). Previous empirical work therefore offers support for a positive relationship between art engagement and other-understanding (in the form of empathy, tolerance, and social cognition) both for art in general (Mangione et al., 2018) and for specific artforms such as music (e.g., Eerola et al., 2016; Kawase, 2016), theatre (Greene et al., 2018), and literature (Mumper & Gerrig, 2017; but see Panero et al., 2016).

To summarise, we have argued that impactful art experiences can evoke profound self-transcendent states in the beholder that can have meaningful downstream consequences for the way that they perceive and relate to others. When engaging with impactful works of art, people commonly experience self-transcendent emotions, regardless of the topic, which cause them to momentarily shift their focus from the self towards others, motivating them to better understand others' mental and emotional states. We contend that this, in turn, can foster greater tolerance of unfamiliar others. We therefore hypothesise that art engagement will have a positive effect on attitudes towards immigrants.

### Overview of Studies

We conducted three studies to test our hypothesis in which we operationalised 'art engagement' in different ways. In Study 4.1, we explored data from the European Values Study (EVS). The EVS is a repeated cross-sectional survey deployed across 34 European countries that assesses residents' values and beliefs on a wide range of topics such as family, religion, work, and politics, together with an array of socio-demographic variables. We measured 'art engagement' in the form of belonging to organisations involved in art, music, and cultural activities. In Study 4.2, we set out to find causal support for our hypothesised effect of art engagement on attitudes towards immigrants. We developed an experimental paradigm in which we instructed participants to either vividly recall an impactful art experience (manipulation of art engagement) or an everyday meal experience (control condition), using detailed audio instructions. We then measured attitudes towards immigrants in the form of *infrahumanisation* (i.e., the tendency to perceive immigrants as less human). In Study 4.3, we sought to replicate Study 4.2 in a pre-registered experiment. Participants were instructed to relive either an impactful art experience or a clothes shopping experience (control condition). In addition to infrahumanisation of immigrants, we also measured attitudes in the form of interpersonal closeness and participants' willingness to sign a petition in favour of an immigrant cause. We also assessed participants' experienced emotions during the recall task to explore the extent to which the effect was driven by self-reported self-transcendent (as opposed to basic) emotions. Lastly, we conducted a meta-analytic synthesis of the findings across studies to further corroborate the results. We report all manipulations, measures, and exclusions in the studies and anonymised data, analysis code and

materials are openly available at:

[https://osf.io/pty4z/?view\\_only=cb2c52a617ea41b58715df1a3d35f41a](https://osf.io/pty4z/?view_only=cb2c52a617ea41b58715df1a3d35f41a).

### Study 4.1

#### Method

The individual-level data we analysed in Study 4.1 were gathered as part of the European Values Study (EVS) 2017 wave, the full release of which was made publicly available in October 2020 (EVS, 2020)<sup>8</sup>. The EVS 2017 integrated data set was collected from participants selected using random sampling procedures based in Albania, Armenia, Austria, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Great Britain, Hungary, Iceland, Italy, Lithuania, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russia, Serbia, Spain, Sweden, Slovakia, Slovenia, and Switzerland. Responses were collected using face-to-face interviews, online methods, or via postal paper-and-pencil surveys and all surveys were administered in participants' native language.

#### Participants

Out of the original  $N = 56,491$  responses, we excluded participants with incomplete responses to our variables of interest and next removed participants who belonged to the educational sector given that our independent variable appeared to conflate individuals involved in education with those in the arts (see 'Measures' section for a more detailed explanation). This resulted in a final sample of  $N = 32,608$ .

Our sample was balanced in terms of sex (51.02% female, 48.98% male). In terms of age, 12.40% were between 18-29 years, 34.01% and 53.60% were aged between 30-49 and upwards of 50 years, respectively. In terms of education, 19.19% had lower, 46.69% mid-level, and 34.12% had higher education completed. Our sample was balanced in terms of household net income, with 31.81% having low, 34.48% mid-level, and 33.72% high net income levels. Lastly, on average, the sample was on the middle of the political spectrum, ( $M = 5.47$ ,  $SD = 2.29$ , range: 1-10) and showed mid-levels of religiosity ( $M = 2.47$ ,  $SD = 1.03$ , range: 1-4).

#### Measures

**Art Engagement.** Participants' *art engagement* (be it active or passive) was measured using one item which asked whether they belonged to voluntary organisations involved in 'education, arts, music, or cultural activities' (0 = *no*, 1 = *yes*). Given that this item appeared to make no distinction between individuals who belong to *education* (who are not of interest to us) with those who belong to the *arts, music, or cultural activities* (our group of interest)<sup>9</sup>, we performed a list-wise exclusion of  $n = 6304$  participants who were involved in education either as students ( $n = 2777$ ) or teaching professionals ( $n = 3527$ ).<sup>10</sup>

**Attitudes Towards Immigrants.** We created an aggregate measure of individuals' attitudes towards immigrants ( $\alpha = .77$ ) using three items from the EVS survey (rated on a 10-point Likert scale). These items were: "Immigrants take jobs away from [participant's nationality]" (1 = *take away*, 10 = *do not take away*), "Immigrants make crime problems worse" (1

<sup>8</sup> The full data set can be downloaded at <https://europeanvaluesstudy.eu>

<sup>9</sup> Although some participants could arguably belong to both education as well as art, music, and cultural activities (e.g., if they taught art or were art students), we considered removing all participants involved in education to be a more conservative test of our hypothesis.

<sup>10</sup> We conducted our main analyses both with and without removing individuals who belonged to organisations involved in education and this did not change the pattern of our results in any meaningful way.

= *make worse*, 10 = *do not make worse*), and “Immigrants are a strain on the country’s welfare system” (1 = *are a strain*, 10 = *are not a strain*). Higher scores reflected more positive attitudes towards immigrants.

**Control Variables.** We controlled for sociodemographic variables available in the data set that could plausibly relate to attitudes towards immigrants<sup>11</sup>. We followed Enders & Tofighi's (2007) guidelines by applying group mean-centring to our continuous Level 1 control variables: *religiosity* and *political orientation*. Overall, we statistically controlled for *age* (coded as 1 = 18-29, 2 = 30-49, 3 = 50+ years old), *sex* (coded as 0 = female, 1 = male), *education level* (a harmonised variable with 1 = lower, 2 = middle, 3 = upper education<sup>12</sup>), *religiosity* (measured using the item: “How important is religion in your life?”, 1 = not at all important, 4 = very important), *household net income* (a harmonized variable with 1 = low, 2 = middle, 3 = high)<sup>13</sup>, and *political orientation* (measured using the item “In political matters, people talk of ‘the left’ and ‘the right’, how would you place your views on this scale, generally speaking?”, 1 = left, 10 = right; higher scores reflected greater political conservatism).

## Results

All our analyses were computed using R. Multilevel analyses were conducted using the package *lme4* (Bates et al., 2014) and *p*-values were computed using the package *lmerTest* (Kuznetsova et al., 2017). We used a stepwise approach and used the *anova* function to compare the fit of our statistical models using loglikelihood tests, Akaike Information Criterion (AIC), and Bayesian Information Criterion (BIC).

First, we conducted a preliminary analysis to test the appropriateness of using multilevel modelling on our data as our participants were nested within countries. We compared a null model in which we allowed intercepts to vary with a null model in which the intercept was fixed. Table 4.1 shows that the model with random intercepts fitted the data better, thereby justifying our use of multilevel modelling.

**Table 4.1**

*Fixed and Random Effect Model Comparisons in Study 4.1*

Model	<i>df</i>	AIC	BIC	logLik	Chi-square Difference	<i>p</i>
Fixed Intercept Model	2	148,573	148,590	-74,285		
Random Intercepts Model	3	145,065	145,091	-72,530	3509.7	<.001

*Note.* *N* = 32,608; maximum likelihood was used to estimate both models.

Next, we proceeded to our main analysis and computed a mixed-effects linear regression using maximum likelihood estimation. Our first model included only our control variables; in our second model we added ‘art engagement’ as an independent variable. As can be seen in Table 4.2

<sup>11</sup> Note that not controlling for these variables did not change our results in a significant manner.

<sup>12</sup> Participants whose education level was coded as ‘other’ (*n* = 77) were removed given the ambiguity of this category.

<sup>13</sup> The data from participants in Portugal (*n* = 1,142) could not be included because the entire sample did not provide responses about their household income due to a printing error that occurred when administering the survey.

(Model 2), all our independent variables except religiosity were significantly related to attitudes towards immigrants. Importantly, there was a positive relationship between art engagement and attitudes towards immigrants, even when controlling for relevant sociodemographic variables,  $B = 0.42$ ,  $t(32,590) = 10.95$ ,  $p < .001$ . In other words, individuals who actively or passively engaged with art, music, and cultural activities were more likely to hold positive attitudes towards immigrants.

**Table 4.2**

*Results of Multilevel Regression Analysis on the Relationship between Art Engagement and Attitudes towards Immigrants in Study 4.1*

	Model 1	Model 2
Sex <sup>a</sup>	-0.18 (0.02) ***	-0.17 (0.02) ***
Age <sup>b</sup>	-0.18 (0.03) ***	-0.18 (0.03) ***
Education <sup>c</sup>	0.62 (0.03) ***	0.59 (0.03) ***
Income <sup>d</sup>	0.18 (0.02) ***	0.18 (0.02) ***
Political Orientation <sup>e</sup>	-0.15 (0.01) ***	-0.14 (0.01) ***
Religiosity <sup>e</sup>	0.01 (0.01)	0.00 (0.01)
Art Engagement <sup>f</sup>		0.42 (0.04) ***
Intercept	5.10 (0.14) ***	5.06 (0.14) ***
AIC <sup>g</sup>	143,311	143,193
BIC <sup>h</sup>	143,411	143,302
LogLik (df)	-71,643 (32,596)	-71,584 (32,595)

*Note.*  $N = 32,608$ . Unstandardised coefficients are reported. Standard errors are in parentheses. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . <sup>a</sup> Coded as 0 = *female*, 1 = *male*; <sup>b</sup> Coded as 1 = 18-29, 2 = 30-49, 3 = 50+ years; <sup>c</sup> Coded as 1 = *lower*, 2 = *middle*, 3 = *upper*; <sup>d</sup> Coded as 1 = *low*, 2 = *medium*, 3 = *high*. <sup>e</sup> Variable is group mean-centred; <sup>f</sup> Coded as 0 = *no*, 1 = *yes*. <sup>g</sup> AIC stands for Akaike Information Criterion; <sup>h</sup> BIC stands for Bayesian Information Criterion.

## Discussion

The findings of Study 4.1 show initial support for a positive relationship between art engagement and attitudes towards immigrants in a large, ecologically valid cross-cultural sample. Since we hypothesised about *impactful* art's ability to shape attitudes towards immigrants, we consider these findings to be a conservative test of our hypothesis, given that arguably not all the art encounters participants had would have necessarily been deemed impactful. However, given the correlational nature of the data, we cannot make any causal inferences about the direction of the effect. While it could be that individuals' engagement with art makes them more tolerant of immigrants, so too could the reverse be true: Individuals who tend to hold more favourable attitudes towards immigrants could subsequently be more likely to become involved with art. Another limitation of this study was the operationalisation of the independent variable as it is somewhat ambiguous what exactly is meant by being "involved with voluntary organisations involved in art, music, and cultural activities." Were these individuals exposed to art by creating/performing themselves, or were they involved in such organisations in other ways (e.g., within more administrative or organisational roles) and therefore far less directly exposed to art? In our next studies, we set out to remedy these shortcomings by developing an experimental

paradigm that would allow us to make causal claims about the effect of people's experiences with art on their attitudes towards immigrants.

### Study 4.2

The goal of Study 4.2 was to seek causal evidence for the link between art engagement and attitudes towards immigrants. For this, we developed a new recall paradigm. Given that art appreciation is subjective, we asked participants to recall a self-chosen art experience that was impactful to them personally. In contrast to the previous study, we assessed intergroup attitudes more implicitly, in the form of *infrahumanisation* (see 'Measures' section below). The study was approved by the ethics review board (ERB code: 2021-SP-13316).

#### Method

##### *Participants*

We conducted a power analysis specifying a small to medium effect size  $f^2 = 0.02$ ,  $\alpha = .05$ , power = .80, which suggested a minimum sample of  $N = 395$  responses to detect an effect. We obtained  $N = 399$  complete responses from native UK participants who we recruited via Prolific. After removing five participants who failed our attention check and one participant who experienced technical difficulties loading the audio instructions, we were left with a final sample of  $N = 393$  participants ( $M_{\text{age}} = 41.78$ ,  $SD_{\text{age}} = 14.11$ ; 266 female, 126 male, one non-binary; with the vast majority having completed either tertiary (67.18%) or secondary (32.06%) education;  $M_{\text{political orientation}} = 39.12$ ,  $SD_{\text{political orientation}} = 20.60$  (on a scale of 100, where higher scores reflected greater political conservatism),  $M_{\text{SES}} = 4.40$ ,  $SD_{\text{SES}} = 1.42$  (on a 7-point scale, where higher scores reflected higher socio-economic status).

##### **Procedure**

We informed participants that they would be taking part in two unrelated studies within the same session to minimise the risk of demand characteristics. The first study would involve reliving a specific experience and answering questions about it. The second study would assess their views on a particular group in society. After consenting and providing demographic information, participants were randomly assigned to either recall an impactful art experience (the 'art' condition) or to recall the last meal that they ate (the 'control' condition). To maximise the emotional potency of the recall paradigm, we created two two-minute videos with audio instructions that resembled a guided meditation. While the narrator guided participants through the experimental manipulation, static on-screen text read: "Click the video to pause and resume play when needed. Please close your eyes and follow the spoken instructions" throughout the duration of the video. The narrator instructed participants to put on headphones, close their eyes, and follow the spoken instructions (see Measures section below). Transcripts of the audio instructions each condition listened to can be found in the Supplementary Materials. Next, participants moved on to the 'second', seemingly unrelated study in which they filled in the items assessing infrahumanisation of immigrants and finished with the manipulation check.

##### *Measures*

**Questions About the Experience Recalled.** After completing the recall task, we asked participants about their recalled experience to further solidify their thoughts and feelings. Participants in the 'art' condition were asked to "Please tell us which art form this artwork belonged to" with the answer options 1 = painting, 2 = sculpture, 3 = music, 4 = photography/film, 5 = dance, 6 = architecture, 7 = theatre, 8 = literature/poetry, and 9 = other. They were also asked two open questions: "Can you describe the artwork as best as possible?" and "What was it about the artwork that was impactful?" Conversely, participants in the control

condition were asked the multiple-choice question “Can you tell us what meal it was?”, (answer options: breakfast, brunch, lunch, dinner, other, and can’t remember), and the open question “Can you describe the meal as best as possible?” For the open questions, all participants were encouraged to provide short answers.

**Attitudes Towards Immigrants.** We measured attitudes towards immigrants by assessing differences in subtle discrimination in the form of *infrachumanisation*. The term ‘infrachumanisation’ refers to an implicit bias whereby individuals subconsciously perceive devalued outgroup members (in this case immigrants) as being ‘less human’ and thus less capable of possessing uniquely human characteristics than ingroup members—the characteristics in question being complex emotions (Leyens et al., 2000). To differentiate emotions in terms of complexity, a distinction is made between secondary emotions, considered to be unique to human experience due to their more cognitive and moral underpinnings (Demoulin et al., 2004), as opposed to primary emotions, thought to be experienced by both humans and animals.

Many studies have shown that people’s implicit tendency to view certain outgroups as inferior to their ingroup translates to them perceiving these groups as having less capacity to experience secondary emotions than their ingroup, irrespective of the emotions’ valence (see Demoulin, 2004b for a review). We therefore expected that, compared to the control condition, participants in the art condition would show a greater tendency to ascribe the capability of experiencing secondary emotions to immigrants, thereby reflecting a reduced tendency to dehumanise them and, thus, more positive attitudes towards them.

Participants were instructed to “Please use the sliders to indicate the extent to which you think immigrants feel the following emotions...”, with sliders ranging from 1-100. They were presented with six secondary emotions (tenderness, compassion, hope, guilt, shame, and remorse) previously used in a study by Azevedo and colleagues (2021), which we interspersed with distractor primary emotions (joy, excitement, pleasure, fear, sadness, and rage) to conceal the purpose of the measure. Together, these secondary emotions demonstrated good internal reliability ( $\alpha = .82$ ) and were aggregated to form a single index of *infrachumanisation*, whereby higher scores reflected a reduced tendency to *infrachumanise* (i.e., more positive attitudes towards) immigrants.

**Manipulation Check.** We used a four-item scale ( $\alpha = .80$ ) to establish whether our manipulation was successful. Two example items were the extent to which the experience they recalled involved “a special experience” and “a work of art” (1 = *not at all*, 7 = *very much*), with higher scores reflecting more artistic experiences.

## Results

Descriptives and intercorrelations among all variables are presented in Supplementary Table 4.1.

### *Manipulation Check*

Results showed that participants in the art condition ( $M = 5.80$ ,  $SD = 0.95$ ) reported experiences that were more artistic than those in the control condition ( $M = 2.53$ ,  $SD = 1.11$ ),  $B = 3.27$ ,  $SE = 0.10$ ,  $t(389) = 31.37$ ,  $p < .001$ , 95% CI [3.07, 3.48], thereby suggesting that our manipulation was successful.

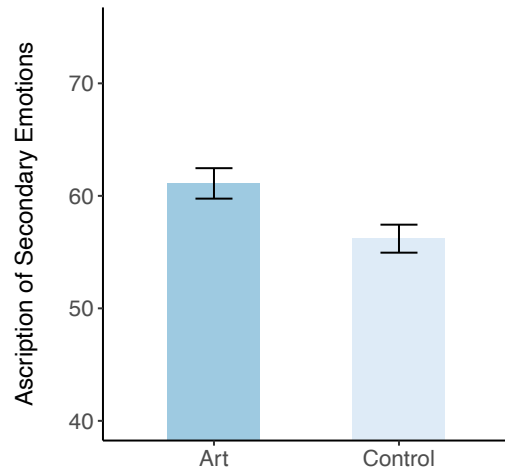
### *Infrachumanisation*

In line with our hypothesis, participants in the art condition ( $M = 61.11$ ,  $SD = 18.85$ ) ascribed more secondary emotions to immigrants than those in the control condition ( $M =$

56.19,  $SD = 17.55$ ), thereby reflecting a reduced tendency to inhumanise them,  $B = 4.91$ ,  $SE = 1.84$ ,  $t(391) = 2.68$ ,  $p = .008$ , 95% CI [1.30, 8.52] (see Figure 4.1).<sup>14</sup>

**Figure 4.1**

*Ascription of Secondary Emotions (Infrhumanisation) Per Condition in Study 4.2*



*Note.*  $N = 393$  ( $n = 194$  in art and  $n = 199$  in control condition); error bars denote standard errors.

## Discussion

Study 4.2 builds on the correlational findings of our previous study by providing causal support for our hypothesis that art engagement can foster tolerance towards immigrants. Compared to participants in the control condition, participants in the art condition were less likely to inhumanise immigrants by perceiving them as being more capable of experiencing secondary emotions. Aside from allowing us to draw causal conclusions, Study 4.2 built on its predecessor by providing insight into participants' attitudes. By concealing the intention of our study (i.e., presenting it as two seemingly unrelated studies), and using a more unobtrusive attitudinal measure (i.e., seemingly about immigrants' emotional experience) we were able to minimise the risk of socially desirable responding among participants and thus better tap into their true feelings on the matter.

However, the study was not without its limitations. Since our dependent variable was based on self-report, in Study 4.3, we decided to test the robustness of our findings by also implementing a behavioural measure. In addition, although we found a main effect of art engagement on attitudes towards immigrants, we had yet to establish the underlying psychological mechanism driving the effect, which we set out to subsequently explore. Lastly, we wanted to rule out the possibility that the effect was driven by the specific comparison condition used. We therefore adapted the instructions of the control condition to allow us to compare the

<sup>14</sup> As an additional robustness check, we also statistically controlled for socio-demographic variables that could provide alternative explanations for our findings (see Supplementary Materials). Although we used random assignment to conditions which should protect from non-random distribution of these variables, we opted to repeat our analyses while controlling for them to be consistent with the analysis in Study 4.1. Importantly, doing so did not change our results in a meaningful way.

impactful art condition to a control condition asked to relive a less everyday, mundane experience (i.e., a clothes shopping experience).

### Study 4.3

The primary goal of Study 4.3 was to replicate our previously found effect of reliving an impactful art experience on attitudes towards immigrants. This time, in addition to our previously employed measure of inhumanisation, we also assessed feelings of interpersonal closeness and used a behavioural measure in the form of a petition that participants could sign in favour of an immigrant cause. This way, we assessed the robustness of the previously found effect, and further, the convergent validity of our dependent variable.

We also made an adjustment to the instructions of our control condition by asking them to recall the last time that they bought an item of clothing, as like the art condition, this experience would also involve interacting with a humanmade object that, while functional, also involved aesthetic considerations. Lastly, we set out to explore an affective component of self-transcendence, by assessing the extent to which the effect was driven by differences in experienced self-transcendent emotions. Our study was pre-registered on AsPredicted.org ([https://aspredicted.org/blind.php?x=7ZJ\\_FXT](https://aspredicted.org/blind.php?x=7ZJ_FXT)).

## Method

### Participants

We conducted a power analysis again aiming for a small to medium effect size with  $f^2 = 0.02$ ,  $\alpha = .05$ , power = .80, which suggested a minimum sample of  $N = 395$  responses to detect an effect. We gathered  $N = 403$  complete responses from native UK participants who were recruited via Prolific. After removing five participants who failed an attention check embedded in the questionnaire, we were left with a final sample of  $N = 399$  participants ( $M_{\text{age}} = 32.28$ ,  $SD_{\text{age}} = 12.85$ ; 298 female, 100 male, one non-binary; with the vast majority having completed either tertiary (70.43%) or secondary (29.58%) education;  $M_{\text{political orientation}} = 32.86$ ,  $SD_{\text{political orientation}} = 23.02$  (on a scale of 100, where higher scores reflected greater political conservatism),  $M_{\text{SES}} = 4.19$ ,  $SD_{\text{SES}} = 1.39$  (on a 7-point scale, where higher scores reflected higher SES).

### Procedure

Participants were once again led to believe that they would be taking part in two unrelated studies within the same session. After giving consent and providing demographic information, participants were randomly assigned to either the art ( $n = 196$ ) or control condition ( $n = 203$ ). Participants in the art condition followed the exact same instructions as in the previous study. Participants in the control condition were this time asked to recall the last time that they bought an item of clothing. A transcript of the audio instructions can be found in the Supplementary Materials. Afterwards, they were asked questions about the experience they recalled and responded to items assessing the emotions that they experienced. Next, participants moved on to the ‘second’, seemingly unrelated study in which they filled in the interpersonal closeness, inhumanisation, and petition measures. They finished by answering the manipulation check items.

### Materials and Measures

**Questions about the Experience Recalled.** After the experimental manipulation, participants in the art condition were asked the same questions about the experience they recalled as in Study 2. Conversely, participants in the control condition were asked the multiple-choice question of whether they could remember what day of the week their experience occurred on (with eight answer options for each day of the week and the option ‘Can’t remember’) as well

as the open question: “Can you describe the item of clothing as best as possible?” while encouraged to respond concisely.

**Emotions Experienced During the Recall Paradigm** To explore which emotions participants experienced during the recall task, we asked them to rate how intensely they experienced a list of 9 emotions (five basic emotions: happiness, sadness, anger, disgust, fascination, and four self-transcendent emotions: beauty, awe, fascination, and feeling moved) using a 7-point Likert scale (1 = *not at all*, 7 = *very much so*).

**Attitudes Towards Immigrants.** We assessed attitudes towards immigrants using three dependent variables: interpersonal closeness, inhumanisation, and signing a petition in favour of immigrants.

**Interpersonal Closeness.** We used a modified version of the ‘Inclusion of Other in the Self’ measure by Aron and colleagues (1992) which presents participants with five increasingly overlapping Venn diagrams, asking them to select which one best reflects how close they feel to ‘others’ (which we adapted to read ‘immigrants’) with higher scores reflecting greater feelings of interpersonal closeness (and thus more positive attitudes towards immigrants).

**Inhumanisation.** We measured inhumanisation of immigrants using the exact same measure as in Study 4.2 ( $\alpha = .84$ ).

**Signing a Petition in Favour of an Immigrant Cause.** We presented participants with a petition based on an actual existing petition being distributed online at the time of the study which highlighted a timely cause involving immigrants in the UK (see Supplementary Materials for more information). After reading about the situation, we informed participants that in response to these policies, immigrants’ rights activists had started a petition to offer support for immigrants and to urge the UK government to adopt a more open stance towards them. We then followed an approach used by Kteily and colleagues (2015) by informing participants that the petition sponsor allowed us to use Prolific IDs as a proxy for names, and we showed the participant’s own Prolific ID underneath to enhance the credibility of the petition. We then asked participants if they would like to assign their Prolific ID to the petition, thereby reflecting more positive attitudes towards immigrants (coded as 1) or not (coded as 0).

**Manipulation Check.** We used the same manipulation check scale as in Study 4.2 ( $\alpha = .79$ ).

## Results

There were significant positive correlations between all three dependent variables, (see Supplementary Table 4.3) thereby suggesting that they were tapping into the same construct, attitudes towards immigrants.

### Manipulation Check

In line with our expectations, participants in the art condition ( $M = 5.69$ ,  $SD = 1.02$ ) were more likely than those in the control condition ( $M = 2.35$ ,  $SD = 0.89$ ) to report having recalled an artistic experience,  $B = 3.34$ ,  $SE = 0.10$ ,  $t(396) = 35.00$ ,  $p < .001$ , 95% CI [3.15, 3.53]. Therefore, we again concluded that our manipulation was successful.

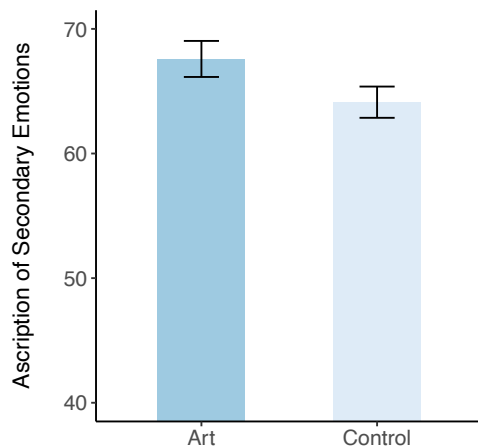
### Confirmatory Analyses

**Interpersonal Closeness.** Contrary to our expectations, participants in the art condition ( $M = 2.82$ ,  $SD = 1.24$ ) did not differ from those in the control condition in their feelings of interpersonal closeness towards immigrants ( $M = 2.69$ ,  $SD = 1.29$ ),  $B = 0.13$ ,  $SE = 0.13$ ,  $t(397) = 1.04$ ,  $p = .300$ , 95% CI [-0.12, 0.38].

**Infrahumanisation.** As shown in Figure 4.2, the difference between the art condition ( $M = 67.60$ ,  $SD = 20.20$ ) and the control condition ( $M = 64.10$ ,  $SD = 17.90$ ) failed to reach statistical significance but the direction of effects was as pre-registered,  $B = 3.47$ ,  $SE = 1.91$ ,  $t(397) = 1.82$ ,  $p = .070$ , 95% CI [-0.28, 7.23].

**Figure 4.2**

*Ascription of Secondary Emotions (Infrahumanisation) Per Condition in Study 4.3*



*Note.*  $N = 399$  ( $n = 196$  in art and  $n = 203$  in control condition); error bars denote standard errors.

**Petition Signing.** A binary logistic regression showed that participants in the art condition were more likely to sign the petition in favour of immigrants than those in the control condition,  $B = 0.62$ ,  $SE = 0.22$ ,  $z(397) = 2.85$ ,  $p = .004$ , Odds Ratio = 1.86, 95% CI [1.22; 2.86], thereby lending support to our hypothesis.<sup>15</sup>

### **Exploratory Analyses**

**Emotional Experience.** Except for happiness, which participants experienced similar levels of across both conditions, participants in the art condition reported higher levels of all basic and self-transcendent emotions compared to the control condition (all  $p$ 's  $< .05$ ), with differences in self-transcendent emotions being noticeably more pronounced than differences in basic emotions (see Supplementary Table 4.6). These overall higher levels of emotions would suggest that participants in the art condition had a more emotionally laden experience than those in the control condition.

Next, we set out to investigate how the nine experienced emotions clustered together. We conducted a principal component analysis (PCA) in JASP using promax rotation, to allow for correlated factors. The PCA yielded two factors with eigenvalues greater than 1.00 (3.08 and 3.41), which was also supported by a visual inspection of the scree plot. The first factor consisted of the five basic emotions (with 'happiness' reverse-coded), had a reliability of  $\alpha = .83$ , and accounted for 31.1% of the item variance. The second factor consisted of the four self-

<sup>15</sup> We again repeated all three of our main analyses while statistically controlling for socio-demographic variables to rule out alternative explanations. We also controlled for 'positive mood' to rule it out as a potential confounding variable. As can be seen in the Supplementary Materials, controlling for socio-demographics or positive mood did not change the pattern of effects in a meaningful way.

transcendent emotions, with a reliability of  $\alpha = .90$ , accounting for 33.7% of the item variance. Based on these findings, we decided to create two composite variables for our exploratory mediation analyses: basic emotions (with happiness reverse-coded) and self-transcendent emotions.

We next aimed to establish the extent to which the effect of reliving an impactful art experience on attitudes towards immigrants was driven by differences in the types of emotions participants experienced during the task, by conducting a parallel mediation using the PROCESS macro (Model 4; Hayes, 2017). Results of all three mediation models are displayed in Figures 4.3-4.5 with indirect effects presented in Table 4.3. Our findings showed that only the indirect effects via self-transcendent emotions on both interpersonal closeness and petition signing were significant. Interestingly, while there was no mediation of interpersonal closeness via self-transcendent emotions (given the absence of a direct effect), there was an indirect effect (see Hayes, 2009), suggesting that art engagement increased self-transcendent emotions, which in turn increased feelings of interpersonal closeness. The indirect effect via basic emotions was only significant for petition signing. Thus, across our dependent variables, we found more robust evidence for the role of self-transcendent emotions than for basic emotions.

**Table 4.3**

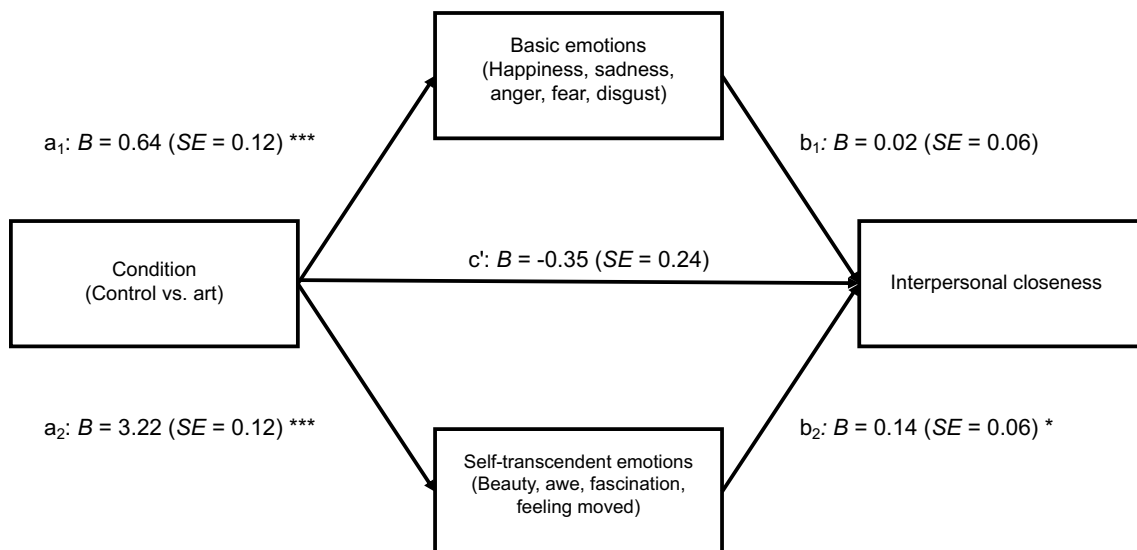
*Indirect Effects of the Parallel Mediation Models in Study 4.3*

Mediator	Interpersonal Closeness		Infrahumanisation		Petition Signing	
	<i>B (SE)</i>	95% CI	<i>B (SE)</i>	95% CI	<i>B (SE)</i>	95% CI
Basic Emotions	0.02 (0.03)	[-0.05, 0.09]	-0.28 (0.58)	[-1.48, 0.87]	0.14 (0.08)	[0.01, 0.33]
Self-transcendent Emotions	0.46 (0.19)	[0.09, 0.84]	4.94 (2.92)	[-0.82, 10.67]	0.74 (0.32)	[0.13, 1.39]

*Note.*  $N = 399$ ; CI = confidence interval. Confidence intervals were computed based on 10,000 bootstrap samples. Intervals that exclude zero reflect a significant indirect effect.

**Figure 4.3**

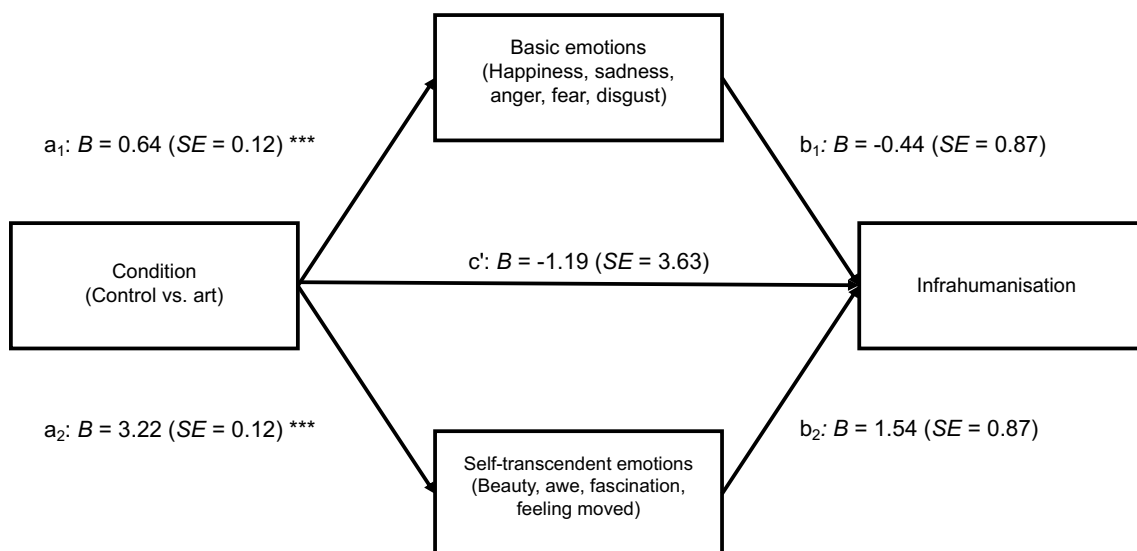
*Parallel Mediation Model of the Effect of the Recall Paradigm on Interpersonal Closeness in Study 4.3*



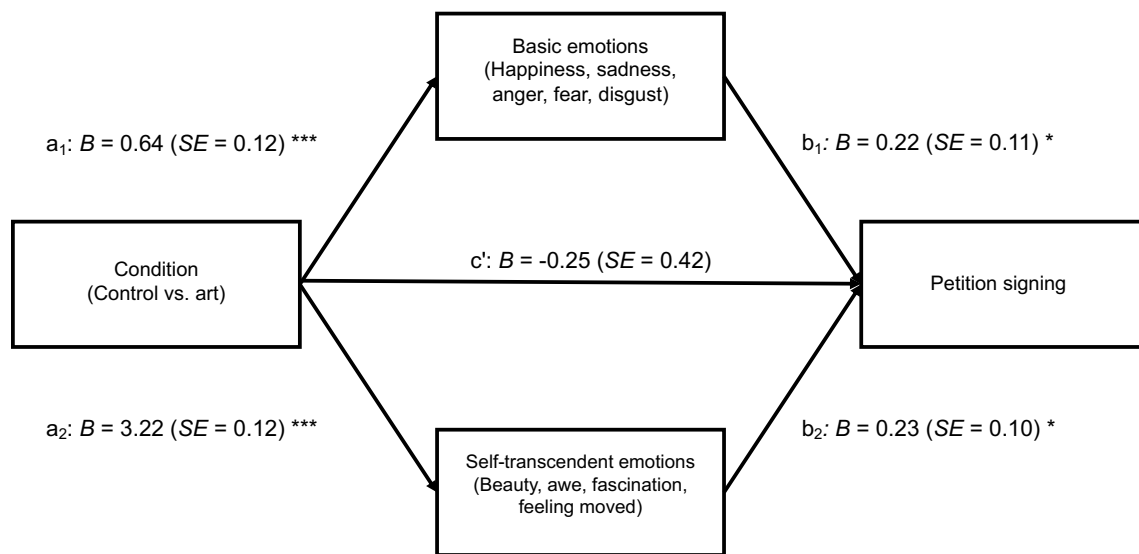
*Note.*  $N = 399$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; unstandardised coefficients are reported.

**Figure 4.4**

*Parallel Mediation Model of the Effect of the Recall Paradigm on Infrahumanisation in Study 4.3*



*Note.*  $N = 399$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; unstandardised coefficients are reported.

**Figure 4.5***Parallel Mediation Model of the Effect of the Recall Paradigm on Petition Signing in Study 4.3*

Note.  $N = 399$ . \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; unstandardised coefficients are reported.

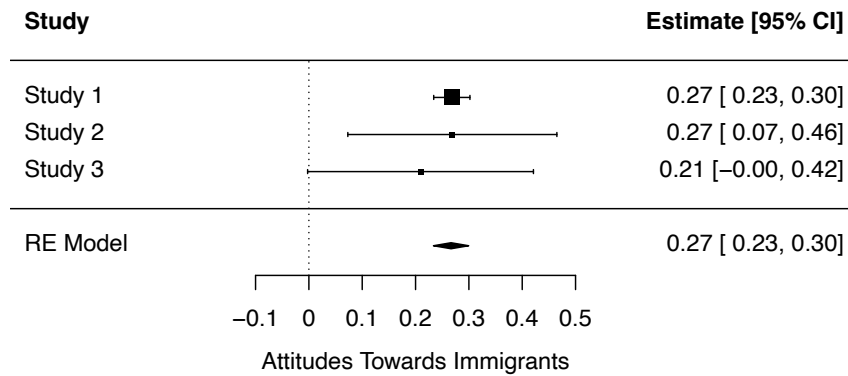
## Discussion

The goals of Study 4.3 were to test the robustness of our previous findings, to replicate them with a behavioural measure, and to explore the proposed psychological mechanism (participants' emotional experience) underlying these effects by conducting mediation analyses with basic and self-transcendent emotions. Although we found no direct effect of art engagement on participants' feelings of interpersonal closeness, we did find a significant indirect effect whereby art engagement increased self-transcendent emotions, which subsequently increased feelings of interpersonal closeness. We found a similar pattern of effects as before on inhumanisation (despite this time failing to reach statistical significance). Lastly, we found an effect on participants' behaviour in the form of signing a petition in favour of an immigrant cause. This effect was mediated by participants' experienced self-transcendent emotions.

### Meta-Analytic Synthesis of Findings

Our findings showed a similar pattern of effects across all three of our studies. However, not all results proved to be statistically significant. We therefore set out to synthesise them to provide a more reliable estimate of our main effect across studies. We computed standardised mean difference effect sizes (Cohen's  $d$ ) for each effect (five in total). Given that meta-analyses require effect sizes to be independent of one another (i.e., based on different samples; Cheung, 2019), for Study 4.3, we computed a composite effect size for all three dependent variables. Lastly, given that our measures varied across studies, we opted to conduct a random effects meta-analysis (Borenstein et al., 2010) using the R package *metafor* (Viechtbauer, 2010).

Results showed that the effect of art engagement on attitudes towards immigrants did not vary significantly between studies,  $Q(2) = 0.29$ ,  $p = .865$ . The overall positive effect (see Figure 4.6) indicates that individuals who engaged with art held more positive attitudes towards immigrants than those who did not,  $d = .27$ ,  $SE = 0.02$ ,  $Z = 15.82$ ,  $p < .001$ , 95% CI [0.23, 0.30].

**Figure 4.6***Meta-analytic Effect of Art Engagement on Attitudes towards Immigrants Across Three Studies*

### General Discussion

The current research investigated whether engaging with art could lead to more positive attitudes towards immigrants. In line with our hypothesis, the findings of three studies and an internal meta-analysis show that individuals who engaged with art showed more positive attitudes towards immigrants than those who did not. An exploratory mediation analysis provided support for our theory that our findings could be driven by the self-transcending effects of art engagement, as reflected in the experience of self-transcendent emotions.

### Theoretical and Practical Implications

Our findings contribute to both theory and practice. Empirical research on the functions of art in society has mainly focused on its aesthetic properties and the ways in which it can benefit the *beholder* (on its *intrapersonal* effects on emotions, physiology, and well-being). Yet previous theorising (and ample anecdotal evidence) has also made a case for *interpersonal* effects by arguing that great works of art can have an important impact on the way a beholder relates to others (Stamkou & Keltner, 2020), but empirical support has in general been lacking. Our research makes two main contributions. First, it provides support for impactful art's ability to make us transcend self-interest, irrespective of its content. Second, it expands on prior correlational work on art's interpersonal outcomes by providing causal evidence for its ability to positively influence attitudes towards others. In doing so, we contribute to the literature on self-transcendent emotions' effects on interpersonal outcomes (e.g., Stamkou, 2022).

Throughout history, people have argued that art can shape our world in tangible ways by exposing us to new insights and viewpoints (Carroll, 2012). Our findings provide additional evidence of its potential as a vehicle for social change by fostering connections between previously disconnected groups to improve societal functioning. To enhance art's ability to bring about meaningful, real-world impact, policymakers should strive to make it accessible to all, seeing to adequate funding, championing its inclusion in public spaces, drawing it into debates and discussions, and ensuring that it is adequately incorporated in educational and social outreach programmes—particularly for communities where it is currently beyond their reach.

Our findings can inform artists, curators, and art educators on how best to increase their impact as custodians of the arts. Artists throughout history have used their medium to question dominant ideologies and challenge aspects of the status quo to trigger some form of social change. Our research concurs with the view that emotionally evocative cultural ideas and products are more likely to spread (Heath et al., 2001). More specifically, it highlights the importance of art eliciting strong self-transcendent emotions because these tend to make for more impactful experiences that have the power to transform thoughts and behaviour.

### **Strengths, Limitations and Future Directions**

Our research found support for the view that art engagement can affect attitudes towards immigrants. It utilised a multi-method approach, by combining a correlational analysis of a large, archival data set (Study 4.1) with experimental studies (Studies 4.2 and 4.3). We employed different operationalisations of attitudes ranging from the more explicit (Study 4.1) to the more implicit (infrahumanisation in Studies 4.2 and 4.3), as well as behaviour (petition signing in Study 4.3). Our findings were not limited to interactions with specific artworks, but participants instead engaged with a highly heterogenous array of works. Our results consistently showed a similar pattern of effects, thereby suggesting robustness. We demonstrated the effect above and beyond other relevant variables that could provide alternative explanations for our findings, thus ruling them out (see Supplementary Materials for analyses with additional control variables). The studies were well-powered, with large sample sizes drawn from a Europe-wide population (Study 4.1) to sufficiently large online UK samples, determined based on prior power analyses (Studies 4.2 and 4.3). Combined, these factors attest to the overall generalisability of the findings.

Yet our research is not without limitations. The current studies looked at the effect of art engagement on immediate attitudes. But the question remains as to how long they last. Longitudinal methods could enable future studies to establish the point at which the effect ceases to exist and whether repeated or prolonged exposure to art would result in more pronounced effects. Such insights could, for instance, help inform how best to structure interventions involving the use of artworks. Additionally, future research can build on our findings by developing a more nuanced understanding of the way art engagement can affect attitudes towards immigrants. We have shown that it can lead to self-transcendence via emotions, however, other mechanisms can also be at play. For instance, art engagement could activate socio-cognitive mechanisms that foster other-understanding (e.g., Kidd & Castano, 2013), or group identity processes that evoke a sense of common humanity (e.g., McFarland et al., 2012). It would also be insightful to develop a more fine-grained understanding of which specific self-transcendent emotions appear the most potent, and whether the result would be stronger if multiple emotions were evoked simultaneously.

A final question that remains is whether *all* works of art have the capacity to initiate this form of attitudinal change. These findings allow us to conclude that *impactful* works of art (that evoke strong emotions) have the power to do so. But what constitutes ‘impactful’ art? The examples that were recalled by participants in Studies 4.2 and 4.3 were arguably highly heterogenous, consisting of artworks belonging to a wide range of disciplines, from different time periods, representing diverse themes, leaving a host of possible boundary conditions to consider testing. Potential candidates could be the extent to which the *content* of the artwork impacts its ability to shape attitudes—for instance, does art conveying social themes differ from its more abstract counterparts? Or how does the *context* in which people interact with the artwork play a role? Does it matter whether the viewer is alone or together with others—in a museum, a

theatre, or a cinema, as opposed to being at home on their phone? In short, our research opens new directions for future work to explore.

### **Conclusion**

Proponents and opponents of art have had many heated debates about its value for society. While some tout it as being nothing more than frivolous pleasure with few if any real-world benefits, others argue that it can enrich people's lives by providing a window into other perspectives and worldviews, and that it has the potential to catalyse meaningful change. We have theorised and shown support for impactful art's capacity to shape attitudes and behaviour towards unfamiliar others. In doing so, our work has demonstrated that art has the power to make us transcend self-interest, albeit perhaps momentarily, and that it can have a positive impact on the effective social functioning of our societies.

# 5

## **General Discussion**

Scholars have increasingly criticised traditional bottom-up approaches to the psychological study of art for focusing too narrowly on formal features of the artwork and their effects on perceptions of beauty and aesthetic pleasure (Bullot & Reber, 2013; Skov & Nadal, 2020; Stamkou & Keltner, 2020). In response, more recent theoretical models of aesthetic experience have incorporated top-down processes, considering how factors such as personality, art knowledge, expertise, and cultural background shape our interactions with art (Leder et al., 2004; Pelowski et al., 2017; Stamkou & Keltner, 2020). In this, they acknowledged the role of contextual factors in shaping the meaning that audiences attach to art, but they did not fully address the *interpersonal and social* dimensions that influence its creation and its reception. In this dissertation, I aimed to bridge this gap by developing empirical approaches to investigate how the social context shapes art engagement, contributing to a social psychological understanding of art. In doing so, it addressed the overarching research question: *‘How does the broader social context influence our responses to art?’*

In doing so, I adopted a socio-contextualised approach, viewing art not as an isolated object but as part of an interconnected system. Within this system, art is shaped by artists who have personal and social motives, received by an audience that is influenced by societal beliefs, and elicits an array of psychological responses that can have downstream consequences for attitudes, social behaviour, and even broader social dynamics. To address the overarching research question itself, I formulated three sub-questions, each examined in a dedicated empirical chapter. In the following sections, I summarise the main findings of each chapter, linking them back to the three sub-questions themselves, and illustrating their contributions to the socio-contextualised approach. I then discuss theoretical and practical contributions of the research, outline its limitations, and propose some possible avenues for future study.

### **Overview of the Main Findings**

Chapter 2 addressed the sub-question *‘Why do artists create art, and how do their motives influence audience responses?’* I aimed to understand the motives behind professional artists’ desire to create art and whether and how they influence audience appreciation of the artist’s work. Together with my coauthors, I developed a taxonomy of motives, categorising them based on the intrinsic/extrinsic motivational distinction and further subcategorising them based on their intended target (Study 2.1).

Prior research outside the domain of art suggested that intrinsic motivation was socially valued; compared to extrinsically motivated individuals, intrinsically motivated people tended to be perceived and treated much more positively by others (Jachimowicz et al., 2019; Wang et al., 2022; Wild et al., 1992, 1997). Building on this, we hypothesised that intrinsically motivated artists would also be more likely to be appreciated than extrinsically motivated ones. Across two experiments, we manipulated motive information to see how it would affect responses to the same works of art (Studies 2.2 and 2.3). A longitudinal study followed in which we measured the artist’s motives at baseline and then how much they felt appreciated two years later (Study 2.4). The findings largely supported our hypothesis, demonstrating that intrinsically motivated artists are generally more appreciated than extrinsically motivated ones, in terms of how competent and warm they are perceived, the extent to their work is considered aesthetically pleasing, and the extent to which people believe they will have a lasting impact. This effect can be explained by a positive effect of intrinsic motives (rather than a negative effect of extrinsic motives) on audience appreciation—an effect that persists over time.

Overall, these results suggest that artists' motives play an important role in the way that art is perceived and valued by audiences, aligning with prior work showing that people rarely separate the artist from their work when engaging with art (Kaube et al., 2023; Steinhart & McClaran, 2023). Works of art are not self-contained entities; they are deeply intertwined with the artist and their perceived intentions. Rather than passively observing art, audiences actively engage in meaning-making, drawing on social information about the artist – such as their motives for creating art – to interpret and evaluate their work.

Chapter 3 focused on the sub-question: *'What role does the artist's human identity play in shaping responses to art?'* Building on the previous chapter which demonstrated how motives can humanise art by fostering a connection with the artist, this chapter examined whether the presence of a human creator matters at all. By investigating responses to AI-generated music, we explored how the perceived lack of human agency affects engagement with art. More specifically, we explored the psychological mechanisms underlying individuals' devaluation of AI-attributed art, investigating how responses to the same piece of music varied depending on whether participants believed it was created by a human or AI. In doing so, the chapter also explored the role of prevailing societal beliefs about human creative uniqueness and how, collectively, these factors shape our cognitive, emotional, and physiological responses to art.

Prior work demonstrated a tendency for individuals to devalue AI-attributed art (Chamberlain et al., 2018; Shank et al., 2023), but the psychological mechanism underlying this tendency was left unclear. To address this, we examined two explanations – motivated reasoning and an embodied threat to human creative uniqueness – using physiological measurements of parasympathetic nervous system activity to distinguish between them. More specifically, we conducted two lab-in-field experiments in which participants listened to the same piece of classical orchestral music, while manipulating information about its origin (i.e., whether it was made by AI or humans). While they listened, we measured their parasympathetic nervous system activity and subsequently assessed their appreciation and emotional responses to the music (Studies 3.1 and 3.2) as well as perceived threat and anthropocentric creativity beliefs (Study 3.2). This approach allowed us to determine whether negative self-reports only reflected cognitive evaluations or also deeper embodied threat. The findings revealed that people exhibited not only less appreciation and weaker emotional responses, but also greater physiological stress in response to AI- (vs. human-) attributed music. Auxiliary analyses revealed that these effects were more pronounced among individuals with stronger *anthropocentric creativity beliefs* (i.e., those who firmly view creativity as a distinctly human trait), as they were especially prone to perceiving AI-generated music as a threat to human uniqueness.

Overall, these findings suggest that the devaluation of AI-generated music is not only driven by deliberate cognitive processes, but by a deeper, embodied sense of threat to human creative identity. The chapter directly addresses the sub-question: *'What role does the artist's human identity play in shaping responses to art?'* It argues that audiences expect art to be imbued with humanity (whether or not they are consciously aware of this expectation) and, when they believe it is created by AI, they instinctively assume it lacks essential human elements – such as intentionality, emotional depth, and lived experience – and that leads them to devalue it (Chamberlain et al., 2018). However, our physiological findings reveal that the process is not purely cognitive. It is also embodied, suggesting a more deeply seated sense of unease. More specifically, AI-generated art challenges the assumption that art is uniquely human, and, for individuals with strong anthropocentric creativity beliefs, this can be particularly unsettling. It

forces them to reckon with the possibility that an activity that they consider a defining aspect of humanity may not be so at all.

Chapter 4 addressed the sub-question: *‘How does art contribute to our relationships with others and society?’* While the previous empirical chapter showed that art can lead to unease, distress, and feelings of disconnection when it is created by AI due to its perceived lack of humanity, this chapter shifted the focus to the opposite: whether and how art can foster connection. More specifically, we studied whether and how impactful art can affect the way that we relate to unfamiliar others—in this case immigrants. By examining impactful art’s potential to elicit self-transcendent emotions, we sought evidence for its ability to foster tolerance and prosocial acts towards others.

We asked whether engaging with art could lead to more positive attitudes towards immigrants. Prior research had shown that self-transcendent emotions – such as awe, elevation, and feeling moved – make people less self-centred and more tolerant of others (Stellar et al., 2017). These emotions evolved to serve social bonding functions, prompting individuals to momentarily shift their focus from the self towards others, and motivating them to better understand others’ mental and emotional states (Anderson et al., 2020; McPhetres, 2019; Piff et al., 2015; Schoeller & Perlovsky, 2016; Stamkou, 2022; Stellar et al., 2017). Building on this, we hypothesised that impactful, profound art experiences would foster more positive attitudes towards immigrants by eliciting these self-transcendent emotions.

We first found initial correlational support for our hypothesis using a Europe-wide dataset (Study 4.1). In the two subsequent experiments, participants were randomly assigned to either relive an impactful art experience or an everyday experience unrelated to art (Studies 4.2 and 4.3). Findings revealed that those in the art condition were less likely to dehumanise immigrants, with auxiliary analyses providing preliminary evidence that this effect is driven by the heightened experience of self-transcendent emotions evoked through the impactful art experience. These findings directly address the sub-question: *‘How does art contribute to our relationships with others and society?’* by providing empirical support for the idea that art can act as a vehicle for fostering social connection, not only by offering new perspectives, but by triggering emotional states that promote greater openness and understanding of others, thereby potentially positively influencing intergroup attitudes, bridging social divides, and enhancing social cohesion.

### **Theoretical Contributions**

The overarching theoretical contribution of this dissertation is its demonstration of art’s deep embedding in interpersonal and social dynamics through a socio-contextualised approach. Across the studies detailed in the three empirical chapters, our findings show that art simultaneously influences and is influenced by the way that we relate to others, shaping social perceptions, group dynamics, and interpersonal attitudes. More specifically, its reception is tied to interpersonal inferences about its creator (Chapter 2), it can reinforce social boundaries (Chapter 3), and it can also dissolve social boundaries and shape interpersonal interactions (Chapter 4).

In Chapter 2, we explored the idea of art as a communicative act, showing that its reception is shaped by interpersonal inferences about the artist. In this, we contribute to the emergent literature on the way that an individual’s intrinsic or extrinsic motives are perceived by others. Much of the existing literature has focused on the impact of motives on the individual’s *own* affect, cognition, and behaviour—for instance, whether intrinsic motivation enhances creativity (Liu et al., 2016) or whether intrinsically motivated employees perform better at work

(Cerasoli et al., 2014). Much less attention was paid to the way motives affect the perceptions and behaviour of *others*. The limited research on these *interpersonal* effects has been conducted mainly in organisational (Derfler-Rozin & Pitesa, 2020) and educational settings (Wild et al., 1992), examining how an individual's expressed motivation influences person perception variables – such as how enthusiastic or moral they are perceived to be (Kwon et al., 2023; Wild et al., 1992) – as well as responses such as prosocial behaviour and supportive interactions (Jachimowicz et al., 2019; Kwon et al., 2023; Wang et al., 2022). However, rather than focusing on perceptions of the individual alone, we have extended this work by showing that motives influence not only the way that the artist is perceived, but also the extent to which their work is appreciated. By demonstrating that art is intertwined with our perceptions of its creator, this chapter suggests that art is not merely an object—it is a cultural artifact acting as a powerful vehicle for communication.

In Chapter 3, we examined how an artist's identity – whether human or non-human – shapes audience responses to their art. Our findings show that art can reinforce ingroup-outgroup boundaries based on the artist's perceived identity (i.e., human vs. AI). The study contributes to research on human-AI interactions by being the first to complement self-report measures with physiological ones, capturing responses that may operate beyond individuals' conscious control. Our findings reveal that people's responses to AI art are shaped by societal unease and group-based protective mechanisms, as they perceive AI as a threat to their sense of uniqueness and perceived ingroup superiority. Notably, the tendency to devalue AI art is not purely cognitive or deliberate in nature but reflects a more deeply rooted apprehension toward AI, as evidenced by physiological stress responses. This could suggest that AI art can heighten awareness of ingroup-outgroup distinctions, particularly among those who feel threatened by creative AI. More broadly, our findings suggest that art not only reflects social boundaries—it can actively reinforce them.

In Chapter 4, we explored whether, in contrast to the previous chapter, art can bridge social divides between groups rather than reinforcing them. While previous theorising has suggested that great works of art can profoundly impact the way a beholder relates to others (Stamkou & Keltner, 2020), empirical support for this claim has generally been lacking. Our research makes two main contributions. First, it provides support for impactful art's ability to make us transcend self-interest, irrespective of its content. Second, it extends prior correlational research on art's interpersonal effects by providing causal evidence that art can positively influence attitudes towards others. In doing so, we contribute to the literature on self-transcendent emotions and their effects on interpersonal outcomes (Stamkou, 2022), showing that art has the capacity to transcend social boundaries, foster openness and interpersonal connection, and improve attitudes and behaviour towards unfamiliar others.

### **Practical Implications**

Our research also has several practical implications. First, it could assist artists and institutions when it comes to fostering connection through their motives for creating art. People seemingly expect art to have a human touch and seek a connection with the artist when engaging with an artwork. Stating the artist's motives can be a powerful way to convey this and build a bridge with the audience. Artists and institutions alike should be mindful of the way that these motives are communicated. They would gain by reflecting on their own motivations and on how best to articulate them, ensuring that intrinsic motives – such as personal enjoyment, self-expression, and a desire to affect the audience's thoughts/emotions – are emphasised when

discussing their creative process. And at the same time, being mindful of how extrinsic motives – such as financial rewards, public recognition, and living up to others’ expectations – are communicated may be beneficial, as audiences may respond to them differently.

As professional development and coaching programmes become increasingly integral to artist training, it could be beneficial for these initiatives to educate artists about the importance that people attach to motives and how it can impact their careers—sometimes inadvertently. They should take account of the fact that audiences often seek a deeper connection with artworks—one that stems from the artist’s personal motivations, thoughts, and emotions. Our findings suggest that intrinsic motives enhance the distinctiveness and appreciation of human artists’ work. Artists should be aware of the value their motives convey and can use the understanding strategically to maintain their unique appeal in an era of advancing creative AI.

Second, our research has implications for policymakers regarding the need to balance innovation with public trust and acceptance, ensuring that human artistry remains valued and protected. If creative AI is to gain broader acceptance, creative industries and tech companies must address the psychological barriers that exist. When art is created by non-human agents, it can evoke unease due to fears surrounding the consequences of AI’s expanding creative capabilities. A comprehensive approach can help reduce these concerns, ensuring that AI innovations are implemented responsibly. Policymakers can help protect artists’ rights by implementing measures that safeguard creative authorship and provide greater transparency about the involvement of AI in the creative process. Clearly indicating whether and to what extent AI was used would help art consumers make informed decisions and assist professional artists in preserving their livelihoods. Additionally, reframing AI’s role in creativity – emphasising that AI tools are made to assist human creativity, not replace it – can help reduce feelings of threat, particularly among creative professionals.

Finally, our findings have implications for policy and education by showing that art can be harnessed as a vehicle for social change. Art can be an effective tool for reducing prejudice and fostering social inclusion by eliciting self-transcendent emotions that increase openness toward marginalised groups. Given its ability to shape attitudes and behaviour, arts-based interventions could be strategically integrated into education, diversity programmes and more. Some applications include educational programmes that incorporate arts-based approaches to foster empathy and connection, as well as museums curating exhibitions that intentionally promote intergroup understanding and social dialogue. Beyond this, these findings can inform artists, curators, and art educators on how to maximise their impact as custodians of the arts. Artists throughout history have used their medium to challenge dominant ideologies and provoke social change. Our research aligns with prior work showing that emotionally evocative cultural ideas and products are more likely to spread (Heath et al., 2001). More specifically, it highlights the important role of self-transcendent emotions in making artistic experiences more impactful—offering empirical support for the idea that such experiences have the power to transform thoughts, attitudes, and behaviour.

### **Strengths, Limitations, and Future Directions**

This research has several strengths. First, it has employed a rich, multi-method approach. While many studies in empirical aesthetics rely on self-reports which can be susceptible to bias (see Krumpal, 2013; Nederhof, 1985), this dissertation has incorporated a diverse range of methodologies to enhance both the validity and the reliability of its findings. These included qualitative interviews with artists (Chapter 2) and experimental studies manipulating artists’

motives using vignettes (Chapter 2) and AI versus human origin information (Chapter 3). They also included recall paradigms capturing impactful art experiences (Chapter 4), lab-in-field studies (Chapter 3), multi-wave survey research assessing the long-term impact of artists' motives on audience appreciation (Chapter 2), and physiological measures capturing implicit responses to AI-attributed art (Chapter 3). By integrating these diverse methods, this research provides converging evidence that enhances our understanding of the way that social context shapes art engagement.

Second, the findings from this dissertation allow for both cross-disciplinary generalisability and interdisciplinary learning. Most research in empirical aesthetics has focused primarily on visual arts, with findings from music and other art forms remaining largely disparate and disconnected. The field has often treated art engagement as though it was a fundamentally distinct psychological experience, limiting the influence from other areas of psychology that could offer valuable insights (see Skov & Nadal, 2020 for a critique). In this dissertation, we examined multiple art forms, including the visual arts (Chapter 2), music (Chapter 3), and self-selected impactful art spanning various disciplines (Chapter 4), with the intention of increasing the generalisability of findings across various artistic domains. By drawing on broader social psychological and psychophysiological literature, this research provides a more comprehensive understanding of the mechanisms that underlie art engagement, bridging the gap between empirical aesthetics and these other fields.

Third, the dissertation tries to connect experimental and real-world contexts, thereby enhancing external validity. The research is not purely theoretical, and it is not confined to lab-based studies. It actively engages directly with practicing artists in real-world settings. We conducted interviews to explore firsthand perspectives on motivation, and surveys tracking the effect of artists' motives over time, linking them to audience appreciation. And this is particularly important, because it enhances the ecological validity of the findings, ensuring that they are grounded in artistic practice and not solely in theory or controlled experimental settings. While many studies in empirical aesthetics focus exclusively on audience perception, this research incorporates the perspective of artists themselves, to offer a more holistic understanding of the art experience.

Lastly, and perhaps most importantly, this dissertation offers clear, real-world applications for artists, curators, cultural institutions, and policymakers, providing societally relevant insights that extend beyond academia. While many empirical studies in empirical aesthetics make valuable theoretical contributions in this respect, they lack at times direct, real-world applicability. This research aims to be not only theoretically significant, but also socially impactful, offering practical insights that could benefit the arts as a whole.

However, this research is not without its limitations. First, some of its findings are exploratory in nature and they need to be replicated. For example, in Chapter 3, we found a significant three-way interaction between time, (AI versus human origin) condition, and anthropocentric creativity beliefs (ACB) on respiratory sinus arrhythmia (RSA). We also explored whether the main effects on appreciation, emotional responses, and RSA were mediated by perceived threat. The findings were consistent with prior research, showing that individuals with stronger anthropocentric creativity beliefs are more likely to devalue AI-attributed art (Millet et al., 2023) and provided support for theory proposing the effect to be driven by feelings of threat. Similarly, in Chapter 4, while we found confirmatory support for the hypothesised effect of impactful art on attitudes towards immigrants, we found only preliminary evidence for the

proposed mechanism of self-transcendent emotions driving this effect. These findings align with theoretical explanations and prior research, but they remain exploratory in nature. Confirmatory replications would be valuable in building confidence in their robustness and to rule out the possibility of any chance findings.

Second, the generalisability of our findings to individuals in other cultures could also be questioned, given the fact that most of the studies were conducted using WEIRD (i.e., Western, Educated, Industrialised, Rich, and Democratic) samples (see Heine, 2020). In Chapter 2, experiments assessing the way in which motive information affects audience appreciation were conducted with US-based samples, whose responses may reflect individualistic values that favour uniqueness and independence expressed by intrinsically motivated artists. One could argue, however, that audiences in collectivistic cultures might respond more positively to artists endorsing extrinsic/other-focused motives such as conforming to others' expectations or upholding traditions, as these align with collectivistic values (Markus & Kitayama, 1991; Triandis, 1989). Though auxiliary analyses found no evidence that individualism/collectivism moderated these effects. Future research could nevertheless explore other cultural variables as moderators and investigate whether artists' motives for creating art vary across cultures.

In Chapter 3, lab-in-field studies were conducted in a Dutch museum and included participants from diverse cultural backgrounds, but they were not explicitly designed to compare cultural differences in responses to AI-generated art. Public attitudes towards AI vary across societies. In Western countries, AI is often met with apprehension due to concerns about job redundancy, whereas in China, it is generally perceived more favourably, with greater emphasis on its potential to enhance efficiency and innovation (Wu et al., 2020). Future research could investigate whether the embodied threat responses we observed to AI origin information differ across cultures because of different societal attitudes.

In Chapter 4, while self-transcendent emotions have been shown to be universal (Bai et al., 2017; Pizarro et al., 2021), their social consequences may be culturally dependent. Collectivistic societies prioritise group harmony but also maintain stricter ingroup/outgroup boundaries (Markus & Kitayama, 1991). As a result, while individuals in collectivistic cultures may experience self-transcendent emotions in response to impactful art, they may not translate into the same degree of openness towards unfamiliar others as observed in our UK-based (individualistic) samples. Future research could investigate whether the social bonding effects of impactful art in collectivistic cultures are more likely to be limited towards immediate ingroup members, whereas in individualistic cultures, they may extend more readily to outgroup members.

A third limitation relates to our use of computer-mediated art experiences and memory recall paradigms over real-world, in-situ art experiences given potential concerns about ecological validity. Research in empirical aesthetics is increasingly being conducted in naturalistic settings such as museums and public art spaces (e.g., Kühnapfel et al., 2024; Miller et al., 2024; Pelowski et al., 2014). The approach taken in this dissertation complements this work by identifying psychological mechanisms in a highly controlled environment, where confounding variables are minimised, and internal validity is strengthened. Nonetheless, replicating these findings in real-world art settings would be valuable, as art may have a more potent impact in its non-computer-mediated form, and additional contextual factors (such as the presence of others) may further shape responses. Future research could manipulate artists' motives in museum or live performance settings using reading materials or recorded interviews to examine their influence

on audience appreciation. Additionally, more ecologically valid, unobtrusive behavioural measures of attitudes towards immigrants could be implemented, such as donation boxes for immigrant causes, allowing to test the effects of impactful art exposure in a real-world setting. Such insights would provide a better understanding of the societal implications of these effects and simultaneously help identify potential boundary conditions.

Lastly, the question remains regarding the longevity of the studied effects. The only study that applied a longitudinal approach was the survey in Chapter 2, in which professional artists' motives were measured at baseline and perceived appreciation of their work was assessed two years later. While these findings did not capture actual audience ratings, they provide preliminary evidence that intrinsically motivated artists are more likely to feel appreciated over the long term, suggesting potential lasting benefits of intrinsic over extrinsic motivation. It also remains unclear whether the embodied threat response to AI-attributed music observed in Chapter 3 persists or diminishes with repeated exposure. As AI's creative influence becomes more prevalent and normalised, initial perceptions of novelty and associated threat may fade, leading to reduced negative evaluations and possibly even increased appreciation over time. Longitudinal studies could be implemented to examine how familiarity and repeated exposure influence feelings of threat and evaluations of AI-generated art. Similarly, the duration of impactful art's positive effects on attitudes towards immigrants is yet to be determined. Diary studies could be employed to track attitudinal shifts post-exposure to assess whether effects dissipate or could be sustained, potentially through repeated engagement with impactful artwork (see Trupp et al., 2022 for a similar approach applied to the context of online art and wellbeing/loneliness). Such insights would be insightful both theoretically and for designing arts-based interventions aimed at fostering intergroup understanding.

### **Concluding Thoughts**

The present dissertation sought to answer the overarching research question posed at the outset: *“How does the broader social context influence our responses to art?”* It opened with Van Gogh's intense desire for honest self-expression and how it influenced the way audiences resonated with his work. Similarly, our findings show that art appreciation is not separate from the artist but is shaped by interpersonal inferences about their motives. The auctioning of *‘Portrait of Edmond Belamy’* at Christie's sparked controversy due to its AI origins, raising questions about whether art's ability to serve as a conduit for emotions, ideas, and social impact depends on the human identity of its creator. Our findings suggest this to be the case, further demonstrating that this tendency to devalue AI-attributed art is not purely cognitive but driven by deeply embodied unease, reflecting the perceived threat that AI poses to beliefs about human creative uniqueness. Picasso's *Guernica*, celebrated for its ability to broaden the viewer's capacity to empathise about the suffering of unfamiliar others, exemplifies how impactful art can shape social attitudes. Our research provides empirical support for this idea, showing that self-transcendent emotions evoked by impactful art can momentarily shift individuals' focus away from themselves, fostering greater openness towards others. Taken together, this research demonstrates that art is not merely an aesthetic object but rather an interpersonal phenomenon—one that shapes, and is shaped by the social connections, identities, motives, and emotions of both the artist and audience. Ultimately, its transformative power lies not in what it depicts, but in how it connects us all to one another.

## **Supplementary Material Chapter 2**

In this section, we present the Supplementary Material for Chapter 2. First, we provide additional insights into the interviews conducted in Study 2.1, including written elaboration and accompanying tables. Second, we describe a pilot study, which we conducted to validate the experimental vignettes used in Studies 2.2 and 2.3. Third, we present tables summarising the results of robustness checks for the analyses in Studies 2.2 and 2.3, where we statistically controlled for participants' art interest and familiarity with the paintings. Next, we provide tables detailing the artworks used as artistic stimuli in Studies 2.2 and 2.3. Finally, we include the scale developed to measure artists' motives for creating art, as applied in Study 2.4.

### **Supplementary Insights from Interviews with Professional Artists (Study 2.1)**

During our interviews with professional artists, we discovered that some motives (such as 'enjoyment' and 'need to explore') were universally endorsed by most interviewees. Interestingly, other motives, however, were more niche and domain specific. Financial motives and reputational concerns were mainly associated with mainstream commercial artists (e.g., pop musicians and DJs). This could suggest these motives to be more socially acceptable or realistic reasons for art creation within their respective domains.

The motive 'desire to shape an audience's attitudes or thoughts' was more commonly expressed by artists who created new work such as directors, composers and choreographers, compared to artists who performed work created by others. This makes sense given that these artists have greater say over content and message than those interpreting pre-existing pieces, such as classical orchestra musicians and dancers.

Collaborative artists (e.g., in bands or chorus dancers) often expressed being driven by their desire to connect with other artists and performers, thereby reflecting art's potential as a medium for social bonding and establishing a sense of social identity. Lastly, the desire to uphold traditions was most prevalent among artists practicing classical or traditional artforms like ballet or classical music, emphasising their commitment to preserving their craft's legacy.

### ***Characteristics of the Artists***

In Supplementary Table 2.1, we present an overview of the artistic disciplines of the artists who we interviewed in Study 2.1.

### **Supplementary Table 2.1**

#### *Artistic Disciplines of Interviewees in Study 2.1*

Discipline	Number of Artists Interviewed
Visual arts (painting/sculpture/illustration)	11
Music (classical, pop, jazz, improvisation)	10
Dance (classical ballet, contemporary dance)	4
Photography/videography	3
Fashion	3
Multidisciplinary art creation (dance, music, opera)	3

*Note.*  $N = 34$ .

***Motives for Creating Art with Interview Excerpts***

Supplementary Table 2.2 provides an overview of the 24 professional artists' motives for creating art identified through our Study 2.1 interviews, along with illustrative excerpts from their responses.

## Supplementary Table 2.2

*Interview Excerpts Illustrating Motives in our Taxonomy in Study 2.1*

Motive	Example
	<b>Intrinsic/Self-Focused</b>
<b>Need for autonomy</b>	“[One reason I make art is because of] the personal freedom that it allows. Even though it can be tough, there is a sense of autonomy.”
<b>Enjoyment</b>	“I started dancing because I literally had a lot of fun dancing—it made me happy and enthusiastic. I felt good.”
<b>Absorption</b>	“I regularly experience a flow. When I’m working, it’s pretty much always. I have my music on and then I’m no longer present. That’s the best thing there is.”
<b>Need to explore</b>	“I am an innately curious person, so I like to go out and explore and see what’s there.”
<b>Need to be creative</b>	“I started learning to sew from my grandmother and wanting to learn the technique and being drawn to the idea of being able to make anything you see and have a physical product. [...] A primary urge to make something.”
<b>Need for self-expression</b>	“[My instrument] is the means that I use to express my emotions, my feelings. Different instruments have different characteristics, different timbres, so you can express different emotions with different instruments.”
<b>Self-therapy</b>	“I can process the emotions I’m going through in my life. For instance, if I’m going through a period of worry, it gives inspiration for the work, I can see so many different colours and sides to it.”
<b>Need for meaning</b>	“I valued art and writing. And so, it made me feel like that was a valuable thing to do in my life.”
<b>Need for self-esteem</b>	“There was definitely a satisfaction in being able to do something well, being in control of your instrument and being able to execute something to that degree ... mastery—knowing that you’re good.”
<b>Need for structure</b>	“I love working in a team (an ensemble) the most because of the structure that it provides. Even if you don’t have performances every day, you do practice every day. And I like that I can do something that is expected of me.”
	<b>Intrinsic/Other-Focused</b>
<b>Desire to connect with an audience</b>	“I don’t want to provoke thoughts. I want [the audience] to be able to connect to my feelings.”
<b>Desire to connect with fellow performers/artists</b>	“For me, creating art was an excuse for creating contacts/a social environment. When you start creating art, you first get inspired by the people who are around you. You want to learn and to share with them.”
<b>Desire to connect with a greater entity</b>	“And you know, knowing all the time it is not me, it is like some bigger sort of energy probably, going through all of us... That kind of drives me [...] It is like the art is tapping into a sort of energy field, but it is filtered through the personal information that created me as a person.”
<b>Affecting the audience’s feelings</b>	“I try to create images that move people. [...] I want to convey a certain essence that I feel, I want others to feel it too. I have no influence on <i>what</i> people feel with my work, but I do want them to feel <i>something</i> . The work must say something.”

<b>Affecting the audience's attitudes/thoughts</b>	“I definitely feel interested in certain subjects such as sustainability and climate change. The driving force is to create awareness about those. [...] Wanting to add a tone that is different to journalism. I want to tell something socially relevant in a way that evokes something different than simply discussing the subject in other ways.”
<b>Affecting the audience's wellbeing</b>	“... music is therapeutic. It's a way to make people feel better. So, it's kind of my mission to spread this.”
<b>Art as a signalling mechanism</b>	<b>Extrinsic/Self-Focused</b>
<b>Reputational concerns</b>	“And with [being an artist] comes attention from the opposite sex and an element of being revered which can be enjoyable!” “It sounds silly, but I do want to become one of the big names. I want to produce my own music, that people like it. I want people to like me. That I play at festivals and that people go wild.”
<b>Lack of viable alternatives</b>	“I started singing because I kind of fell into it. When I was 15, I had the chance to be in a boyband and it was great! Afterwards, I thought it was too late. Like I couldn't leave. I can't do much else outside that field.”
<b>Financial motives</b>	“Well, sometimes in my career I can say that money drove me to make the art, sure. [...] One of the things I did, many years ago [...] made quite a bit of money. And they always had a buyer. So, it was like I was fueled by that success.”
<b>Contractual/professional obligations</b>	<b>Extrinsic/Other-Focused</b>
<b>Having to conform to others' expectations</b>	“Yes, because the productions are in some way imposed on you. You don't get to personally choose what work you do within a season. [...] There are definitely days when it's a job, when you do what you need to do to be professional.” “I grew up [in an environment] where reading and drawing were especially valued. I wanted to be a writer initially. [...] So that was a way to [...] do something that would be approved [of]. I didn't feel it that way, but looking back that probably was, in terms of socialization, valued.”
<b>Being coerced by others</b>	“My parents pushed me to play the flute, maybe because it was an orchestral instrument. My parents weren't musicians, but they found music an important part of our upbringing. So, my brothers also played instruments, even though they never did anything with it later on. We all had to have music education.”
<b>Duty to uphold traditions</b>	“I was lucky enough to study with great teachers who taught me about the history of my craft. I feel like I have a duty to keep this tradition going. The “classics” are called that because they have a whole history behind them. Only our technique has evolved. But we cannot forget those who were before us- you need to know about the past in order to be good at what we do.”

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*Note.*  $N = 34$ .

### Pilot Study

The goal of the pilot study was to develop and pre-test vignettes with which we could experimentally manipulate information on an artist's motives in experimental studies. We created four vignettes in the style of interview excerpts, each conveying three motives, capturing what we considered to be the essence of each motive cluster. We incorporated phrases from our interviews with professional artists when possible and used crutch words and ellipses to enhance the vignettes' ecological validity. The pilot study was approved by the ethics review board of the authors' university (ERB code: 2022-SP-14868).

#### Method

##### *Participants*

Sixty-one first-year students from a Dutch university took part in the study in exchange for research credit ( $M_{\text{age}} = 20.82$  years,  $SD_{\text{age}} = 2.78$  years, 52 female, 9 male).

##### *Procedure*

Participants were informed that they would be presented with four excerpts from interviews that our team of researchers had conducted with professional artists about their motives for creating art. They were informed that they would have to rate each of these based on a motivational dimension that would be explained to them via an instructional video. Participants were randomly assigned to either rate the four vignettes in terms of intrinsic/extrinsic motives ( $n = 30$ ) or self-focused/other-focused motives ( $n = 31$ ; between-subjects) because we felt that combining the two dimensions could lead to confusion. After watching the assigned instructional video, the four vignettes were presented to each participant in random order (within-subjects), and they were asked to rate them on the respective dimension.

##### *Measures*

The participants assigned to rate the excerpts based on the intrinsic/extrinsic dimension watched a video with the following spoken instructions:

*“A person’s motives can be rated along a dimension from intrinsic to extrinsic. This distinction is based on the source of the person’s behaviour.*

*What do we mean by intrinsic motives? When we talk about an intrinsic motive, this means that the source of the behaviour is within the person. For example, artists with intrinsic motives create art because they can grow or learn from the process or because they feel a strong urge to affect their audience in some way or another.*

*What do we mean by extrinsic motives? When we talk about an extrinsic motive, this means that the source of behaviour is outside the person. For example, artists with extrinsic motives create art because of the status or prestige that comes with being an artist or because they feel they must live up to others’ expectations.”*

Conversely, the participants assigned to rate the excerpts based on the self-focused/other-focused dimension watched a video with the following instructions:

*“A person’s motives can be rated along a dimension from self-focused to other-focused. This distinction is based on the target of the art creation. In other words, who is at the receiving end of it?*

*What do we mean by self-focused motives? When we talk about a self-focused motive, this means that the artist is at the receiving end of it. In other words, the artist has him- or herself in mind when creating art. For example, self-focused artists create art because they can grow and learn from the process or because it gives them a sense of status or prestige.*

*What do we mean by other-focused motives? When we talk about an other-focused motive, this means that others are at the receiving end of it. In other words, the artist has others in mind when creating art. For example,*

*other-focused artists create art because they feel the urge to affect their audience in some way or another or because they feel they must live up to others' expectations."*

Depending on the condition they were assigned to, participants were presented with the item "Please rate to what extent this excerpt reflects more intrinsic [self-focused] or extrinsic [other-focused] motives for creating art", to which they could respond on a seven-point Likert scale (1 = *intrinsic [self-focused]*, 7 = *extrinsic [other-focused]*), with higher scores reflecting more extrinsic [other-focused] motives.

## Results

Descriptive statistics can be found in Supplementary Table 2.3.

### Supplementary Table 2.3

#### *Descriptive Statistics of Focal Variables in the Pilot Study*

	Intrinsic/Self		Intrinsic/Other		Extrinsic/Self		Extrinsic/Other	
	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI
Extrinsic	1.47 (1.14)	[1.17, 1.97 ]	2.37 (1.69)	[1.83, 3.00]	5.67 (1.45)	[5.13, 6.17]	6.23 (1.38)	[5.70, 6.63]
Other-Focused	1.29 (0.53)	[1.13, 1.48]	6.03 (1.40)	[5.48, 6.45]	2.16 (1.46)	[1.68, 2.74]	5.94 (1.15)	[5.48, 6.32]

*Note.*  $N = 61$ ; bootstrapped 95% confidence intervals are based on 1000 samples.

#### ***Intrinsic/Extrinsic Motive Ratings***

As expected, the extrinsic vignettes ( $M_{\text{pooled}} = 5.95$ ,  $SD_{\text{pooled}} = 1.41$ ) were rated as more extrinsic than the intrinsic vignettes ( $M_{\text{pooled}} = 1.92$ ,  $SD_{\text{pooled}} = 1.44$ ),  $B = 2.02$ ,  $SE = 0.13$ ,  $t(87) = 15.71$ ,  $p < .001$ . The two intrinsic vignettes differed slightly from each other,  $B = 0.45$ ,  $SE = 0.18$ ,  $t(87) = 2.48$ ,  $p = .015$  in terms of how they were perceived, however, the two extrinsic ones did not,  $B = 0.28$ ,  $SE = 0.18$ ,  $t(87) = 1.56$ ,  $p = .122$ .

#### ***Self-Focused/Other-Focused Motive Ratings***

As expected, the other-focused vignettes ( $M_{\text{pooled}} = 5.98$ ,  $SD_{\text{pooled}} = 1.28$ ) were rated more other-focused than the self-focused vignettes ( $M_{\text{pooled}} = 1.73$ ,  $SD_{\text{pooled}} = 1.10$ ),  $B = 2.13$ ,  $SE = 0.11$ ,  $t(90) = 20.07$ ,  $p < .001$ . Although the self-focused vignettes differed slightly from one another,  $B = 0.44$ ,  $SE = 0.15$ ,  $t(90) = 2.90$ ,  $p = .005$ , the other-focused vignettes did not,  $B = -0.05$ ,  $SE = 0.15$ ,  $t(90) = -0.32$ ,  $p = .748$ .

## Discussion

The results of our pilot study revealed that our four vignettes differed as intended on the intrinsic/extrinsic and self-focused/other-focused dimensions respectively. We therefore concluded that they showed good internal validity and could be utilised as experimental materials in Studies 2.2 and 2.3.

### **Robustness Checks (Studies 2.2 and 2.3)**

We tested the effect of motives on the various outcomes in Study 2.2 (Supplementary Tables 2.4-2.8) and Study 2.3 (Supplementary Tables 2.9-2.12), controlling for art interest and familiarity with the paintings as a robustness check. The results remained consistent, indicating that our findings are robust and not attributable to these extraneous variables.

**Supplementary Table 2.4**

*The Effect of Motive Information Condition on Perceived Warmth, Controlling for Art Interest and Familiarity in Study 2.2*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	4.85	0.15	32.02	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.20	0.06	3.44	<.001
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	0.04	0.08	0.47	.640
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	0.29	0.08	3.50	<.001
Art Interest	0.08	0.03	2.63	.009
Familiarity	0.02	0.06	0.38	.703

*Note.* *N* = 390. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 384.

**Supplementary Table 2.5**

*The Effect of Motive Information Condition on Perceived Competence, Controlling for Art Interest and Familiarity in Study 2.2*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	4.79	0.15	32.37	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.15	0.06	2.68	.008
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	-0.07	0.08	-0.88	.382
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	0.18	0.08	2.21	.028
Art Interest	0.08	0.03	2.63	.009
Familiarity	0.06	0.05	1.12	.265

*Note.* *N* = 390. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 384.

**Supplementary Table 2.6**

*The Effect of Motive Information Condition on Average Star Rating, Controlling for Art Interest and Familiarity in Study 2.2*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	2.32	0.11	21.44	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.09	0.04	2.32	.021
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	0.10	0.06	1.65	.010
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	0.02	0.06	0.37	.714
Art Interest	0.13	0.02	6.00	<.001
Familiarity	0.08	0.04	2.06	.040

*Note.* *N* = 390. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 384.

**Supplementary Table 2.7**

*The Effect of Motive Information Condition on Number of Paintings Viewed, Controlling for Art Interest and Familiarity in Study 2.2*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	2.57	0.11	24.11	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.05	0.04	1.28	.201
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	-0.18	0.06	-3.18	.001
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	-0.04	0.06	-0.85	.396
Art Interest	0.05	0.02	2.35	.019
Familiarity	0.09	0.04	2.39	.017

*Note.* *N* = 390. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 384.

**Supplementary Table 2.8**

*The Effect of Motive Information Condition on Perceived Artistic Impact, Controlling for Art Interest and Familiarity in Study 2.2*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	3.52	0.16	21.92	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.33	0.06	5.36	<.001
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	0.07	0.09	0.84	.403
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	-0.00	0.09	-0.03	.974
Art Interest	0.09	0.03	2.82	.005
Familiarity	0.17	0.06	2.93	.004

*Note.* *N* = 390. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 384.

**Supplementary Table 2.9**

*The Effect of Motive Information Condition on Perceived Warmth, Controlling for Art Interest and Familiarity in Study 2.3*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	4.48	0.21	21.40	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.14	0.06	2.46	.014
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	0.13	0.08	1.71	.088
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	0.20	0.08	2.51	.012
Art Interest	0.16	0.04	4.34	<.001
Familiarity	-0.06	0.05	-1.06	.289

*Note.* *N* = 384. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 378.

**Supplementary Table 2.10**

*The Effect of Motive Information Condition on Perceived Competence, Controlling for Art Interest and Familiarity in Study 2.3*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	2.48	0.14	17.82	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.10	0.04	2.78	.006
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	-0.02	0.05	-0.45	.650
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	0.00	0.05	0.09	.932
Art Interest	0.08	0.02	3.35	<.001
Familiarity	0.10	0.03	2.82	.005

*Note.* *N* = 384. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 378.

**Supplementary Table 2.11**

*The Effect of Motive Information Condition on Average Star Rating, Controlling for Art Interest and Familiarity in Study 2.3*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	4.23	0.20	21.34	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.10	0.05	1.80	.073
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	-0.09	0.07	-1.14	.254
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	-0.02	0.08	-0.22	.825
Art Interest	0.16	0.04	4.64	<.001
Familiarity	-0.03	0.05	-0.58	.561

*Note.* *N* = 384. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 378.

**Supplementary Table 2.12**

*The Effect of Motive Information Condition on Perceived Artistic Impact, Controlling for Art Interest and Familiarity in Study 2.3*

Variables	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	3.18	0.21	14.87	<.001
Intrinsic vs. Extrinsic <sup>a</sup>	0.33	0.06	5.77	<.001
Extrinsic/Self vs. Extrinsic/Other <sup>b</sup>	-0.08	0.08	-0.95	.345
Intrinsic/Self vs. Intrinsic/Other <sup>c</sup>	-0.21	0.08	-2.50	.013
Art Interest	0.13	0.04	3.34	<.001
Familiarity	0.10	0.05	1.85	.065

*Note.* *N* = 384. <sup>a</sup> Contrast comparing intrinsic to extrinsic conditions (focal comparison); <sup>b</sup> contrast comparing extrinsic/self-focused and extrinsic/other-focused conditions; <sup>c</sup> contrast comparing intrinsic/self-focused and intrinsic/other-focused conditions. Degrees of freedom equal 378.

**Artistic Stimuli (Studies 2.2 and 2.3)**

Supplementary Table 2.13 displays the paintings by American painter George Luks used as stimuli in Studies 2.2 and 2.3.

**Supplementary Table 2.13***Artistic Stimuli Used in Studies 2.2 and 2.3*











Artwork Number	Title & Year (If available)	Also Featured in Study 2.3	Artwork
1	Entr'Acte (1930)		
2	Wild Geese		
3	Shanty Shacks, Pottsville, Pennsylvania (ca.1925)		
4	L Street Brownies (1922)	*	
5	Landscape		
6	The White Cat (1930)		
7	Waterfall (ca. 1920-1925)		
8	Nude Laying Down		
9	The Spielers (1905)	*	

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10	St. Botolph Street (1922)		
11	Upstream, Nova Scotia (1920)	*	
12	Madison Square (1915)		
13	The Breaker Boys		
14	A Clown (1929)		
15	Copley Square, Boston		
16	Noontime, St. Botolph Street, Boston (1923)	*	
17	Noonmark, Adirondacks (ca. 1925)	*	
18	Havana, Cuba		
19	Girl in Green (1929)		








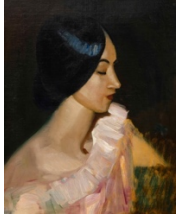


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20	Morning Light (1933)	*	
21	The Wrestlers (1905)	*	
22	Three Top Sergeants (1925)		
23	Portrait of a Young Man		
24	Façade (ca. 1925)		
25	Evening Splendor		
26	Seated Nude	*	
27	Parker House (ca. 1925)		
28	Autumn (ca. 1925)		
29	Spring Morning, Houston & Division Streets, New York (1922)		
30	Lady With White Hat (1922)	*	

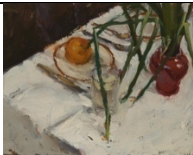

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31	Road to the Water (ca. 1925)	*	
32	Poverty Hump, Maine (ca. 1922)	*	
33	Portrait of a Child		
34	Winter in Central Park		
35	House Along The Water		
36	Landscape		
37	Woman with Mandolin		
38	Mercedes in a Satin Dress (1933)		
39	Hester Street		
40	Suraleuska		

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41	Still Life	
42	In the Studio	

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*Note.* An asterisk in the third column indicates that the painting was also used in Study 2.3.

### Scale Measuring Artists' Motives for Creating Art (Study 2.4)

Below we present the scale that we developed based on our taxonomy of 24 professional artists' motives that we used in Study 2.4.

#### Introduction

Artists make art for many different reasons at different times in their career. Some of these motives come and go, whereas others define their artistic practice and represent who they are as an artist.

We are interested in the motives that **really represent you as an artist**. Remember that your anonymity is guaranteed, so please feel free to **respond truthfully**.

Next you will find several lists of statements that describe different motives for engaging in art. Please indicate to what extent each of these motives **represent you as an artist**.

To what extent do each of these motives represent you as an artist?<sup>16</sup>

*I create art because ... (1 = does not represent me at all, 7 = absolutely represents me).*

#### *Intrinsic/ Self-focused Motives*

##### 1. Need for autonomy ( $\alpha = .79$ )

1. ... it gives me the freedom to do what I want.
2. ... it provides me with a sense of autonomy.
3. ... it gives me a sense of independence.
4. ... it lets me do things the way I like.

##### 2. Enjoyment ( $\alpha = .87$ )

5. ... I enjoy it.
6. ... I get satisfaction from it.
7. ... it's fun.
8. ... I derive pleasure from it.

##### 3. Absorption ( $\alpha = .82$ )

9. ... I find it absorbing.
10. ... it allows me to lose myself in what I'm doing.
11. ... it allows me to get carried away.
12. ... it lets me forget about the here and now.

##### 4. Need to explore ( $\alpha = .84$ )

13. ... it is a way to learn and grow.
14. ... it enables me to understand myself better.
15. ... it teaches me about myself.
16. ... it satisfies my curiosity.

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<sup>16</sup> Items are presented to participants in random order.

5. Need to be creative ( $\alpha = .83$ )

- 17. ... it expresses my ideas in a concrete form.
- 18. ... I like to see a concept come to life in a finished product.
- 19. ... I feel the urge to create something beautiful.
- 20. ... it satisfies my innate need to produce something beautiful.

6. Need for self-expression ( $\alpha = .82$ )

- 21. ... it allows me to tell my story.
- 22. ... it allows me to express what I feel.
- 23. ... it satisfies my need for self-expression.
- 24. ... it's a way for me to articulate my thoughts and feelings.

7. Self-therapy ( $\alpha = .93$ )

- 25. ... it helps me work through my problems.
- 26. ... it acts as a kind of self-therapy.
- 27. ... it enables me to manage my emotions.
- 28. ... it helps me deal with my feelings.

8. Need for meaning ( $\alpha = .86$ )

- 29. ... it gives me a strong sense of purpose.
- 30. ... it provides me with a sense of fulfilment.
- 31. ... it gives me a sense of meaning.
- 32. ... it gives me an objective in life.

9. Need for self-esteem ( $\alpha = .77$ )

- 33. ... it gives me a sense of self-esteem.
- 34. ... I feel I am good at it.
- 35. ... it makes me feel positive about myself.
- 36. ... it gives me a sense of pride.

10. Need for structure ( $\alpha = .75$ )

- 37. ... it provides my life structure.
- 38... it gives my life a routine.
- 39... it satisfies my need for structure.
- 40... it gives my life direction.

***Intrinsic/ Other-focused Motives***11. Desire to connect with the audience ( $\alpha = .92$ )

- 41... I wish to connect with my audience.
- 42... I want to communicate with my audience.
- 43... I wish to feel in contact with my audience.
- 44... I would like to engage with my audience.

12. Desire to connect with fellow artists ( $\alpha = .87$ )

- 45... I want to connect with fellow artists.
- 46 ... I wish to have social contact with fellow artists.
- 47 ... it makes me feel that I belong within the art community.
- 48... it's a way to collaborate with fellow artists.

13. Desire to connect with a greater entity ( $\alpha = .92$ )

- 49... it connects me with some power greater than myself.
- 50... I feel in touch with something supernatural.
- 51... it puts me in touch with my spiritual side.
- 52... it allows me to explore my spirituality.

14. Affecting the audience's feelings ( $\alpha = .92$ )

- 53... I want to stir people's feelings.
- 54... I wish to trigger emotions in people.
- 55... I would like people to feel moved emotionally.
- 56... I want to touch people emotionally.

15. Affecting the audience's attitudes or thoughts ( $\alpha = .91$ )

- 57... I want to raise awareness for a particular social cause.
- 58... I wish to alert people to some aspect(s) of society.
- 59... I want to influence opinions on societal and/or political issues.
- 60... I would like to spark some form of social/political change.

16. Affecting the audience's wellbeing ( $\alpha = .89$ )

- 61... I want to provide comfort to my audience.
- 62... I wish to make my audience feel good.
- 63... I would like to improve my audience's well-being.
- 64... I want to provide my audience with relief from their daily lives.

*Extrinsic/ Self-focused Motives*

17. Art as a signalling mechanism ( $\alpha = .87$ )

- 65. ... it is a way to attract sexual partners.
- 66. ... it enables me to stand out when amongst potential romantic partners.
- 67. ... it allows me to impress potential love interests.
- 68. ... it makes me appear attractive to potential mates.

18. Reputational concerns ( $\alpha = .88$ )

- 69. ... I want people to admire my work.
- 70. ... I wish to be recognised.
- 71. ... I wish to be remembered.
- 72. ... I want to leave behind a reminder of my accomplishments.

19. Lack of viable alternatives ( $\alpha = .89$ )

- 73. ... there are no other career paths I can follow.
- 74. ... I don't know what other job I could do in life.
- 75. ... I don't have viable alternative career options.
- 76. ... I don't have the skills needed to pursue a different career.

20. Financial motives ( $\alpha = .90$ )

- 77. ... it enables me to make a living.
- 78. ... it pays the bills.
- 79. ... it helps me make ends meet.
- 80. ... it provides me with financial security.

***Extrinsic/ Other-focused Motives***21. Contractual/professional obligations ( $\alpha = .77$ )

- 81. ... I have been contracted to do it.
- 82. ... it is necessary professionally.
- 83. ... I am legally required to do it.
- 84. ... my contract requires me to do it.

22. Having to conform to others' expectations ( $\alpha = .82$ )

- 85. ... it is expected of me by others (e.g., family/friends/colleagues).
- 86. ... I must live up to others' (e.g., family/friends/colleagues') expectations.
- 87. ... people around me expect me to do it.
- 88. ... I have to meet my community's expectations.

23. Being coerced by others ( $\alpha = .84$ )

- 89. ... I am forced to.
- 90. ... someone else makes me do so.
- 100. ... I have no choice in the matter.
- 101. ... I feel obliged to do it.

24. Desire to uphold traditions ( $\alpha = .84$ )

- 102. ... I want to pass on an artistic technique.
- 103. ... I need to preserve our way of doing it.
- 104. ... I want to pass on my national traditions.
- 105. ... I can ensure that my national culture lives on.

# **Supplementary Material Chapter 3**

In this section, we present the Supplementary Material for Chapter 3. First, we present a pilot study in which we compared multiple music tracks to select the most appropriate experimental stimuli for our pilot and main studies. Second, we provide tables displaying the parameter estimates of analyses conducted in Studies 3.1 and 3.2, respectively.

### **Pilot Study**

This pilot study was the first to be conducted chronologically, with the goal of selecting an appropriate music track for use in the subsequent experiments. We pre-selected six tracks to test, which were mostly similar in duration (around three minutes) and were all co-produced by AI and humans (i.e., they were composed by AI music composition software (AIVA, 2020), yet performed by a human orchestra). The reason for this decision was that it would enable us to claim the music to be either AI- or human-made in our main studies without needing to resort to deception. We aimed to select a music track that evoked strong prototypical aesthetic emotions and elicited minimal boredom. Additionally, we wanted the track to be relatively unfamiliar to participants and for its origin (i.e., AI- vs. human) to be ambiguous, meaning that participants would not be able to easily guess whether it was created by AI or a human composer. A list of all music tracks compared can be found in Supplementary Table 3.1.

### **Participants**

Fifty UK-based participants ( $M_{\text{age}} = 37.90$ ,  $SD_{\text{age}} = 9.72$ ; 30 female, 19 male, 1 was missing data) took part in the online study via Prolific in exchange for GBP 2.80.

### **Procedure**

The study received approval from the local institutional review board (ERB code: FMG-5055). Participants were required to wear headphones. We informed them that they were taking part in a study about music creation and that recent advancements in AI technology made it possible for AI to create music that compared to that of humans. We further told them that they would listen to six pieces of music (within-subjects) either created by a human, by AI, or by a combination of the two. After each track, participants rated the extent to which it evoked certain emotions, how hard it was to determine the piece's origin, and how familiar it was to them.

### **Measures**

All items were measured on a 7-point Likert scale ranging from 1 = *not at all*, to 7 = *very much*, unless stated otherwise.

#### ***Experienced Emotions***

We used five items adapted from Schindler et al.'s (2017) Aesthemos scale, all starting with the stem: 'While listening to this piece, I felt...', and ending with the prototypical aesthetic emotions 'fascinated', 'awe', 'moved', 'beauty', and 'wonder' (with which we created a composite variable,  $\alpha = .96$ ), as well as the emotion 'bored'.

#### ***Ambiguity of Music Origin***

We used the item 'I found it hard to tell whether this piece was made by humans, AI, or both' (1 = *strongly disagree*, 7 = *strongly agree*).

#### ***Familiarity***

We assessed familiarity with the item 'How familiar was this piece to you?' (1 = *not at all familiar*, 7 = *highly familiar*).

### **Results**

All descriptive statistics are presented in Supplementary Table 3.2, with results visualised in Supplementary Figure 3.1.

### Supplementary Table 3.1

#### *Music Tracks Compared in the Pilot Study*

No	Track Name	Album	Performed By	Duration
1	Symphonic Fantasy in A Minor, Op. 31: 'Among the Stars'	Among the Stars (For Symphonic Orchestra and Four-Hands Piano)	Sofia Symphonic Orchestra	2:29
2	Symphonic Movement in B Minor, Op. 32: 'Battle Royale'	Among the Stars (For Symphonic Orchestra and Four-Hands Piano)	Sofia Symphonic Orchestra	2:29
3	Digital Spring	AIVA's YouTube Channel <sup>a</sup>	Brussels Philharmonic Orchestra	2:45
4	Symphonic Fantasy in A Minor, Op. 24: 'I am AI'	Among the Stars (For Symphonic Orchestra and Four-Hands Piano)	Sofia Symphonic Orchestra	2:49
5	Symphonic Fantasy for Orchestra in G-Sharp Minor, Op. 7: 'The Awakening'	Genesis	Aiva Sinfonietta Orchestra, Olivier Hecho	3:23
6	Odyssey	AIVA's YouTube Channel <sup>a</sup>	Aiva Sinfonietta Orchestra, Brad Frey	4:09

*Note.* <sup>a</sup> <https://www.youtube.com/@aiva1828>

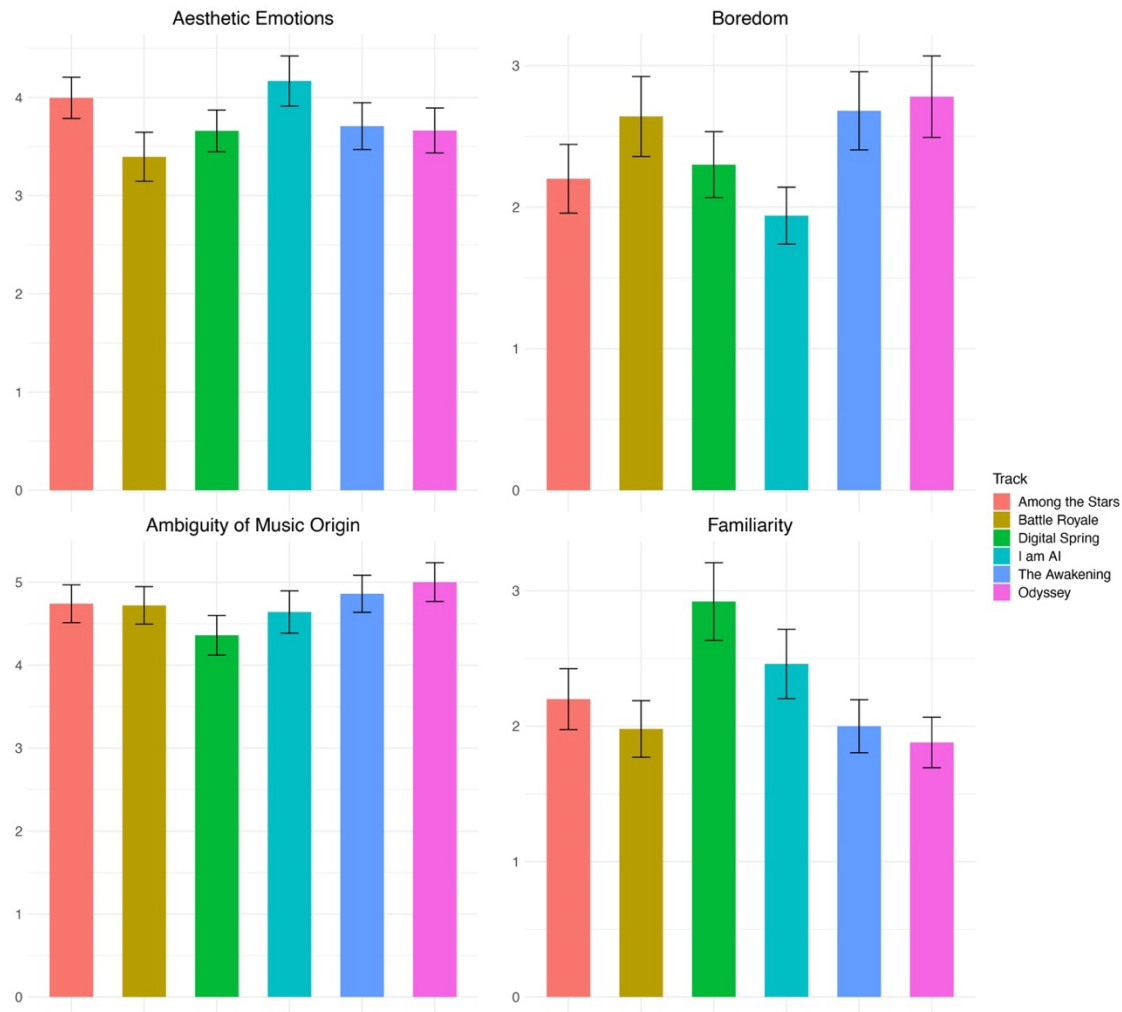
**Supplementary Table 3.2***Descriptive Statistics Per Music Track in the Pilot Study*

Variable	Among the Stars	Battle Royale	Digital Spring	I am AI	The Awakeni ng	Odyssey
Beauty	4.50 (1.71)	3.08 (1.71)	3.70 (1.75)	4.06 (2.09)	3.98 (1.90)	3.94 (1.90)
Feeling Moved	3.16 (1.68)	3.24 (2.05)	2.86 (1.53)	3.70 (1.98)	3.56 (1.89)	3.64 (2.01)
Awe	3.82 (1.70)	3.48 (2.09)	3.70 (1.62)	4.34 (1.94)	3.56 (1.87)	3.46 (1.86)
Wonder	4.40 (1.78)	3.56 (1.93)	4.16 (1.68)	4.36 (1.94)	3.96 (1.95)	3.90 (1.72)
Fascination	4.10 (1.69)	3.62 (2.02)	3.88 (1.92)	4.38 (2.06)	3.48 (1.85)	3.38 (1.76)
Aesthetic Emotions (Composite Variable)	4.00 (1.49)	3.40 (1.76)	3.66 (1.50)	4.17 (1.80)	3.71 (1.69)	3.66 (1.62)
Boredom	2.20 (1.71)	2.64 (2.00)	2.30 (1.64)	1.94 (1.42)	2.68 (1.95)	2.78 (2.03)
Ambiguity of Music Origin	4.74 (1.61)	4.72 (1.59)	4.36 (1.69)	4.64 (1.80)	4.86 (1.58)	5.00 (1.65)
Familiarity of Music	2.20 (1.59)	1.98 (1.48)	2.92 (2.03)	2.46 (1.81)	2.00 (1.39)	1.88 (1.32)

*Note.*  $N = 50$ . Standard errors are in parentheses. All variables are measured on a seven-point scale.

**Supplementary Figure 3.1**

*Differences in Elicited Emotions, Ambiguity of Music Origin, and Familiarity Between Tracks in the Pilot Study*



Note.  $N = 50$ ; error bars denote standard errors.

***Experienced Emotions***

As can be seen in the figure, the track 'I am AI' elicited the strongest prototypical aesthetic emotions. Pairwise comparisons showed that 'I am AI' scored significantly higher than 'Odyssey', 'Battle Royale', and 'The Awakening' (all  $p$ 's < .05), and marginally higher than 'Digital Spring' ( $p = .064$ ) yet did not differ from 'Among the Stars' ( $p = .494$ ). The track 'Among the Stars' only scored higher than 'Battle Royale' ( $p = .027$ ). None of the other tracks differed from one another.

In addition, 'I am AI' evoked the least boredom in participants. Pairwise comparisons showed that 'I am AI' scored significantly lower than 'Battle Royale', 'The Awakening', and 'Odyssey', yet did not differ from 'Among the Stars' and 'Digital Spring'. The only other significant difference was between 'Odyssey' and 'Among the Stars' (all  $p$ 's < .05).

***Ambiguity of Music Origin***

The tracks were all close to the mid-point of the scale in terms of how uncertain participants were as to whether their origin was human or AI. The only significant difference was between ‘Digital Spring’ and ‘Odyssey’ ( $p < .05$ ).

***Familiarity***

The track ‘Digital Spring’ appeared to be the most familiar to participants as it scored higher than all other tracks ( $p < .05$ ) except ‘I am AI’ ( $p = .128$ ). The track ‘I am AI’ scored higher than ‘Battle Royale’, ‘The Awakening’, and ‘Odyssey’ ( $p < .05$ ). Given that all tracks scored relatively low ( $M_{\text{pooled}} = 2.24$  on a seven-point scale), we considered them to be quite unfamiliar to participants.

**Discussion**

We selected the track ‘I am AI’ for use in our experiments as it proved to be the most appropriate choice based on our criteria. It evoked the strongest prototypical aesthetic emotions in participants while eliciting the least boredom. Participants found it hard to determine the origin of the track (AI vs. human), and it was relatively unfamiliar to them.

**Supplementary Table 3.3**

*Parameter Estimates for the Interactive Effects on Time and Condition on Respiratory Sinus Arrhythmia in Study 3.1*

Variables	$\gamma$	<i>SE</i>	<i>DF</i>	<i>t</i>	<i>p</i>
Intercept	0.21	0.43	248	0.50	.616
Time	-0.10	0.03	248	-3.06	.003
Baseline	0.97	0.06	47	15.51	<.001
Condition	-0.35	0.21	47	-1.72	.092
Time*Condition	0.11	0.06	47	15.51	<.001

*Note.* Six timepoints (Level 1) nested within  $N = 50$  participants (Level 2). Condition is coded as 0 = AI, 1 = Human.

**Supplementary Table 3.4**

*Parameter Estimates for the Interactive Effects of Condition and Anthropocentric Creativity Beliefs on Appreciation and Emotional Responses in Study 3.2*

Variables	Appreciation				Emotional Responses			
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Intercept	4.56	0.08	54.09	<.001	3.94	0.09	44.76	<.001
Condition	0.76	0.12	6.41	<.001	0.67	0.12	5.40	<.001
ACB <sup>a</sup>	-0.08	0.08	-1.00	.320	-0.13	0.08	-1.53	.127
Condition * ACB	0.24	0.12	2.04	.042	0.14	0.12	1.10	.273
R <sup>2</sup>	.11				.08			

*Note.* *N* = 372. Condition is coded as 0 = *AI*, 1 = *Human*; <sup>a</sup> ACB stands for ‘anthropocentric creativity beliefs’.

**Supplementary Table 3.5**

*Parameter Estimates for the Interactive Effects on Time, Condition, and Anthropocentric Creativity Beliefs on Respiratory Sinus Arrhythmia in Study 3.2*

Variables	$\gamma$	<i>SE</i>	<i>DF</i>	<i>t</i>	<i>p</i>
Intercept	0.46	0.17	1771	2.65	.008
Condition	0.11	0.08	350	1.41	.160
Time	-0.01	0.01	1771	-1.01	.311
ACB <sup>a</sup>	0.04	0.05	350	0.78	.434
Baseline RSA	0.89	0.03	350	35.12	<.001
Condition* Time	-0.01	0.02	1771	-0.89	.372
Condition*ACB <sup>a</sup>	-0.11	0.08	350	-1.44	.149
Time*ACB <sup>a</sup>	-0.02	0.01	1771	-1.99	.047
Condition*Time*ACB <sup>a</sup>	0.04	0.02	1771	2.34	.020

*Note.* Six timepoints (Level 1) nested within *N* = 355 participants (Level 2). Condition is coded as 0 = *AI*, 1 = *Human*; <sup>a</sup> ACB stands for ‘anthropocentric creativity beliefs’.

# **Supplementary Material Chapter 4**

In this section, we present the Supplementary Material for Chapter 4. First, we provide transcripts of the experimental recall paradigm used in Studies 4.2 and 4.3. Next, we report robustness checks for Study 4.2, where we controlled for various socio-demographic variables. We then provide details on the petition measure used in Study 4.3, followed by further robustness checks for Study 4.3, controlling for positive mood and openness to experience, in addition to sociodemographic variables. Lastly, we present descriptive statistics of the various emotions participants reported experiencing in Study 4.3.

### **Transcripts of Experimental Recall Paradigm Used in Studies 4.2 and 4.3**

Below we present transcripts of the audio instructions used in the recall paradigm used in Studies 4.2 and 4.3. In both studies, the art condition heard the following instructions:

*We would like you to think back to a situation in which a specific work of art made a strong impact on you. This could be a painting, sculpture, piece of music, film, dance, architecture, theatre, poetry, literature, photography, or any other artform that may come to mind. So, take a moment to think back to an instance in which any such work of art made a strong impact on you. [...] Feel free to click to pause this recording and click again when you are ready to continue. [...] You should now have an experience in mind. [...] We would now like you to try to relive this experience as vividly as possible. For instance, think about who you were with, if anyone... think about where you were... think about the thoughts that went through your mind... think about how you felt. [...] Try to really imagine you are back in that situation and take some time to try to re-experience those very thoughts and feelings and bring them to the forefront of your mind. [...] Once again, feel free to click to pause the recording, and click again to continue. [...] In a few moments, you will be asked to open your eyes. When you do, try to hold on to these thoughts and feelings.[...] Now please open your eyes. You may now proceed to the next section.*

The control condition in Study 4.2 heard the following instructions:

*We would like you to think back to the very last meal that you ate. Depending on the time of day, this could have been breakfast, brunch, lunch or dinner, it could have been a leisurely sit down meal, a quick bite while on the go, anything at all really. So, take a moment to think back to the very last meal that you ate. [...] Feel free to click to pause this recording and click again when you are ready to continue. [...] You should now have an experience in mind. [...] We would now like you to try to relive this experience as vividly as possible. For instance, think about who you were with, if anyone... think about where you were... think about the thoughts that went through your mind... think about how you felt. [...] Try to really imagine you are back in that situation and take some time to try to re-experience those very thoughts and feelings and bring them to the forefront of your mind. [...] Once again, feel free to click to pause the recording, and click again to continue. [...] In a few moments, you will be asked to open your eyes. When you do, try to hold on to these thoughts and feelings.[...] Now please open your eyes. You may now proceed to the next section.*

The control condition in Study 4.3 heard the following instructions:

*We would like you to think back to last time you bought an item of clothing. This could be at a clothing shop, a department store, a second-hand shop, a fashion boutique, or even an online retailer, anywhere at all really. So, take a moment to think back to when you last bought an item of clothing. Feel free to click to pause this recording and click again when you are ready to continue. [...] You should now have an experience in mind. [...] We would now like you to try to relive this experience as vividly as possible. For instance, think about who you were with, if anyone... think about where you were... think about the thoughts that went through your mind... think about how you felt. [...] Try to really imagine you are back in that situation and take some time to try to re-experience those very thoughts and feelings and bring them to the forefront of your mind. [...] Once again, feel*

*free to click to pause the recording, and click again to continue. [...] In a few moments, you will be asked to open your eyes. When you do, try to hold on to these thoughts and feelings.[...] Now please open your eyes. You may now proceed to the next section.*

### **Robustness Checks in Study 4.2**

To rule out potential confounds for our main findings of Study 4.2, we repeated our analyses while controlling for sociodemographic variables to establish whether our effect holds above known predictors of tolerance.

#### **Method**

We assessed *political orientation* using the item “In political matters, people talk of ‘the left’ and ‘the right’. How would you place your views on this scale, generally speaking?”, with a slider that ranged from 1 – 100 (with higher scores reflecting greater political conservatism).

Participants’ *current socio-economic status (SES)* was measured using three items ( $\alpha = .82$  in Study 4.2 and  $\alpha = .81$  in Study 4.3) from a scale by Griskevicius and colleagues (2011), an example item from which was “I have enough money to buy things I want”. Participants responded using a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*), with higher scores reflecting higher SES. We measured *education* with the ordinal item “What is the highest level of formal education that you have attained?” (1 = none, 2 = primary, 3 = secondary, and 4 = tertiary). Finally, *religiosity* was assessed with the item “How important is religion in your life?” to which participants could respond using a 7-point Likert scale (1 = *not at all*, 7 = *very much*).

#### **Results**

Descriptives and intercorrelations between focal and control variables are presented in Supplementary Table 4.1.

**Supplementary Table 4.1***Descriptives and Intercorrelations Between Focal and Control Variables in Study 4.2*

	Condition		1	2	3	4	5	6
	Art <i>M (SD)</i>	Control <i>M (SD)</i>						
1. Condition	-	-	-					
2. Age	41.6 (14.4)	41.9 (13.8)	-.01	-				
3. Political Orient. <sup>a</sup>	39.5 (20.9)	38.7 (20.3)	.02	.23***	-			
4. SES <sup>b</sup>	4.48 (1.48)	4.32 (1.36)	.06	.05	.07	-		
5. Education	3.64 (0.50)	3.68 (0.50)	-.03	-.02	-.12*	.09	-	
6. Religiosity	2.34 (1.73)	2.12 (1.64)	.06	.17***	.19***	.00	.06	-
7. Infrahumanisation	61.1 (18.9)	56.2 (17.5)	.13**	-.11*	-.20***	-.06	.14**	.00

*Note.*  $N = 393$ 

As can be seen in Supplementary Table 4.2, participants in the art condition remained less likely to infrahumanise immigrants compared to those in the control condition when including control variables in the model,  $B = 5.35$ ,  $SE = 1.81$ ,  $t(385) = 2.96$ ,  $p = .003$ , 95% CI [1.77, 8.83].

**Supplementary Table 4.2***Parameter Estimates of the Effect of Recalling an Impactful Art Experience on Infrahumanisation in Study 4.2 While Controlling for Sociodemographic Variables*

Variables	Infrahumanisation	
	Model 1	Model 2
Political Orientation	-0.17 (0.05)***	-0.17 (0.04)***
SES <sup>a</sup>	-0.73 (0.65)	-0.84 (0.64)
Education <sup>b</sup>	4.67 (12.44)	3.52 (12.32)
Religiosity	0.28 (0.55)	0.18 (0.54)
Condition <sup>c</sup>		5.35 (1.81)**
Intercept	65.02 (6.62)***	63.09 (6.59)***

R<sup>2</sup>

0.06

0.08

*Note.*  $N = 393$ . Unstandardised coefficients are reported. Standard errors are in parentheses. <sup>a</sup> SES stands for socio-economic status; <sup>b</sup> ordinal variable coded as 0 = no formal education, 1 = primary education, 2 = secondary education, 3 = tertiary education completed; <sup>c</sup> ( $n = 199$  in the control condition, coded as 0 and  $n = 194$  in the art condition, coded as 1); \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

### Petition Used in Study 4.3

#### Background Information

To provide some context, the study was run in August 2021 during the Covid-19 pandemic. At the time, hospitals and care homes were understaffed yet under tremendous strain to provide adequate care to increasing numbers of people in need due to the pandemic. The health and care sectors were largely reliant on migrant health and care workers to help deal with this responsibility. However, the government's post-Brexit anti-immigration policies were forcing many migrant workers to leave the country in this time of need.

#### Petition Text Used

The new visa rules of the UK government have forced many migrant health and care workers to leave the UK for their countries of origin. The statistics indicate that 14% of all NHS staff (ranging from care workers to hospital cleaners and porters) are of non-British nationality.

Some people are **in favour** of the government's immigration policies, arguing that they will result in more jobs and greater access to social housing and social security for UK citizens.

Others, however, **oppose** the policies, arguing that they place an unnecessary strain on these sectors and are unfair to immigrants who contribute much to our society.

In response to these policies, immigrants' rights activists have started a petition to offer support for immigrants and to urge the UK government to adopt a more open stance towards them.

The petition sponsor has agreed to allow us to use Prolific IDs as a proxy for names, as Prolific IDs are uniquely assigned to individual users on the Prolific website.

You can see your Prolific ID in the box below:

[Participant's Prolific ID]

Would you like your Prolific ID assigned to this petition?

- Yes, assign my Prolific ID to this petition
- No, do not assign my Prolific ID to this petition

### Robustness Checks in Study 4.3

Again, to rule out third variables that could provide alternative explanations for our main findings of Study 4.3, we repeated our analyses while controlling for sociodemographic variables. This time, we also measured participants' mood to establish whether the effects could be confounded by positive mood.

#### Method

We assessed participants' positive mood after the recall paradigm and before they filled in the dependent variable measures. We did so by using one item from De Dreu and colleagues (2008): "Please indicate how positive you feel right now." Responses could range from 1 = *not positive at all* to 7 = *very positive*. We used the same measures for the control variables as in Study 4.2. In addition, we controlled for the personality variable 'openness to experience' using two items ( $r = .41, p < .001$ ) from the Abbreviated Big Five Inventory by Rammstedt and John

(2007) to which participants could respond on a seven-point Likert scale (1 = *disagree strongly*, 7 = *agree strongly*). An example item was “I see myself as someone who has an active imagination”).

### **Results**

Intercorrelations between focal and control variables in Study 4.3 are presented in Supplementary Table 4.3.

### Supplementary Table 4.3

#### *Descriptives and Intercorrelations Between Focal and Control Variables in Study 4.3*

	Condition		1	2	3	4	5	6	7	8	9	10	11	12
	Art <i>M (SD)</i>	Control <i>M (SD)</i>												
1. Condition	-	-	-											
2. Age	32.8 (13.1)	31.8 (12.6)	.04	-										
3. Political Orient. <sup>a</sup>	31.7 (23.3)	34.0 (22.8)	-.05	.23***	-									
4. SES	4.13 (1.42)	4.24 (1.36)	-.04	.00	.01	-								
5. Education	3.70 (0.46)	3.71 (0.46)	-.01	.23***	-.05	.04	-							
6. Religiosity	1.99 (1.53)	1.93 (1.48)	.02	.16**	.18***	-.05	-.13*	-						
7. Openness to Experience	4.98 (1.33)	4.98 (1.32)	.00	-.05	-.27	-.16**	.04	.04	-					
8. Positive Mood	5.11 (1.19)	4.76 (1.17)	.15**	.14**	.03	.19***	.00	.03	.04	-				
9. Basic Emo. (Mediator) <sup>b</sup>	1.83 (1.17)	1.18 (0.64)	.33***	-.15**	-.07	-.01	-.05	-.05	-.02	-.23***	-			
10. ST Emo. (Mediator) <sup>c</sup>	5.63 (1.18)	2.41 (1.20)	.80***	-.02	-.10	-.04	-.07	.03	.11*	.24***	.11*	-		
11. Interpersonal Closeness	2.82 (1.24)	2.69 (1.29)	.05	-.01	-.32***	-.10*	.03	.00	.21***	.03	.00	.12*	-	
12. Infrahumanisation	67.6 (20.2)	64.1 (17.9)	.09	-.09	-.18***	.02	.12*	.00	.07	.08	-.01	.14**	.20***	-
13. Petition Signing	0.75 (0.44)	0.61 (0.49)	.14**	-.27***	-.48***	.06	-.05	-.10*	.17***	-.03	.12*	.16**	.31***	.18***

*Note.*  $N = 399$  ( $n = 203$  in the control condition and  $n = 196$  in the art condition); \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; <sup>a</sup> Political Orient. stands for ‘political orientation’, <sup>b</sup> Basic Emo. stands for ‘basic emotions’, <sup>c</sup> ST Emo. stands for ‘self-transcendent emotions’.

First, we set out to establish whether our pattern effects would hold when controlling for participants' positive mood. This was indeed the case for interpersonal closeness,  $B = 0.12$ ,  $SE = 0.13$ ,  $t(396) = 0.97$ ,  $p = .332$ , 95% CI [-0.13, 0.38], infrahumanisation,  $B = 3.07$ ,  $SE = 1.93$ ,  $t(396) = 1.42$ ,  $p = .155$ , 95% CI [-0.72, 6.86], and the petition,  $B = 0.66$ ,  $SE = 0.22$ ,  $z(396) = 2.96$ ,  $p = .003$ , Odds Ratio = 1.93, 95% CI [1.25; 2.98].

As can be seen in Supplementary Tables 4.4 and 4.5, the inclusion of socio-demographic control variables in our models did not change the effects in a meaningful manner. Again, compared to the control condition, the art condition did not differ in their feelings of interpersonal closeness,  $B = 0.08$ ,  $SE = 0.12$ ,  $t(393) = 0.65$ ,  $p = .519$ , 95% CI [-0.16, 0.31], their tendency to infrahumanise immigrants,  $B = 3.16$ ,  $SE = 1.88$ ,  $t(393) = 1.68$ ,  $p = .093$ , 95% CI [-0.53, 6.86], yet were still more likely to sign the petition in favour of the immigrant cause,  $B = 0.69$ ,  $SE = 0.25$ ,  $z(393) = 2.71$ ,  $p = .007$ , Odds Ratio = 1.99, 95% CI [1.21; 3.28].

### Supplementary Table 4.4

*Parameter Estimates of the Effect of Recalling an Impactful Art Experience on Interpersonal Closeness and Infrahumanisation in Study 4.3 While Controlling for Sociodemographic Variables and Openness to Experience*

Variables	Interpersonal Closeness		Infrahumanisation	
	Model 1	Model 2	Model 3	Model 4
Political Orient. <sup>a</sup>	-0.02*** (0.00)	-0.02*** (0.00)	-0.15*** (0.04)	-0.15 (0.04)***
SES <sup>b</sup>	-0.07 (0.04)	-0.07 (0.04)	0.25 (0.69)	0.29 (0.69)
Education <sup>c</sup>	0.05 (0.13)	0.05 (0.13)	4.77* (2.08)	4.80* (2.08)
Religiosity	0.04 (0.04)	0.04 (0.04)	0.58 (0.65)	0.55 (0.64)
Openness to Experience	0.11* (0.04)	0.11 (0.05)*	0.24 (0.75)	0.26 (0.75)
Condition <sup>d</sup>		0.08 (0.12)		3.18 (1.88)
Intercept	2.80*** (0.60)	2.66*** (0.63)	49.76*** (9.48)	44.52*** (9.96)
R <sup>2</sup>	0.13	0.13	0.05	0.05

*Note.*  $N = 399$ . Unstandardised coefficients are reported. Standard errors are in parentheses. <sup>a</sup> Political Orient. stands for political orientation; <sup>b</sup> SES stands for socio-economic status; <sup>c</sup> ordinal variable coded as 0 = no formal education, 1 = primary education, 2 = secondary education, 3 = tertiary education completed; <sup>d</sup> ( $n = 203$  in the control condition, coded as 0 and  $n = 196$  in the art condition, coded as 1); \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Supplementary Table 4.5**

*Parameter Estimates of the Effect of Recalling an Impactful Art Experience on Petition Signing in Study 4.3 While Controlling for Sociodemographic Variables and Openness to Experience*

Variables	Model 5		Model 6	
	<i>B</i> ( <i>SE</i> )	Odds Ratio	<i>B</i> ( <i>SE</i> )	Odds Ratio
Political Orient.	-0.05*** (0.01)	0.95	-0.05*** (0.01)	0.95
SES <sup>b</sup>	0.16 (0.09)	1.17	0.17 (0.09)	1.18
Education <sup>c</sup>	-0.53 (0.28)	0.59	-0.53 (0.29)	0.59
Religiosity	-0.04 (0.08)	0.96	-0.05 (0.08)	0.95
Openness to Experience	0.15 (0.10)	1.17	0.17 (0.10)	1.18
Condition <sup>d</sup>			0.70** (0.25)	2.02
Intercept	3.37** (1.25)	29.10	2.27 (1.33)	9.67
R <sup>2</sup> (Nagelkerke)		0.34		0.36

*Note.*  $N = 399$ ; <sup>a</sup> Political Orient. stands for political orientation; <sup>b</sup> SES stands for socio-economic status; <sup>c</sup> ordinal variable coded as 0 = no formal education, 1 = primary education, 2 = secondary education, 3 = tertiary education completed; <sup>d</sup> ( $n = 203$  in the control condition, coded as 0 and  $n = 196$  in the art condition, coded as 1); \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

**Supplementary Table 4.6***Descriptives of Experienced Emotions in Study 4.3*

Emotions	Condition	
	Control <i>M (SD)</i>	Art <i>M (SD)</i>
Basic		
Happiness	4.95 (1.51)	4.96 (2.08)
Sadness	1.57 (1.12)	3.65 (2.27)
Anger	1.48 (1.11)	1.89 (1.64)
Fear	1.53 (1.15)	1.95 (1.57)
Disgust	1.34 (0.88)	1.66 (1.59)
Self-Transcendent		
Beauty	3.32 (1.79)	5.52 (1.81)
Awe	1.90 (1.32)	5.48 (1.73)
Fascination	2.75 (1.67)	5.42 (1.64)
Feeling Moved	1.69 (1.15)	6.12 (1.14)

*Note.*  $N = 399$ ;  $n = 203$  in the control condition and  $n = 196$  in the art condition.

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# **English Summary**

The psychological study of art has traditionally focused on aesthetic experiences through a bottom-up lens, examining how sensory systems process perceptual features in artworks. While more recent models have incorporated top-down influences – spurring empirical work on how contextual factors (e.g., the presence of titles, physical viewing context) affect responses to art – these approaches do not fully address the interpersonal and social dimensions that shape its creation and reception. That matters because art is not just an individual experience—it is a medium through which we engage with others, challenge social boundaries, and negotiate group identities. Created by an artist with a particular identity and a specific audience in mind, art is interpreted through the lens of cultural narratives and societal beliefs, shaping how we perceive – and ultimately relate to – others. Yet we know surprisingly little about the way that these social dimensions affect our interactions with art. Across three empirical chapters, this dissertation examines how: (1) artists’ motives for creating art influence audience appreciation (Chapter 2); (2) the artist’s identity (i.e., human or artificial intelligence; AI) and societal beliefs about human creative uniqueness affect responses to AI-attributed music (Chapter 3); and (3) impactful art fosters social openness and reduces intergroup bias by evoking self-transcendent emotions such as awe, wonder, and feeling moved (Chapter 4).

In Chapter 2, we explored the motives behind professional artists’ desire to create art and examined whether and how they influence audience appreciation. First, we developed a taxonomy of motives, categorising them based on the intrinsic/extrinsic motivational distinction and further subcategorising them based on their intended target (Study 2.1). Prior research outside the arts suggested that, compared to extrinsically motivated individuals, intrinsically motivated people are generally perceived and treated much more positively (Jachimowicz et al., 2019; Wang et al., 2022; Wild et al., 1992, 1997). Building on this, we hypothesised that intrinsically motivated artists would also be more appreciated than extrinsically motivated ones. Across two experiments, we manipulated motive information to examine its effect on responses to the same artworks (Studies 2.2 and 2.3). A longitudinal study followed, measuring artists’ motives at baseline and their perceived appreciation two years later (Study 2.4). Findings largely supported our hypothesis: intrinsically motivated artists were generally more appreciated than extrinsically motivated ones, in terms of how competent and warm they were perceived to be, the extent to which their work was considered aesthetically pleasing, and the extent to which people believed they would have a lasting impact. This effect was driven by a positive effect of intrinsic motives rather than a negative effect of extrinsic motives, and it persisted over time, as measured two years later.

In Chapter 3, we examined the psychological mechanisms underlying individuals’ tendency to devalue art created by artificial intelligence (AI) technology. Specifically, we examined whether responses to the same piece of music varied depending on whether participants believed it was created by a human or AI. In doing so, the chapter also investigated how societal beliefs about human creative uniqueness (i.e., anthropocentric creativity beliefs) interact with these responses. Prior work showed a tendency for individuals to devalue AI-attributed art (Chamberlain et al., 2018; Shank et al., 2023), but the psychological mechanisms underlying this tendency remain unclear. To address this, we tested two explanations – motivated reasoning and embodied threat – using physiological measurements of parasympathetic nervous system activity. We conducted two lab-in-field experiments in which participants listened to the same piece of classical orchestral music, while manipulating information about its origin (i.e., whether it was made by AI or humans). While they were listening, we measured their parasympathetic nervous system activity and subsequently assessed their appreciation and emotional responses to the music (Studies 3.1 and 3.2) as well as perceived threat and anthropocentric creativity beliefs (Study 3.2). This approach allowed us to determine whether negative self-reports merely reflected cognitive evaluations or also a deeper, embodied

threat. The findings revealed that people exhibited not only lower appreciation and weaker emotional responses but also greater physiological stress when they believed the music was AI- (vs. human-) generated. Auxiliary analyses showed that these effects were more pronounced among individuals with stronger anthropocentric creativity beliefs, who were particularly prone to perceiving AI-generated music as a threat to human creative uniqueness. Overall, these findings suggest AI-generated music is devalued not only due to deliberate cognitive processes, but also because of a deeper, embodied sense of threat to human creative identity.

In Chapter 4, we investigated whether impactful art can affect the way that we relate to unfamiliar others—in this case, immigrants. By examining impactful art’s potential to elicit self-transcendent emotions, we sought evidence for its ability to foster tolerance and prosocial attitudes. Prior research had shown that self-transcendent emotions – such as awe, elevation, and feeling moved – reduce self-focus and promote greater openness towards others (Stellar et al., 2017). These emotions evolved to serve social bonding functions, prompting individuals to shift their focus to others, and motivating them to engage with others’ mental and emotional states (Anderson et al., 2020; McPhetres, 2019; Piff et al., 2015; Schoeller & Perlovsky, 2016; Stamkou, 2022; Stellar et al., 2017). Building on this, we hypothesised that impactful art experiences would foster more positive attitudes towards immigrants through their ability to elicit these self-transcendent emotions. We first found correlational support for our hypothesis using an existing Europe-wide dataset (Study 4.1). In two subsequent experiments, participants were randomly assigned to either relive an impactful art experience or an everyday experience unrelated to art (Studies 4.2 and 4.3). Findings revealed that those in the art condition were less likely to dehumanise immigrants. Auxiliary analyses provided preliminary evidence that this effect was driven by the heightened experience of self-transcendent emotions evoked through impactful art.

By adopting a socio-contextualised approach, this dissertation demonstrates that art is not merely an aesthetic object, but an interpersonal phenomenon—one that both shapes, and is shaped by the social connections, identities, motives, and emotions of artists and audiences alike. In doing so, it seeks to not only advance our theoretical understanding of the social psychological factors that influence interactions with art but also offers practical applications for artists, curators, cultural institutions, and policymakers, providing societally relevant insights that extend beyond academia.

## **Dutch Summary**

De psychologische studie van kunst heeft zich traditioneel gericht op esthetische ervaringen vanuit een bottom-up perspectief, waarbij onderzocht wordt hoe zintuiglijke systemen perceptuele kenmerken in kunstwerken verwerken. Hoewel recentere modellen ook top-down invloeden hebben meegenomen - wat empirisch onderzoek heeft doen opkomen naar hoe contextuele factoren (bijv. de aanwezigheid van titels, fysieke kijkcontext) reacties op kunst beïnvloeden - gaan deze benaderingen niet volledig in op de interpersoonlijke en sociale dimensies die de creatie en receptie van kunst vormgeven. Maar waarom is dit belangrijk? Kunst is niet alleen een individuele ervaring - het is een medium waarmee we met anderen omgaan, sociale grenzen uitdagen en onderhandelen over groepsidentiteiten. Gemaakt door een kunstenaar met een bepaalde identiteit en een specifiek publiek in gedachten, wordt kunst geïnterpreteerd door de lens van culturele verhalen en maatschappelijke overtuigingen, die vorm geven aan hoe we anderen waarnemen - en er uiteindelijk mee omgaan. Toch weten we verrassend weinig over de manier waarop deze sociale dimensies onze interacties met kunst beïnvloeden. In drie empirische hoofdstukken wordt in dit proefschrift onderzocht hoe: (1) de motieven van kunstenaars voor het maken van kunst de waardering van het publiek beïnvloeden (hoofdstuk 2); (2) de identiteit van de kunstenaar (d.w.z. menselijke of kunstmatige intelligentie; AI) en maatschappelijke overtuigingen over de menselijke creatieve uniciteit van invloed zijn op reacties op muziek gemaakt door AI (hoofdstuk 3); en (3) indrukwekkende kunst sociale openheid bevordert en vooroordelen tussen groepen vermindert door ‘zelftranscendente’ emoties op te roepen zoals overweldiging, verwondering, en ontroering (hoofdstuk 4).

In hoofdstuk 2 onderzochten we de motieven achter het verlangen van professionele kunstenaars om kunst te maken en gingen we na of en hoe deze motieven de waardering van het publiek beïnvloeden. Eerst ontwikkelden we een taxonomie van motieven, waarbij we ze categoriseerden op basis van de intrinsieke/extrinsieke motivationele dimensie en ze verder onderverdeelden op basis van hun beoogde doel (Studie 2.1). Eerder onderzoek buiten de kunsten suggereert dat intrinsieke motivatie sociaal gewaardeerd wordt - in vergelijking met extrinsiek gemotiveerde individuen worden intrinsiek gemotiveerde mensen over het algemeen veel positiever beschouwd en behandeld (Jachimowicz et al., 2019; Wang et al., 2022; Wild et al., 1992, 1997). Hierop voortbouwend stelden we de hypothese op dat intrinsiek gemotiveerde kunstenaars ook meer gewaardeerd zouden worden dan extrinsiek gemotiveerde kunstenaars. In twee experimenten manipuleerden we motiefinformatie om het effect ervan op reacties op dezelfde kunstwerken te onderzoeken (Studies 2.2 en 2.3). Een longitudinale studie volgde, waarbij de motieven van kunstenaars op het beginpunt en hun waargenomen waardering twee jaar later werden gemeten (Studie 2.4). De bevindingen ondersteunden grotendeels onze hypothese: intrinsiek gemotiveerde kunstenaars werden over het algemeen meer gewaardeerd dan extrinsiek gemotiveerde kunstenaars, in termen van hoe competent en warm ze werden ervaren, de mate waarin hun werk als mooi werd beschouwd en de mate waarin mensen geloofden dat ze een blijvende impact zouden hebben. Dit effect werd gedreven door een positief effect van intrinsieke motieven in plaats van een negatief effect van extrinsieke motieven.

In hoofdstuk 3 onderzochten we de psychologische mechanismen die ten grondslag liggen aan de neiging van individuen om kunst gemaakt door kunstmatige intelligentie (AI) technologie te onderwaarderen. Specifiek onderzochten we of de reacties op hetzelfde muziekstuk verschilden afhankelijk van of participanten geloofden dat het gemaakt was door een mens of door AI. Daarbij onderzochten we ook hoe maatschappelijke overtuigingen over de menselijke creatieve uniciteit (d.w.z. antropocentrische creativiteitsovertuigingen) samenhangen met deze reacties. Eerder onderzoek toonde aan dat individuen de neiging hebben om aan AI toegeschreven kunst te onderwaarderen (Chamberlain et al., 2018; Shank et al., 2023), maar de psychologische mechanismen

die aan deze neiging ten grondslag liggen blijven onduidelijk. Om hier iets aan te doen, hebben we twee verklaringen - gemotiveerd redeneren en belichaamde bedreiging - getest met behulp van fysiologische metingen van parasympathische zenuwstelselactiviteit. We voerden twee lab-in-field experimenten uit waarin deelnemers naar hetzelfde stuk klassieke orkestmuziek luisterden, terwijl we informatie over de herkomst ervan manipuleerden (d.w.z. of het door AI of een mens was gemaakt). Terwijl deelnemers luisterden, maten we allereerst hun parasympathische zenuwstelselactiviteit, vervolgens hun waardering en emotionele reacties op de muziek (Studies 3.1 en 3.2) en tot slot hun waargenomen bedreiging en antropocentrische creativiteitsovertuigingen (Studie 3.2). Met deze aanpak konden we bepalen of negatieve zelfrapportages alleen cognitieve evaluaties weerspiegelden of ook een diepere, belichaamde bedreiging. De bevindingen toonden aan dat mensen niet alleen een lagere waardering en zwakkere emotionele reacties vertoonden, maar ook meer fysiologische stress wanneer ze geloofden dat de muziek door AI (versus mensen) gecreëerd was. Aanvullende analyses toonden aan dat deze effecten meer uitgesproken waren bij individuen met sterkere antropocentrische overtuigingen over creativiteit, die AI-gegenereerde muziek vooral zagen als een bedreiging voor de menselijke creatieve uniciteit. In het algemeen suggereren deze bevindingen dat AI-gegenereerde muziek niet alleen wordt ondergewaardeerd vanwege bewuste cognitieve processen, maar ook door een dieper, belichaamd gevoel van bedreiging van de menselijke creatieve identiteit.

In hoofdstuk 4 onderzochten we of impactvolle kunst invloed kan hebben op de manier waarop we ons verhouden tot onbekende anderen—in dit geval immigranten. Door het potentieel van impactvolle kunst om zelftranscendente emoties op te wekken te onderzoeken, zochten we naar bewijs voor het vermogen om tolerantie en prosociale attitudes te bevorderen. Eerder onderzoek had aangetoond dat zelftranscendente emoties - zoals overweldiging, verwondering, en ontroering - zelfgerichtheid verminderen en een grotere openheid naar anderen bevorderen (Stellar et al., 2017). Deze emoties zijn geëvolueerd om sociale bindingsfuncties te dienen, die individuen ertoe aanzetten hun focus te verleggen naar anderen en hen motiveren om zich te verplaatsen in de mentale en emotionele toestand van anderen (Anderson et al., 2020; McPhetres, 2019; Piff et al., 2015; Schoeller & Perlovsky, 2016; Stamkou, 2022; Stellar et al., 2017). Hierop voortbouwend stelden we de hypothese op dat impactvolle kunst een positievere houding ten opzichte van immigranten zou bevorderen door haar vermogen om deze zelftranscendente emoties op te wekken. We vonden eerst correlatieve ondersteuning voor onze hypothese met behulp van een bestaande dataset met respondenten uit Europa (Studie 4.1). In twee daaropvolgende experimenten werden participanten willekeurig toegewezen om ofwel een impactvolle kunstervaring te herbeleven of een alledaagse ervaring die niets met kunst te maken had (Studies 4.2 en 4.3). Uit de resultaten bleek dat de deelnemers in de kunstconditie minder geneigd waren om immigranten te ontmenselijken. Aanvullende analyses leverden voorlopig bewijs dat dit effect werd veroorzaakt door de verhoogde ervaring van zelftranscendente emoties die werden opgeroepen door impactvolle kunst.

Door toepassing van een socio-contextuele benadering laat dit proefschrift zien dat kunst niet slechts een esthetisch object is, maar een interpersoonlijk fenomeen—een fenomeen dat zowel vormgeeft als gevormd wordt door de sociale connecties, identiteiten, motieven en emoties van zowel kunstenaars als publiek. Op deze manier probeert het niet alleen ons theoretisch begrip van de psychologische factoren die interacties met kunst beïnvloeden te vergroten, maar biedt het ook praktische toepassingen voor kunstenaars, curatoren, culturele instellingen en beleidsmakers, en biedt het maatschappelijk relevante inzichten die verder reiken dan de academische wereld.

# **Author Contributions**

## **Chapter 2**

Dunham, R., Van Kleef, G. A., & Stamkou, E. (2025). *The Heart Behind the Art: Motives for Making Art and How They Influence Audience Appreciation*. Manuscript submitted for publication.

The study was designed by R.D., G.A.v.K., E.S. Data were collected and analysed by R.D. The manuscript was written by R.D. and G.A.v.K. and E.S. provided valuable feedback and revisions.

## **Chapter 3**

Dunham, R., Van Kleef, G. A., & Stamkou, E. (2025). *The Threat of Synthetic Harmony: AI vs. Human Origin Beliefs Affect Listeners' Cognitive, Emotional, and Physiological Responses to Music*. Manuscript submitted for publication.

The study was designed by R.D., G.A.v.K., E.S. Data were collected and analysed by R.D. The manuscript was written by R.D. and G.A.v.K. and E.S. provided valuable feedback and revisions.

## **Chapter 4**

Dunham, R., Van Kleef, G. A., & Stamkou, E. (2025). *The Art of Acceptance: The Effect of Engagement with Art on Attitudes Towards Immigrants*. Manuscript submitted for publication.

The study was designed by R.D., G.A.v.K., E.S. Data were collected and analysed by R.D. The manuscript was written by R.D. and G.A.v.K. and E.S. provided valuable feedback and revisions.

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