Understanding Fans' Attitudes Toward AI-generated Fan Content About Their Favorite Musician

Abstract

In online fan communities, generative AI is providing new ways for fans to engage with and produce fan content related to their favorite celebrities. In this study, we examined how people feel about AI-generated fan art and AI-generated music covers of their favorite musical artists. Through an online survey (N=200) we explored how parasocial relationships with their favorite musicians and self-determination factors of autonomy, competence, and relatedness were associated with attitudes towards AI-generated fan content. Parasocial relationships were positively associated, but when these intrinsic values were taken into consideration, participants' sense of choice in controlling what they see on social media was the only factor that explained favorable sentiments towards AI-generated fan content.

CCS Concepts

• **Human-centered computing → Human computer interaction (HCI)**.

Keywords

Self Determination Theory, Parasocial Relationships, Generative AI, AI-generated art, AI-generated content, Fan art, Music covers, Fan communities, Fandom, Fans

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1 Introduction

The advancement of generative artificial intelligence (Gen AI) has reshaped creative expression, notably in the sectors related to AI-generated art and music [4, 28, 35, 39, 42, 74]. Generative AI has been used as an artistic medium for many people, particularly in fan communities, transforming the way fans engage with their favorite artists online [46, 47]. These innovations have become integral aspects of fan culture, offering novel pathways for fans to consume and/or produce content related to their favorite artists [47].

This study investigates fans' attitudes towards AI-generated content, specifically AI-generated fan art and music covers. Although several studies have researched attitudes towards generative AI in general [35, 39, 48, 61, 74, 81], our study specifically focuses on the perceptions of fans who may have a stronger emotional attachment or personal connection to the AI-generated content they see. The concept of parasocial relationships [23, 51] helps us better understand how the complex relational dynamics between fans and their attachment to their favorite musicians affect their attitudes toward AI-generated fan content. In addition to relational factors, we apply Self-Determination Theory (SDT) as a framework to explore the role of basic (intrinsic) human needs: autonomy, competence, and relatedness [22, 25, 65]. We use this theory to enhance our understanding of user engagement and motivation in these online communities, particularly fan communities.

By combining the concepts of parasocial relationships and SDT, we aim to understand the motivation behind engagement with AI-generated fan content. Our study raises two research questions. First, how do parasocial relationships relate to fans' attitudes toward AI-generated fan art and AI-generated music covers? Second, how are fans' senses of autonomy, competence, and relatedness related to their attitudes toward AI-generated fan art and AI-generated music covers?

This study contributes to the field of Human-Computer Interaction by applying concepts of parasocial relationships in relevant technological contexts where users have emotional connections with the content. It broadens the understanding of how fans' connections to musicians affect their perceptions of the technology used to engage with related online content. The content that these fans engage with may impact them in a different way and depth than it would an average user due to the unique emotional connection to the content, which is an interesting area of exploration.

This approach not only enhances theoretical knowledge but also offers practical implications for designing AI systems that better align with user needs and expectations in online spaces featuring creative communities and digital content. Our research has implications for large portions of the Internet dedicated to engagement within fan communities on various platforms, as it highlights the factors critical in shaping people's judgments of AI-generated fan content. This knowledge may guide decisions regarding the development of platforms that host or utilize generative AI as a popular source of content engagement.

2 Literature Review

2.1 Generative Artificial Intelligence

Generative artificial intelligence (Gen AI) represents a branch of AI that employs machine learning techniques to produce new, original content such as text, images, audio, video, etc. [69, 79]. In recent years, the rapid advancement of generative AI has led to its widespread adoption across various industries [39, 48, 61, 69] and it has even transformed several of them, notably the art industry [15, 28, 43, 57, 69].

2.1.1 AI-generated Art. AI-generated art is an emerging form of artistic creation using AI technology [15, 71]. AI is not only able to assist artists in their creation processes, but is also able to generate various forms of artworks [6, 14, 19, 41, 75, 79] through deep

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learning, machine learning, and neural networks [15]. By analyzing large amounts of existing art data, AI is able to learn art styles and techniques, and then generate its own new artwork [3, 39, 79]. Representative applications of AI-generated art include Midjourney, Stable Diffusion, DALL-E and Stability AI, which can generate images based on textual descriptions [39, 59, 79]. These tools attract tens of millions of users every day, demonstrating their enormous potential for creativity and productivity [72]. The use of this technology is not limited to the visual arts, but also includes music, literature, and even film, demonstrating the versatility of AI in artistic fields [10, 13, 70].

Generative AI's role in these creative domains has been controversial [20]. For example, a user named Ghostwriter brought widespread attention to the ethical ambiguities of AI when he used AI voice models of popular musicians Drake and The Weeknd to create the song "Heart on My Sleeve." [20] The song was taken down across multiple streaming platforms and opened a larger conversation surrounding the line between creative expression and legal violations [20].

2.1.2 Attitudes toward AI-generated Art. People's attitudes toward generative AI in artistic creation have become increasingly diverse and complex over the past few years [27, 43, 48, 69, 81]. There are many mixed opinions on generative AI, with some people viewing it as a new form of creativity that is "acceptable" or "ethical" under specific circumstances [69]. Initially, many held a negative view of AI-generated artworks, perceiving them as lacking intelligence and creativity [2, 52, 53, 81]. However, recent studies challenge this bias. Some studies show that audiences' evaluations of AI-generated artworks are not significantly lower than those of human-created artworks [26, 53, 82]. Many artists are also unbothered or unaffected by the emergence of AI in their industry; for example, if the artist is experienced and has an established reputation, or uses a specific medium that is not reproducible, they typically have a less negative view toward the AI landscape [43]. Some studies have even concluded that creative professionals are excited about these tools because they can boost productivity, efficiency, and inspiration in typically tedious or time-consuming tasks [35, 39, 45]. Furthermore, there is evidence suggesting that people sometimes cannot distinguish between AI-generated and human-generated art, even preferring AI-generated works in some instances [48].

On the other hand, concerns have been raised among artists about the ownership and copyright of their work when AI is used, as the generated work seems to mimic the original artist's style [35, 43, 59]. In addition to these common concerns, some artists faced a decline in income as employers opted to use these AI tools rather than hire human artists. This has prompted some artists to consider career shifts to fields that are less impacted by this technological advancement [43]. Nanna et al. explored the views that people had regarding generative AI tools in the art industry, and have found concerns related to reduced product quality, a weakened creative process, and copyright issues [35]. The uncertainty surrounding AI as a creative tool often leads to negative attitudes toward AI-generated art within artistic communities. Some of these negative perceptions also developed because of a belief that the AI-generated pieces are lacking emotional depth [74] and are threatening traditional creative processes [27].

The reception of AI-generated art also varies based on viewers' pre-existing knowledge; knowing that an artwork was created by AI can lead to less favorable ratings, whereas mistakenly perceiving it as human-made may garner more positive responses [8, 32]. Furthermore, socio-cultural contexts significantly shape people's acceptance of AI-generated art [81]. It is evident that people's attitudes toward AI-generated art are shaped by a plethora of aspects such as personal experiences with art, knowledge of AI capabilities, expectations and concerns regarding the future of AI, and socio-cultural identities [27, 43, 48, 79, 81]. It is important to understand how public opinions toward AI-generated art will continue to develop as the technology advances and knowledge around this topic deepens [44, 55]. Through the exploration of fan communities, we hope to offer insights into a more specific and relevant demographic.

2.2 The Fan Community and Fan Art

The term "fan", derived from the word "fanatic", has evolved to represent a person who has a lot of enthusiasm and devotion to a popular figure [1, 29, 37]. For most fans, being a fan means that there is some level of emotional attachment and, in many cases, meaningful interactions with a character or celebrity [49]. Fans can engage in their interests in many ways: investing in albums, concerts, merchandise [1], supporting their idols on online platforms [1, 24], and participating in the creation of fan content such as fan fiction, fan art, and fan video/dance/song covers [24, 29, 38].

Those in fan communities share a strong bond with each other because they have the same interests or are working toward similar goals [24, 29]. For example, fan communities of East Asian music bands share similar desires to help their favorite celebrities thrive and grow [24, 84]. The fan community for these groups are very intense and loyal because they feel as if they are a key indicator of the celebrity's success [1, 84]. Fans feel a variety of different motivators to support their favorite celebrities whether they feel an attraction to the idol, a psychological need to provide for them [24, 84], or a sense of escapism from being part of the community [38].

Fan art is artwork created by fans that could encompass any two-dimensional or three-dimensional artwork of any medium [17, 37]. Fans find comfort within their community and use art as a form of expression to show their appreciation for the character or celebrity, and to increase their engagement with the fandom [24]. Fan art can be used as a way to interact with other fans and to nurture their relationships with each other [49]. The interactions fans have with their community allow them to stay continuously involved, as it brings them a sense of belonging, mental comfort, and support, in forms like money, advice, and coping resources [24, 62].

Fan art is enjoyable because it lets fans immerse themselves in a fantasy that allows them to escape from the real world or any personal hardships they are going through. [17, 49]. The fan community serves as an outlet to learn about the world and the diverse cultures within it through socializing with people of all walks of life [17]. Fan artists can further interact with the community through art critiques by sending their fan art into channels and asking for constructive feedback [17, 49, 50]. If they received positive feedback they would gain a sense of pride and validation from their peers

regarding their artwork [17]. Creating fan art may also provide fan artists with a reputation from other fans due to the development of a stronger social capital [38] as someone who has not only a high level of artistic expertise, but also the ability to re-interpret the original work; this further strengthens the interpersonal relationships in the fan community [1, 50]. Moreover, these fan channels serve as the hub for conversation with other fans and fan artists, which ultimately boosts the unity of the fandom [84]. Being a part of this wider community improves fans' well-being through engagement within the fandom, the social connections that develop within it, and the ability to express oneself through the creation of fan arts [17, 24, 38, 62].

The phenomenon of fan art has existed for decades, with enthusiasts creating original artistic interpretations of their favorite figures. However, the recent emergence and rapid advancement of AI technology has significantly impacted this creative landscape [15, 28, 35, 48]. AI-powered image generation tools are now more sophisticated than ever, enabling the production of fan artwork without the prerequisite of highly specialized painting or musical skills. Concurrently, a growing number of fan art creators are increasingly incorporating AI systems into their creative process. In the case of musicians, for example, the vast amount of visual and audio data—both in the public domain and technically under copyright—that can be used to generate AI-developed content contributes to the ease of creating that type of content. These AI-assisted approaches have expanded the accessibility of fan art and music covers, lowering the barriers to entry for enthusiasts seeking to express themselves in their fandom through visual and auditory media. In this context, our study aims to explore this growing cultural phenomenon, focusing specifically on the fan art content that is created using AI.

2.3 Parasocial Relationships

The proliferation of AI-generated fan art and music covers raises important questions about how audiences perceive and engage with this new form of creative expression. To uncover fans' perceptions of AI-created fan content, we must first understand the complex dynamics between fans and their favorite figures. To study these complex interactions, the concept of parasocial relationships offers a useful framework.

Horton and Wohl developed the concept of parasocial relationships in 1956, describing the "one-sided, seemingly face-to-face relationships" that audiences have with media figures such as celebrities or fictional characters [31, 33]. This phenomenon explains how people develop intimate-yet-unilateral connections with these media figures and believe that the figure is their real-life friend through the virtual interactions that may occur between them [31, 33, 36]. Living in a digital world where social media serves as a means of social connection, parasocial relationships may be cultivated and strengthened due to the accessibility and frequent consumption of celebrities' content [9, 31].

This asymmetrical dynamic has fascinated researchers for decades, leading to extensive explorations of its implications in the digital age. In recent years, scholars have conducted a large number of survey studies on parasocial relationships [7, 11, 16, 31, 36, 51] that aim to analyze the parasocial relationship between fans and celebrities, particularly within the emerging media forms that have appeared with the development of technology; these forms may be online communities [7], social media [11, 16], reality TV [16], and online streaming [51] to name a few. The advent of these media forms has made it possible for fans to continue to have a parasocial relationship with celebrities they care about because unlike traditional media, new media, such as social media, allow fans to engage with content related to their favorite celebrities 24/7 [18, 31]. To investigate the relationship between parasocial relationships and the factors contributing to people's attitudes toward AI-generated fan works, we propose the following hypotheses in this study:

H1a. Parasocial relationships are positively related to attitudes toward AI fan art.

H1b. Parasocial relationships are positively related to attitudes toward AI music covers.

Building upon this foundation, Self-Determination Theory (SDT) offers valuable insights into the underlying psychological factors that may shape people's attitudes toward AI-generated fan art and music covers.

2.4 Self-Determination Theory

Self-Determination Theory (SDT), originally proposed by Deci and Ryan, is a theory of human development, health, and motivation based on decades of empirical research [25]. SDT posits that human motivation is driven by the need to satisfy three fundamental psychological needs: autonomy, competence, and relatedness [65]. Autonomy refers to an individual's sense of choice and control in their actions; competence refers to feelings of ability and effectiveness in accomplishing tasks; and relatedness refers to a sense of connection and belonging to others [65]. In the field of AI-generated art, research has shown that people have increased positive attitudes toward the AI technology when they perceive it to be highly related in all forms of art such as visual art and music [48]. Perceived autonomy in specific contexts (e.g., detecting forged artwork and creating artwork) was associated with positive attitudes toward AI as well [48].

In this study, we measured SDT, through the lenses of autonomy, competence, and relatedness, and investigated the relationship between SDT and people's perceptions on AI-generated fan art and music covers. The findings contribute to the literature on SDT by highlighting the importance of these psychological needs in creative domains impacted by generative AI.

2.4.1 Autonomy. Autonomy situated within SDT pertains to one's perceived feeling of choice or intrinsic motivation in performing a task [66, 77]. AI's emergence notably brings to question the sense of control or choice users have on the social media platforms where AI usage is prevalent. Circumstances that reduce feelings of choice, control, or freedom disrupt and undermine a person's sense of autonomy. For instance, if a user feels controlled in their pursuit of an activity, their sense of autonomy and motivation diminishes. Thus, this affects their attitudes toward the technology and/or platform(s) [66, 77]. We draw from SDT in our study to explore autonomy through the lens of the perceived freedom to view AI fan art and listen to AI music covers.

H2a. Autonomy is positively related to attitudes toward AI fan art.

H2b. Autonomy is positively related to attitudes toward AI music covers.

2.4.2 Competence. Competence is the ability to complete a task capably and effectively [48]. This component underscores the importance of people gaining mastery in completing an activity [34, 83]. It allows for an improved well-being [58, 65] and personal recovery [40] because it provides people with a sense of satisfaction and control [58]. To enhance one's competence, the task must be challenging enough to provide a sense of accomplishment [58]. In the context of our study regarding AI-generated fan arts and music covers, perceived competence is represented by one's perceived sense of mastery, confidence, and ability to effectively differentiate AI-generated content with the original artwork or cover [66].

H3a. Competence is positively related to attitudes toward AI fan art.

H3b. Competence is positively related to attitudes toward AI music covers.

2.4.3 Relatedness. Relatedness refers to one's desire to feel connected, cared for, and close to others in their community [78]. It is one's perceived feeling of connectivity and sense of belongingness, and the need to establish close relationships with others [21]. Relatedness is important because it helps to generate a greater sense of purpose amongst people. When someone does not feel meaningfully involved in a greater community, they may feel detached or disengaged, and develop a reduced sense of relatedness to their community; this may therefore impact their overall attitude toward that community [48]. In regard to attitudes toward AI's use in general culture and various arts, one study concluded that people's perceived relatedness to their communities is positively associated with their attitudes toward AI in art and culture [48]. Another study found that robotization diminishes workers' sense of relatedness, leading to a decline in well-being [56]. Researchers have found that fans of the popular, Korean boy band BTS experience enhanced mental well-being, sense of social connectedness, and greater sense of purpose due to the unified and strong fan community [63]. In our study, relatedness is experienced when one perceives connectivity with others in their fan community [66]. This is important to consider, as many fan communities build their own identities and cultures, and feeling close to that culture can help strengthen the overall fandom. Similarly, many music fans form friendships over their shared interests, and these fandoms can help build and maintain relationships, which is a key characteristic of fan communities [64].

H4a. Relatedness is positively related to attitudes toward AI fan art.

H4b. Relatedness is positively related to attitudes toward AI music covers.

Finally, the conceptual model is shown in Fig.1.

3 Methods

3.1 Data Collection

Prior to data collection, we confirmed that our study was ethical through the Institutional Review Board of the lead investigator's university. We collected data using an online survey that we designed and hosted on Connect by Cloud Research, a panel service that provides survey and paneling capabilities. Participants were paid $1.88, based on the estimated time it would take to complete the survey. The survey targeted English-speaking adults living in the United States, Australia, Canada, and the United Kingdom.

We presented a consent form to participants prior to the survey that listed the research aims, possible sources of risk, the right to withdraw from the survey and abstain from answering any questions, as well as contact information for a member of our team.

The survey first asked participants to name their favorite musician or music group. All subsequent questions were related to how they felt about their favorite musician and activities associated with them. We asked participants about their level of engagement with that musician's fan communities, how they see AI being used within fan communities, how they feel about the use of AI in fan communities, and various sociodemographic factors.

We also asked participants about their general attitudes and self-assessed knowledge of AI-related concepts. The exact measures of these factors are described in the next section.

3.2 Measures

The two dependent variables measured in the study are (1) attitudes toward AI-generated fan art and (2) attitudes toward AI-generated music covers.

For attitudes toward the AI fan art (M= 3.09, SD= 1.07), we asked "How positively or negatively do you perceive AI-generated fan art?" Respondents indicated their answers on a scale from 1 (very negative) to 5 (very positive).

For attitudes toward AI-generated music covers (M= 2.79, SD= 1.11), we asked, "How positively or negatively do you perceive AI music covers?" The respondents indicated their answers on a scale from 1 (very negative) to 5 (very positive).

The study's four main independent variables were: (1) perceived autonomy in the use of generative AI technologies, (2) perceived competence in the use of generative AI technologies, (3) perceived relatedness with one's favorite musician's fan community, and (4) the perceived parasocial relationship with one's favorite musician.

Perceived autonomy (M= 2.68, SD= 1.04, α= .85) in the consumption of Generative AI art technologies and perceived autonomy (M= 2.56, SD= .99, α = .78) in the consumption of Generative AI music technologies were evaluated using three-item scales adapted from previous research [54, 58, 60, 66]. These items assessed how much control users felt they had within the social media platform to choose the types of content they see. Participants indicated their agreement with statements on a scale from 1 (strongly disagree) to 5 (strongly agree). In total, three statements assessed autonomy as it relates to consuming Generative AI, for each dependent variable (e.g., "I engage with AI fan art because it interests me" or "I engage with AI music covers because it interests me").

Perceived competence referred to the users' confidence in their ability to differentiate between AI-generated content and human content. Competence in the fan art context (M= 3.54, SD= .86, α = .90) and perceived competence in music covers (M= 3.42, SD= .96, α = .92) were evaluated each with five items, two of which were created from original ideation, and three of which were adapted from previous research. Participants reflected their agreement with five statements for each dependent variable (e.g., "I feel capable of

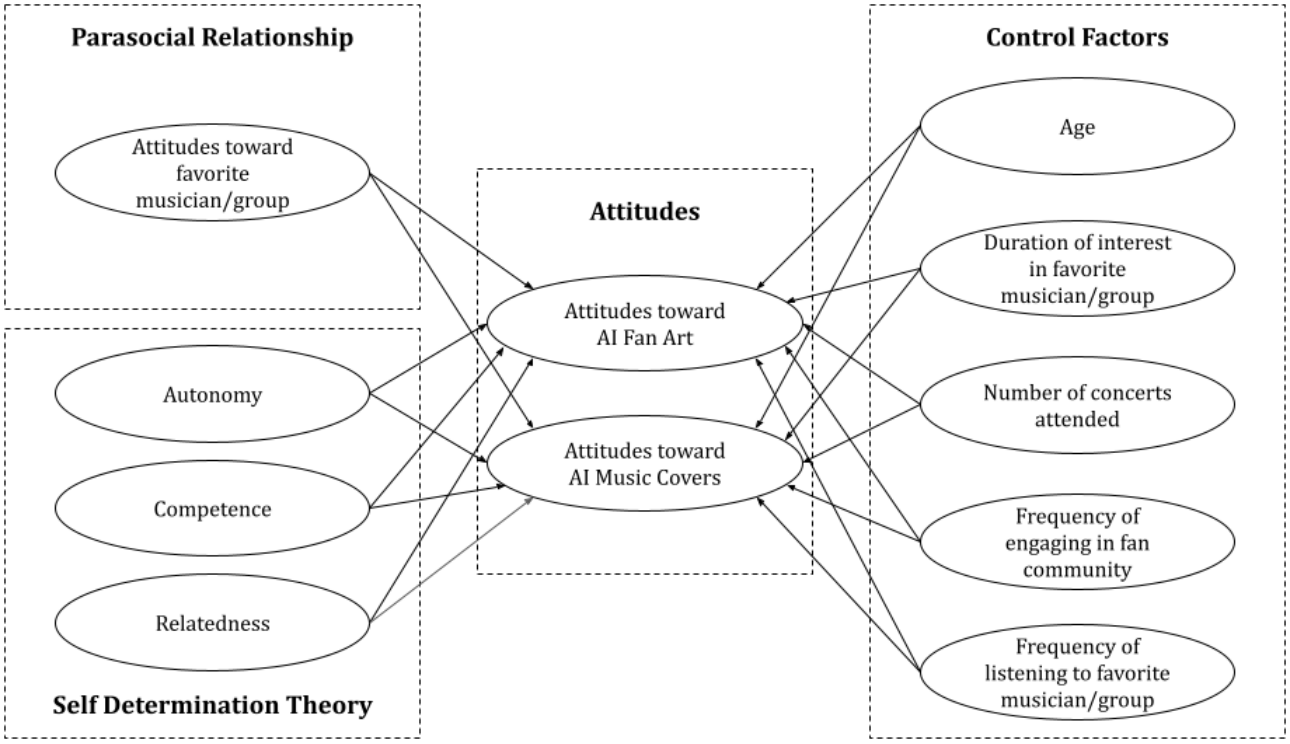

Figure 1: The Conceptual Model

differentiating between AI generated fan art and traditional fan art" or "I feel capable of differentiating between AI music covers and original covers"), on a scale from 1 (strongly disagree) to 5 (strongly agree). The items that were adapted from three different existing studies are as follows: "I feel confident in differentiating between AI generated fanart and traditional fanart" [80], "I feel capable of differentiating between AI generated fanart and traditional fanart" [66], and "I know the limitations of my ability in differentiating between AI generated fanart and traditional fanart" [83].

Perceived relatedness (M= 3.37, SD= 1.01, α= .95) with one's favorite musician's fan community was measured with a three-item scale used in previous research [78]. Participants reflected their agreement with statements (e.g., "With the other people in my fan community, I feel supported") on a scale from 1 (strongly disagree) to 5 (strongly agree). This scale has shown reasonable internal consistency in previous studies [68].

The perceived parasocial relationship with one's favorite musician (M= 2.92, SD= .91, α= .96) was measured with a 24-item scale used in previous research [76]. Participants reflected their agreement with statements (e.g., "I would be able to count on my favorite musician/group in times of need") on a scale from 1 (strongly disagree) to 5 (strongly agree).

Additionally, general information on participants' favorite musicians was collected from questions such as "How often do you listen to this musician's music?", "How many years have you had an interest in this musician/group?", and "How many concerts or performances (in-person or virtual) by this musician have you ever attended?". Sociodemographic variables were also taken into account, including age, gender, and ethnicity/race.

4 Results

4.1 Survey Participants

A total of 200 participants (112 male, 88 female) participated in the study. All of the participants who took part in this study are self-proclaimed fans. The mean age of participants was 36.4 years (SD= 12.42, range= 18-76), indicating an adult sample spanning multiple generations. The racial composition of the participants is as follows: White (63.5%), Black or African American (16.5%), Asian (13.5%), other races (6%), and one participant who preferred not to disclose their race.

The majority of participants were from the United States (91.5%), followed by Canada (5.5%), the United Kingdom (2.5%), and Australia (0.5%). Most participants were employed (88%), and over half (51%) held a bachelor's degree or higher (including master's and doctorate degrees).

4.2 Descriptive Data

The control variables included age, duration of interest in favorite musician/group, number of concerts attended, frequency of engaging in fan community, and frequency of listening to favorite musician/group.

At the beginning of the survey, participants were asked to identify their favorite musician or musical group. The responses revealed a diverse range of preferences. Taylor Swift and Drake emerged as the most frequently mentioned artists, each cited by 6 participants (3% of the sample for each artist). Following closely, BTS, Coldplay, Kendrick Lamar, The Beatles, and The Beach Boys were each named by 4 participants (2% of the sample for each artist). Participants reported a mean duration of interest in their favorite musician or group of 12.84 years (SD = 10.3, range = 0-45). In the survey, we asked participants to enter 0 if their duration of interest was less than one year. This suggests a mix of long-term fans and those with more recent interests. The number of concerts attended showed considerable variability (M = 1.94, SD = 7.47, range = 0-100). This suggests that while many participants had attended few or no concerts, a smaller subset were highly active concert-goers.

For frequency of engaging in fan community, the distribution was as follows: 32% reported "Never," 22.5% "Few times a year," 17% "Few times a month," 12.5% "Few times a week," 3% "Once a day," and 2.5% "Many times a day." This distribution indicates that while a significant portion of the sample rarely or never engaged in fan communities, a small, but dedicated group participated very frequently.

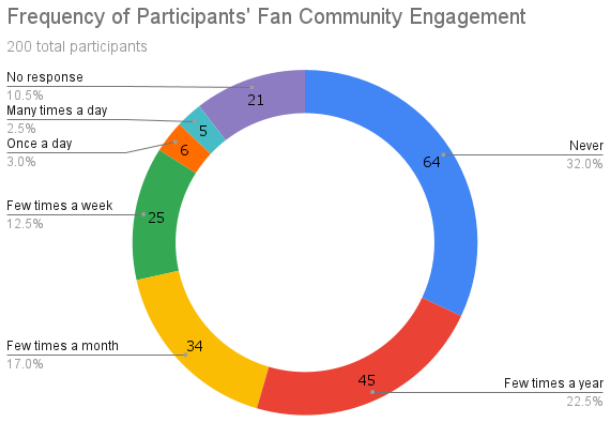

Figure 2: Frequency of Participants' Fan Community Engagement

Regarding listening frequency, 45% reported listening "Few times a week," 20% "Few times a month," 18.5% "Many times a day," 9.5% "Once a day," and 6.5% "Few times a year." The majority of participants (73%) reported listening to their favorite musician/group at least a few times a week, with 28% listening daily or more frequently. This suggests a high frequency with their preferred music content among the sample.

4.3 Hypothesis Testing

The first two models examine attitudes toward AI-generated fan art. We used a step-wise OLS regression to test our hypotheses. The first block contained control variables and parasocial relationships. The

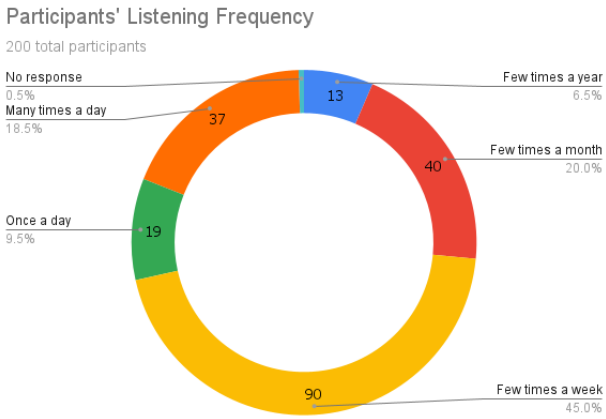

Figure 3: Participants' Listening Frequency

second block added the three self-determination variables. This analysis method was used to see if there would be any model changes based on the different theoretical components.

Our first model examined the relationship between parasocial relationships and attitudes toward AI fan art. The model was significant (F(6,193)= 3.77, p= .002), explaining 32 percent of the variance of the dependent variable (adjusted R square= .07). None of the control variables were statistically significant, and parasocial relationship was positively related with attitudes toward AI fan art (β= .19, p= .02), meaning that users who had stronger emotional attachment to their favorite musicians were more likely to report favorable tendencies toward AI fan art.

The second model added the three components of self- determination as independent variables. The model was significant (F(9,190)= 17.72, p<.001), explaining 68 percent of the variance of the dependent variable (adjusted R square= .43). The R square change was statistically significant (p<.001). In this expanded model, parasocial relationship was no longer significant (β = -.01, p= .886). Among the self-determination factors, competence of being able to identify AI content (β = -.04, p = .494) and relatedness with fan communities (β = .07, p= .357) were not significant, but autonomy (β = .65, p<.001) was positively related with attitudes toward AI-generated fan art.

H1a is supported in the first model, but when we integrate SDT in the second model, H1a is no longer supported, but H2a is supported by that model. H3a and H4a are not supported in the second model.

To understand fans' attitudes toward AI music covers, again we used OLS regression to test our hypotheses. Our first model examined the relationship between parasocial relationships and attitudes toward AI music covers. The model was significant (F(6,193)= 3.07, p= .007), explaining 30 percent of the variance of the dependent variable (adjusted R square = .06). Among the control variables, only age was statistically significant (β= .18, p= .03), suggesting that older users had higher favorable attitudes towards AI-generated music covers. Parasocial relationship was positively related with attitude toward AI music covers (β= .21, p= .008).

The second model added the three components of self- determination as independent variables. The model was significant ($F(9,190)= 14.19$, $p<.001$), explaining 63 percent of the variance of the dependent variable (adjusted R square= .37), with a significant R square change ($p<.001$). Parasocial relationship was no longer significant ($\beta= .02$, $p= .80$). Among the self-determination factors, competence ($\beta= .05$, $p= .388$) and relatedness ($\beta=-.04$, $p= .659$) were not significant, but autonomy ($\beta= .62$, $p<.001$) was positively related with attitudes toward AI music covers.

H1b is supported in the first model, but when we integrate SDT in the second model, H1b is no longer supported, but H2b is supported by that model. H3b and H4b are not supported in the second model.

In general, regardless of whether we were looking at AI-generated fan art (visual art) or AI-generated music covers, we found that when only looking at people's affections towards their favorite musician, those feelings were positively related with how they felt about AI-generated fan content. However, when intrinsic factors were taken into consideration, the relational values were no longer statistically significant and only autonomy was positively associated with attitude towards AI-generated fan content.

5 Discussion

The integration of AI into more creative domains poses a potential threat to what we have traditionally defined as being a uniquely human characteristic: creativity. But beyond the debates around what is art, which usually involve the opinions of self-identified artists, our study focuses on the following domains: generative AI in fan art and music covers. These types of content are unique even within the realm of AI art because they are usually not produced by artists or created for commercial purposes. If created to celebrate celebrities (by using technology to pay homage to them through visual or audio means), what are the factors that would make the consumers of this content more likely to have a favorable attitude?

5.1 Theoretical Implications

Different from our initial expectations, we found no significant relationship between perceived competence and attitudes toward AI-generated fan content. Several possible interpretations can be made based on this lack of correlation. First, users may prioritize the quality of the content over the artist who created it. If the content itself is positively perceived, the perceived ability to distinguish between AI-generated and human-created content could become less relevant. Alternatively, this finding could indicate that being able to differentiate between AI work and human work may not significantly influence attitudes, as perceived competence neither affects what users ultimately see or experience on the platform nor sways users' opinion on the subject. These findings challenge assumptions about the importance of users' ability to distinguish between AI-generated content and human content. That said it is possible that our measure of competence did not capture all relevant aspects in this context, highlighting the need for future research to explore different perspectives of competence related to AI-generated fan content.

Moreover, there is no connection between relatedness to the fan community and attitudes toward AI-generated content. This finding can be interpreted in several ways. The often anonymous or pseudonymous nature of online fan communities might diminish the impact of relatedness on perception of fan content. For example, individuals within a fan community may be unfamiliar with the person that uploaded or created the fan content. In some cases, the creator may not even be a member of the community nor have a strong sense of fan identity. This anonymity may lead to altered perceptions of the content.

Alternatively, fans may disregard their sense of belonging when evaluating the fan art and focus on the other metrics, such as the content's quality. Relatedness is a multifaceted metric. It is also possible that while we focused on relatedness to the fan community, other forms of relatedness (e.g., to the content creators, to the AI systems, or to the platforms) might play more significant roles in shaping perceptions.

5.2 Design Implications

Many major companies like Meta and TikTok have been implementing labeling features for AI-generated content to delineate to users which posts they see are created by generative AI tools [12]. Although this feature makes it easier to distinguish between the AI-generated content and human-generated content, our results indicate that this feature may actually be most applicable in aiding autonomy.

Our results highlight a positive relationship between autonomy and people's perception of AI-generated fan content, which underscores the importance of user control (on social media platforms) in influencing their attitudes. With a better understanding of how choice is fundamental to shaping perceptions of AI-generated content, it may be worth considering some of the current industry practices such as labeling features. Labeling features can allow users to clearly categorize and filter content displayed on their feed. From a practical standpoint, the insights suggest focusing on features that enhance user control, such as robust filtering options, personalization settings, and feedback mechanisms, that allow users to customize platforms to their unique preferences.

Emphasizing the existence of these functions is also important. In furthering public perception of AI technology, increasing the visibility of these options is immensely important in aiding feelings of autonomy. Increased awareness may garner more positive views towards these AI-generated works. Having more freedom to customize the content that users engage with shapes their algorithms uniquely to the preferences of each person. With a personalized algorithm, users may feel more connected to these platforms and thus increase their usage and engagement. Since users are the foundation of a company's success, employing methodologies and strategies that cater to their preferences may gain more positive user satisfaction. Likewise, many social media applications allow for certain types of content to be hidden from their feed typically through that post's settings. Developing more nuanced algorithms that do not just hide or present AI-generated content on users' feeds may make them feel as if they have an increased amount of options, thus increasing sense of autonomy. If users decide to hide or dislike a certain post on their feed, offering reasons why or analyzing the frequency with which they use that feature may generate a more profound understanding of their feelings toward that content. Having users realize and feel that their choice matters may also

increase their autonomy. With this, developments can be made in the design of these applications to provide users more freedom. These implications could significantly improve user experience of these platforms and increase acceptance of AI-generated content in fan communities and beyond.

Furthermore, while we found a positive relationship between parasocial relationships and attitudes toward AI-generated fan content, this relationship was weaker than the influence of autonomy within the SDT framework. In some ways, this may aid efforts to bolster public perception of AI. Perhaps it is comforting that one of the variables most difficult for a platform to directly address or maneuver around is of little relevance, at least in fan communities. This knowledge allows for more sweeping design changes to be made without having to worry about affecting, for instance, Taylor Swift fans and BTS fans in different ways; if a change is good or bad, it will be good or bad regardless of who receives it.

5.3 Limitations and Future Work

Since our research is focused on English-speaking adults, our findings may not be generalizable to other demographic groups such as those in other cultures or age groups, such as teenagers and adolescents. Prior studies have shown that culture has an impact on people's perception of AI content [81]. Additionally, prior research has examined adolescents' attitudes toward AI, particularly because this growing technology has become more influential and accessible to younger generations [30, 67]. Therefore, our research may not account for these different demographics that may influence the opinions of the participants. Future research should explore perceptions of AI-generated fan work across multiple cultures and age groups to obtain a more comprehensive understanding of their attitudes.

Furthermore, our study did not explore perceptions toward the individual creators who generate and post the AI-generated fan content. This aspect could provide valuable insights into how the social effects of reputation and image of AI art creators within online communities may influence the relationships between people and the work the artists produce. Future investigations may explore how fans perceive and interact with people who share AI-generated content to better understand this nuance.

Additionally, our study did not examine the effects of specific social media platforms, such as Instagram, TikTok, Youtube, and more, on people's attitudes toward the content they engage with on these platforms. Different platforms have their own unique characteristics, even in their policies regarding AI-generated content [5, 73] and thus, each platform likely fosters distinct subcultures, constructs, and algorithms regarding AI-generated fan content. A possible area of exploration for gaining a more comprehensive understanding of people's perceptions of AI-generated fan content could be to examine different types of platforms and their respective intricacies.

Future areas of research may include utilizing other theories or research methods to explore the psychological components that shape people's perceptions, rather than just looking at SDT. Diving deeper into other perspectives or theories may provide a broader understanding of people's perceptions of generative AI. With this, doing a study using qualitative methods, such as interviews, could generate more rich data that uncovers a deeper understanding into attitudes towards AI art.

It may also prove interesting to examine other mediums of fan art such as fan fiction or fan videography. These mediums broaden the understanding of AI-generated content outside the scope of just visual arts and music covers. Exploring other artistic mediums could generate more complex knowledge about perceptions of AI-generated fan work. Although the findings from our study supports the developing research surrounding generative AI being used by creatives in fan communities, further research is critical to progress these insights.

6 Conclusion

Our study emerged from generative AI significantly shaping fan engagement and content creation within online fan communities. By exploring how users respond to AI-generated fan art and music covers of their favorite artists, we see how the nature of parasocial relationships and self-determination factors—such as autonomy, competence, and relatedness—play crucial roles in shaping attitudes toward this new form of content. The findings suggest that while generative AI offers innovative opportunities for fan expression, the impact on fan experiences is deeply intertwined with their personal connections to the artists and their sense of how much control they have on social media platforms to choose how they view content created by other fans.

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