

FROM FASCINATED TO SCARED: AFFECTIVE RESPONSES OF DESIGNERS USING GENERATIVE AI IN THE DESIGN PROCESS

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ABSTRACT

Generative Artificial Intelligence (genAI) is transforming professional design workflows, yet its affective impact on designers remains underexplored. This study investigates designers' affective responses to genAI adoption in the design process, examining the associated underlying causes. Using a grounded theory approach, we conducted semi-structured interviews with fourteen designers who regularly engage with genAI. The collected data were qualitatively analysed through thematic coding, and the results were visualised to identify patterns between affective responses and their triggers. This process revealed genAI evoking affective responses in designers on two levels: on the emotional level, reactive and driven by immediate experiences during AI interaction, and the feeling level, reflective and primarily shaped by broader concerns about genAI's long-term impact on professional identity and practice. The findings highlight a tension between genAI practical adoption and designers' professional uncertainty, underscoring the need for design education to address affective awareness alongside technical proficiency. This approach not only equips designers for more resilient and informed engagement with AI-integrated practices but also enhances their ability to anticipate and design for end users' affective responses to AI-infused systems.

Keywords: Generative AI (genAI), affective responses, design process, human-AI interaction

1 INTRODUCTION

Generative Artificial Intelligence (genAI) is spreading across many professional fields and academic disciplines. The pace and extent of this expansion have already led experts to describe the present phase as the “AI revolution” [1]. Whether this broad adoption of AI will ultimately be recognised as a defining moment in human history remains uncertain, as its long-term effects will only become evident over time [1]. This discussion reflects the present uncertainty, where researchers and professionals in various domains are trying to develop clearer perspectives on AI's implications. The design field is no exception, where two primary trajectories are discussed within and beyond academia: the use of AI as a new design material to be incorporated into intelligent products [2] and the usage of AI to directly support the design process [3]. This study focuses on the latter while recognising its intrinsic connection to the former: we believe investigating AI's role in the design process not only sheds light on its impact on design workflows but also provides insights into how AI, as a design material, shapes the development of intelligent products.

As an increasing number of professionals incorporate AI into their daily workflows, it is possible to collect data from practice, allowing for a deeper examination of the nuances surrounding AI integration in professional settings. These investigations have shown that AI functions not only as a computational agent but also as a social one, capable of influencing the interaction dynamics among those who adopt it [4]. As a result, the prevailing discourse on AI—often centred on its efficiency and technical capabilities—is increasingly contrasted with emerging perspectives that emphasise new dimensions, such as value alignment [5], communication and transparency [6], trust and deception [7], decision-making [8], and ethical considerations [9]. In other words, AI is increasingly understood as a technology that operates in relation to its users rather than as an isolated system. Likewise, the user is not just an operator providing inputs but also an active participant in the interaction with AI. Consequently, working with AI requires hard skills—such as the ability to operate digital tools—and soft skills—such as interpersonal or cognitive ones.

As part of this emerging narrative, this exploratory study examines the designers’ affective responses to AI when used during the design process. Specifically, it aims to identify distinct affective responses and connect them to their underlying triggers. This research enhances the understanding of human-AI interaction by fostering designers’ self-awareness of their affective engagement with AI, both as a design process support and as a design material. In the first case, it better prepares designers to integrate genAI into their practice critically, while in the second, it equips them to design better AI-infused product systems by enhancing their ability to anticipate users’ affective responses and long-term engagement. Beyond its implications for practice, these insights also inform educational approaches. As AI becomes a common addition in professional design workflows, design students increasingly incorporate it into their design processes, often unsystematically. Since students’ perceptions of AI are heavily influenced by their experiences while interacting with it [10], addressing this aspect can enhance their ability to engage with AI tools more intentionally and warily.

2 METHODOLOGIES

This study is part of a broader research endeavour adopting a constructive grounded theory [11] approach to address literature gaps by focusing on designers’ lived experiences. As part of this effort, we conducted semi-structured intensive interviews with fourteen professional designers who regularly use genAI in their work. The open-ended nature of the interviews allowed participants to share their practical experiences and reflections organically and intentionally.

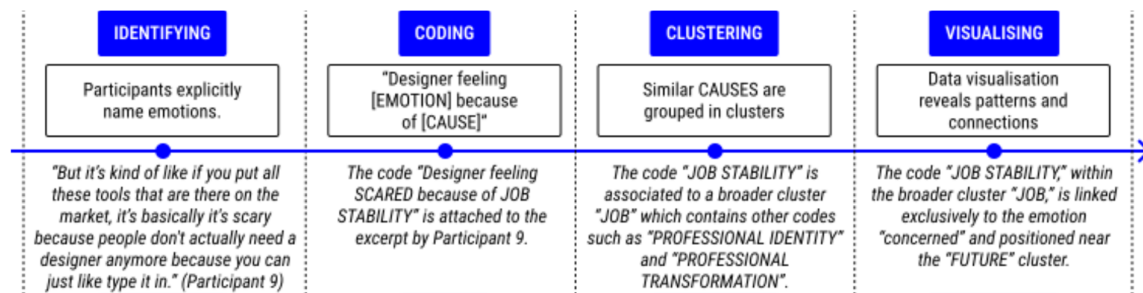


Figure 1. The protocol for analysing the dataset and developing the codes and clustering system

Notably, the interview script did not contain any questions addressing affective responses, meaning that these aspects emerged spontaneously through participants’ narratives rather than being explicitly prompted by us. Recognising the inherent challenges of discussing these topics [12], which also apply to the participants, we aimed to limit extensive interpretation on our side, ensuring the treated data remained grounded in participants’ expressions. To do so, we employed a structured protocol to process the dataset, as summarised in Figure 1. We processed the interview transcripts with the MaxQDA software, identifying segments where participants explicitly mentioned emotions. We coded these segments line-by-line, utilising In Vivo, Process, and Initial Coding techniques, as outlined by Saldaña [13] and refined them using the formula “Designer feeling [emotion] because of [cause]”. Next, we grouped similar causes into broader clusters. Finally, we visualised the aggregated data as a network using Gephi, which helped uncover patterns and relationships between emotions and their underlying causes.

3 RESULTS

Table 1 presents the six emerging clusters of causes identified in the study, which categorise the underlying factors influencing designers’ affective responses.

Table 1. Emerging six clusters of causes for emotional responses

Cluster name	Cluster description - Emotional responses are caused by...
Data	...ethics and security in AI-influenced design processes
Future	...long-term consequences of genAI on society
genAI	...perceptions of genAI’s characteristics, capabilities, and limitations
Job	...the effects of AI integration on the designer’s profession
Output	...the quality, reliability, and originality of AI-generated outputs

Examining the most recurrent affective response-cause pairings in Figure 2, we observe these exhibits high homogeneity, as most affective responses predominantly align with a single or few clusters. This suggests that designers' affective engagement with genAI follows identifiable patterns. The most frequent pairings are outlined below.

- **Designers feel *concerned* because of their *job*.** The prevalent association between concern and job stability suggests that designers are particularly aware of AI's potential to reshape their professional roles in society and the work market, raising questions about employment security, professional identity, and the ambiguous evolving nature of the profession.
- **Designers feel *confident* because of the *process*.** The strong connection between confidence and process suggests that designers gain a sense of assurance when incorporating generative AI into their workflows. Specifically, they feel more equipped to handle complex challenges, as genAI assists in executing time-consuming tasks and provides accessible knowledge on approaching specific problems.
- **Designers feel *mistrust* and *surprise* because of the *output*.** The association of mistrust and surprise with AI-generated outputs reflects uncertainty regarding AI outputs' reliability, coherence, and explainability. Mistrust arises from scepticism regarding the consistency of AI-generated results, while surprise captures moments when AI produces unexpectedly valuable outcomes. This highlights the serendipitous nature of generative AI, which, despite its unpredictability, can be perceived as beneficial when supporting the design process.

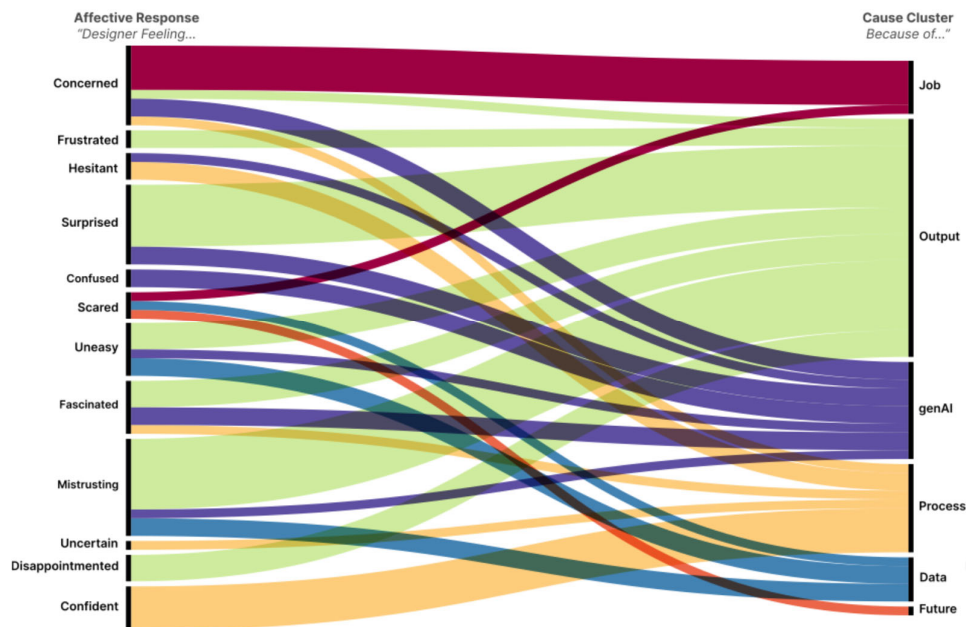


Figure 2. The diagram displays the correlations between the affective responses on the left and the cause clusters on the right

We generated a second visualisation to analyse the dataset further (Figure 3). This visualisation uses a spatialisation algorithm which brings connected elements closer together, highlighting their proximity. From this analysis, two key aspects emerged: first, the central node binding the network together is “AI capabilities” (red circle outline in Figure 3), which connects to five distinct affective responses: “hesitant”, “concerned”, “uneasy”, “surprised”, and “fascinated”. This centrality underscores the twofold effect of genAI. On the one hand, AI’s capabilities elicit fascination and surprise, signalling its potential to generate novel, unexpected, and innovative outputs. On the other hand, the same capabilities trigger hesitation, concern, and unease. This duality suggests that genAI is simultaneously a source of inspiration and a point of contention.

Second, applying Damasio’s [14] distinction between emotions—immediate responses to specific stimuli—and feelings—more enduring, cognitively processed experiences, the network can be divided

imbalance suggests that while designers recognise genAI's potential to support and enhance their work in the short term, they hold a more cautious outlook regarding its long-term implications, with previously studied affective responses to technology, such as technostress and computer anxiety [15]. This tension could lead to a problematic dichotomy: designers increasingly integrate genAI into their workflows as they recognise its capacity to enhance their design processes, and, at the same time, they grapple with underlying anxieties about professional identity, autonomy, and future relevance. In short, it seems genAI is causing an affective duality in designers, characterised by the coexistence of practical adoption and professional uncertainty.

4.2 Integrating Emotional Awareness into AI-Driven Design Education

Observing the affective responses of designers integrating genAI into their practice reveals an additional layer of the designer-AI interaction dynamic, emphasising that genAI influences not only practical applications but also more nuanced, human-centred aspects. These findings underscore the importance of moving beyond technical proficiency to cultivate critical, reflective engagement when considering genAI's impact on the discipline. Recognising the affective implications of genAI adoption enables designers to approach technology not merely as a functional tool but as an agent of change that shapes professional identity and practice.

Therefore, we argue that AI literacy, encompassing this affective dimension, is a key component of the profession and hence should be integrated into design education, affecting two things:

1. From a critical perspective, it is essential to safeguard designers' agency, empowering them to actively shape their evolving societal roles rather than passively adapting to technological shifts and allowing for a more intentional and reflective integration of genAI into their practice.
2. From a practical perspective, it serves as a powerful bridge between the two trajectories of AI— as design material and as support for the design process. Indeed, as designers increasingly integrate AI into their projects and workflows, they occupy a uniquely advantageous position. This dual role allows them to develop a heightened awareness of the affective dimensions of AI interactions. By reflecting on their own affective responses to genAI as users during the design process, they can gain valuable insight into the affective experiences of end users interacting with the AI-infused systems they design. Thus, this awareness can enhance their ability to design AI-infused systems that account not only users' immediate, short-term emotional responses but also their evolving, long-term relationship with AI-driven products.

This perspective reinforces the importance of human-centred design education that prepares designers to navigate, reflect upon, and design for affective responses in AI-driven contexts. Integrating these considerations into practice enables both current and future designers to develop AI-infused systems that are functional and efficient but also emotionally considerate and empowering for users.

5 CONCLUSIONS

This study explored the affective dimension of designers integrating genAI into their design practice. We collected the data through interviews with fourteen designers actively working with genAI, and we qualitatively coded the transcripts to identify two key elements: the designer's affective response and its associated cause. This approach uncovered recurring patterns of affective reactions and contextual triggers, offering insights into how designers experience genAI adoption within their workflows. The findings revealed that affective responses were more frequently expressed when designers discussed genAI's practical implications, particularly regarding output generation and process integration. However, the results also highlighted a dual perception of genAI—an enabler and a hinderer—provoking contrasting affective reactions. This duality is best captured by distinguishing the affective responses between emotions and feelings, illustrating a tension between short-term practical adoption and long-term professional uncertainty. In light of these findings, we advocate for fostering AI literacy encompassing greater affective awareness among designers through targeted educational practices for two main reasons. First, such awareness can better equip designers to integrate genAI into their practice, enabling them to critically shape their evolving professional roles rather than passively adapting to technological changes. Second, it bridges the two trajectories of AI— as design material and as support for the design process—by informing the design of AI-infused product systems, enabling designers to anticipate users' immediate emotional responses and their evolving relationship with these systems over time. Ultimately, Affective AI literacy emerges as a core competency for human-centred design

education, empowering designers to engage with AI as a functional tool and as a transformative force that shapes user experience and emotional well-being.

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