EPISTEMIC FLUX: CREATIVE PROFESSIONALS, IDENTITY AND THE EQUIVOCALITY OF GENAI

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ABSTRACT

The advent of generative AI (GenAI) threatens professionals' identities with unparalleled disruption and instability. Previously immune to change brought by incumbent digital technologies, professionals must contend with GenAI's equivocal and ubiquitous nature. Our research draws on the accounts of fifty-six professional designers sampled for the direct impact of GenAI on their profession. We establish the *paradigm of designers'* professional identity, and observe GenAI fracture their locus of problem-solving. A break that challenges designers' creative expertise, dilutes their distinctiveness, and competes with their problem-solving capability. This fracture alters the attachment designers ascribe to their creative output when it comes from GenAI. We contribute to the identity landscape by suggesting that extant identity coping mechanisms do not accommodate the equivocal and ubiquitous nature of GenAI. The instability and disruption to designers' professional identity brought by GenAI illuminate the unique tensions and blurred behaviours of designers in a state of *epistemic flux*.

Keywords: professional identity, generative AI, designers, threat response, epistemic flux, proximity of expertise.

INTRODUCTION

Professionals' knowledge and expertise afford them an elevated social status (Larson, 1979). A status reflected in and reflective of their professional identity—constructed through extensive education, training, and socialisation (Pratt et al., 2006). Identities are inextricably linked with change (Heath & Heath, 2010). Thus, as robust as an individual might perceive their professional identity, change brings inherent uncertainty. The literature charts a vulnerability to identities from the uncertainty and disruption of change brought by individuals, others or the material world (Jussupow et al., 2018). Identities are threatened when uncertainty and disruption of experiences are perceived to harm their meaning (Petriglieri, 2011), are devalued (Steele et al., 2022), or have their distinctiveness obscured (Ahuja, 2023). The disruption to professionals' identities can be triggered by career transitions (Ibarra, 1999), career growth (Ibarra & Obodaru, 2016), inter-professional collaborations (Ahuja, 2023), threatened knowledge (Anthony, 2021) and technological change (Nelson & Irwin, 2014).

Disruption is broadly categorised as 'challenges, which are events perceived as having positive consequences, or threats, defined as events perceived as having negative consequences' (Beaudry & Pinsonneault, 2005, p. 495). Professionals enact coping mechanisms in response to the uncertainty and disruption from change. Petriglieri (2011) describes a process that results in individuals 'identity-protecting' or 'identity-restructuring', akin to Brown and Coupland's (2015) 'reidentification to desired identities'. Ahuja (2023) identifies professionals fitting into one of two conditions, 'highlighting identity distinctions' and 'modifying identity and practices', similar to 'optimal distinctiveness' and 'persistent execution' (Vaast & Pinsonneault, 2021). Professionals can navigate the uncertainty and disruption from change with an 'adaption repertoire' of 'provisional selves' (Ibarra, 1999) and an interplay of 'work and identity learning cycles' (Pratt et al., 2006).

Extant models of identity construction, adaption, transitioning, restructuring, and coping mechanisms for identity threats have proven effective. The array supports the idea that there is no 'one size fits all model', but there is an inherent assumption with them that their 'off the shelf' models will work and individuals—consciously or not—know which to pick and how to navigate them—with little flexibility for plotting their course. We suggest that the inflexible nature inferred in exemplary identity models might be influenced by when data was collected concerning the 'point of disruption' (i.e., when the uncertainty is triggered). For example, theoretical literature with no primary empirical data is produced 'retrospectively' to points of

disruption using a hermeneutic method with extant literature (e.g., Petriglieri, 2011). Certain empirical literature consists of material collected before, after, or on both sides of the disruption (e.g., before shedding their identity prior to career transitioning, Ibarra, 1999). At the same time, others collect data when the disruption is ongoing (e.g., professional identity construction and customisation (Pratt et al., 2006)).

Turning our attention to identity literature on technological change—where our research interests lie—we see temporal differences in where data is captured and analysed. Nelson and Irwin's (2014) longitudinal study of the impact of the advent of online search on librarians' identities was captured at the point of disruption. However, it was analysed after the disruption using the available archive material. Vaast and Pinsonneault's (2021) longitudinal study uses primary data from interviews understood to have been conducted six years after the point of disruption—when the Data Scientists profession emerged. This was combined with secondary online data captured at the disruption point but analysed retrospectively. Similarly, Strich et al.'s (2021) investigation of technological change uses primary data. However, the disruption is understood to have occurred two years before the interviews when the latest update was made to the technology. Therefore, data was not captured close to the point of disruption. Of the identity and technological innovation literature in this review, only Lifshitz-Assaf's (2018) account of implementing an open innovation model at NASA uses data collected in real-time at the point of disruption—as open innovation was implemented.

The identified inflexibility in specific models and temporal considerations for data capture of technological change focussed our attention on what is anticipated to be a once-in-generation technology. Where the printing press, personal computer, and internet once came, conquered, and transformed industries—artificial intelligence (AI) is powering the Fourth Industrial Revolution (World Economic Forum, 2022) and changing what we do, how we do it and who we are (United Nations, 2023). AI can perform functions such as problem-solving, decision-making, and creativity (Rai et al., 2019). Hence, the change brought by AI is unprecedented in scale, speed, and competency—reflected by Mollick (2023), who asserts that 'whatever AI you are using right now is going to be the worst AI you will ever use' (p. 61).

Malleable to technological change, professional identity is threatened by AI (Strich et al., 2021). Threats drawn into sharper focus with the latest development in AI, generative AI (GenAI). GenAI, with the cognitive capabilities to mimic and substitute professionals' knowledge and expertise, has the potential to be more disruptive to professionals who previously felt immune to automation

(McKinsey, 2023). Unlike incumbent AI, GenAI is equivocal (Weick, 2020), capable of learning and developing an autonomous agency that can replace professionals' expertise (Scarborough et al., 2024). GenAI not only analyses and makes recommendations from data but also has increasing competency to autonomously problem solve and generate ideas—the primary weapon of many professions (Scott, 2008). Furthermore, ideas are *new* and (arguably) *useful*—notably, they mimic the core tenets of creativity (Amabile, 1996). Moreover, GenAI is ubiquitous and accessible to everyone. Thus, unlike past technological advances, GenAI opens the domain with its 'broad and nontechnical appeal' (Grimes et al., 2023, p. 1617).

Although scholarly interest in GenAI is erupting, attention leans towards healthcare, finance, and legal. Research combining GenAI and creativity is scarce, with most attention focused on productivity and creative quality and output (e.g., Jia et al., 2024). The human impact of GenAI is often overlooked. Thus, we departed from the extant literature to understand how GenAI affects designers' professional identity and knowledge boundaries. A domain where the identity of its workforce underscores 'what people do creatively is intimately related to who they are' (Townley et al., 2009, p. 953). We interviewed fifty-six professional designers whose core function is problem-solving—generating new ideas and content in response to client briefs.

In our study, we establish the core constructs of designers' professional identity, observe the fracturing locus of problem-solving, and find that designers' coping mechanisms to GenAI do not fit extant models. Instead, we see blended and blurred responses full of tension. The impact of GenAI's unparalleled ubiquity and equivocality creates a coping condition we notionally describe as *epistemic flux*. Further, we find the disruption at a human-GenAI level permeates professional designers' knowledge boundaries—purposefully built to attain expert distinctiveness (Gieryn, 1983)—extending to trigger human-human disruption between designers and other creative disciplines. Beyond that, we observe the disruption at an industry level, blurring boundaries between professional designers and non-professionals. These tensions and contradictions towards GenAI's use are suggested to be influenced by a boundary condition we provisional call *proximity of expertise*. Moreover, this transformation from an individual to an industry level leads us to assert that GenAI is the *agent of change* in the design industries of the twenty-first century.

THEORETICAL BACKGROUND

From the foundational work of Mead (1934), a burgeoning corpus of literature is grounded on the assumption that the sense of self and identity are structures built and sustained through social experience—symbolic and reflexive in character. Our identities help us navigate the many varied interactions in a sea deep in social meaning (Burke & Reitze, 1981).

Professional identity and identity threats

Owing to their perceived skill and distinctive knowledge (Larson, 1979), professionals (e.g., lawyers and engineers) are afforded an elevated social recognition and status than non-professionals, with professionals attaining and sustaining their social status through respectable knowledge work. Professional identity describes the self-definition and enactment of individuals in their professional roles (Ibarra, 1999). It is constructed through a symmetry of identity and work practices, revealing the 'importance of the relationship between 'doing' and 'being' among professionals' (Pratt et al., 2006, p. 255). In short, what people do is intrinsically linked to who they are. Threats are 'experiences appraised as indicating potential harm to the value, meanings, or enactment of an identity' (Petriglieri, 2011, p. 644) and can come from 'individuals, others or the material world' (Jussupow et al., 2018). Professional identity is threatened when individuals perceive their role, expertise or status as 'devalued, marginalised or discriminated against' (Steele et al., 2002, p. 417) or by 'obscuring knowledge distinctiveness' (Ahuja, 2023, p. 429). Disruption threatens identities when an individual's ideas about 'who they were' no longer align with 'what they do' (Pratt et al., 2006). As such, much research has centred on career transitions for observing change to professional.

Identity construction, coping mechanisms and adaption

We identified, reviewed, and compared the work of significant voices in the field relevant to our study. Three concepts of interest surfaced—*identity construction*, *identity threat coping* and *identity adaption*.

Identity construction and reidentification: Pratt et al.'s (2006) Work and Identity Learning Cycles show how individuals construct and customise their professional identities. They describe medical residents who see themselves as professionals affecting dramatic change in disease control. Work-integrity identity violations were detected when the residents felt that their identity no longer matched what they did. This triggered a process of identity

customisation and external validation. Relatedly, professional athletes, threatened by career and performance-limiting injuries, re-identify to *desired identities* (Brown & Coupland, 2015).

Coping with identity threats: Petriglieri (2011) provides a theoretical model of the identity threat process that illustrates a process where a blend of an individual's identity and experience informs two appraisals of the threat: first, the salience of the threat and second, how to respond. Responses are grouped as *identity-protecting* or *identity-restructuring* that lead to maintaining or eliminating the threat. One possible limitation of the model is an inflexibility to threats that trigger responses that do not fit within the framing or prescribed pathways. The paper refers to the temporality of identity management and response, noting that 'to maintain a sense of continuity over time […] individuals need to balance their need to preserve identity stability with their need to sustain identity dynamism' (p. 642). What would be of value is how time might affect appraisals, threat responses or outcomes in the model. There is an inherent assumption that individuals—consciously or not—will pick and then stick to a discreet path—allowing for limited crossover within one response—and complete all stages of the process.

Identity adaption: Building on Markus & Nurius' (1986) concept of *possible selves*, Ibarra (1999) outlines an adaption process for professionals in career or role, contributing *provisional selves*—where, during role transitions, individuals shed their incumbent identity and experiment by creating provisional identities that are trialled and validated until ready for use. Relatedly, architects, threatened by inter-professional collaborations, distanced themselves from work and opportunities that did not align with their professional identity, responding by *highlighting identity distinctions* and *modifying identity and practices* (Ahuja, 2023).

Digital technologies, identity and threats

Digital technologies are augmenting and increasingly becoming autonomous in the professional environment, with professionals using technological innovation to redefine and adapt their professional identities (Lifshitz-Assaf, 2018; Nelson & Irwin, 2014). Vaast and Pinsonneault (2021) demonstrate the role of digital technologies in enabling and threatening professional identities, with professionals engaging in identity work through a lifecycle because their occupation is 'jointly and repeatedly enabled, shaped, and threatened by digital technologies' (p. 1088). The lifecycle constitutes three discreet stages of identity work with periods of change between. They highlight how the *generativity* and *convergence* of digital technology 'simultaneously enables and threatens their occupational identity' (p. 1087). They focus on Data Scientists as an emerging profession and how they repeatedly cycle through the two tensions of

identity *similarity/distinctiveness* and *persistence/obsolescence* to construct and calibrate their identity. The speed of technological changes is mapped—showing three phases—over six years. This is notable because data was captured after the disruption. Further, albeit only three years since the article was published, technological change can now be measured in days.

Lifshitz-Assaf's (2018) account of implementing open innovation at NASA is an exemplary study that posits identity work as critical to understanding the forces behind knowledge boundaries and the impact of technological change. She finds the professionals most open to change and re-identify from *problem-solvers* to *solution-seekers*. Open innovation technologies act as digital portals to non-expert domains, lowering boundary divides to enable non-professionals to enter the regulated and expert domains to drive innovation. However, open innovation technologies are only a gateway. The technology cannot perform the expert tasks of professionals the portal opens to.

Nelson and Irwin's (2014) longitudinal study of librarians' identities with the advent of internet search. They harnessed archived journal data depicting their relationship with technology and their transforming professional identity through a four-phase process from *masters of search* to *connectors of people and information*. However, the paper provides little on how librarians managed the transitions between phases. They detail how technological changes affect the human-technology relationship but do not discuss the technology's broader impact on the relationships (e.g., between librarian and librarian or between librarian and other stakeholders).

Artificial intelligence threats

The implementation of AI is daunting (Ransbotham, 2017), but without successful implementation, AI systems will 'fail to deliver their promise' (Mehri, 2023, p. 2). The arrival of AI 'introduces new threats to the authority of professionals […] whose expertise, judgment and creativity have thus far been highly valued and considered irreplaceable' (Benbya et al., 2020, p. XV). Anthony's (2018) theoretical model of encounters with AI technologies—also referred to as epistemic technologies because of their critical role in knowledge generation—consists of *questioning practices* and *accepting practices*. An individual's status saliently influences the two practices—underscoring the relationship between status and identity. In short, she finds that experts question epistemic technologies while non-experts accept them.

The *black-boxing* of technology describes a lack of transparency to the user by epistemic technologies. Therefore, black-boxing threatens professionals' expertise and, with it, their identity. Opaque technologies offer no way of knowing *how* or *why* the technology reaches the outcome it

does. Thus, the opacity of technology poses a direct risk to expertise (Faraj et al., 2018). Moreover, 'problems establishing an understanding across diverse bases of expertise and being open to alternative viewpoints are exacerbated when the reasoning behind them is inaccessible' (Lebovitz et al., 2022, p. 2). In other words, the less we know how technology works, the less open we are to working with others and differing opinions. This position is compounded even further when people learn that epistemic technology is imperfect, resulting in its failed use (Dietvorst et al., 2018).

EMPIRICAL CONTEXT

The creative industries are built on their workforce's individual and highly skilled expertise (Jeffcutt & Pratt, 2002). Their professional knowledge is 'localised, embedded, and invested in practice' (Carlile, 2002, p. 543). Creative professionals are archetypal knowledge workers, 'highly qualified individuals doing knowledge-based work, using intellectual and symbolic skills' (Alvesson, 2004, p. 21), such as the use of ideas and concepts that are critical to 'sparking innovation and growth' (Davenport, 2005, p. 3) and vital to value creation (Muzio, 2019). Furthermore, *creative* and *analytical thinking* are reported as the skills of most significance over the next five years, and *design* is also in the top twenty (World Economic Forum, 2023),

Problem-solving, idea generation and ownership

Problem-solving is the 'process through which teams identify an idea to develop and in doing so gather, share and evaluate information such that a solution can be moved forward (Gilson, 2015, p. 64). Professional designers are distinguished for their ability to generate original work. Their livelihoods, identities, and ideas are closely intertwined (Toivonen et al., 2023). Ideas are generated as solutions in response to problems—the primary weapon of many professions (Scott, 2008). Hence, problem-solving occurs when a problem is new and the solution is unknown (March & Simon, 1958).

Just like material possessions—ideas are inherent to an individual's extended self and, as such, are a 'major contributor to and reflection of our identity' (Belk, 1988, p. 139). In short, our are part of our identity and reflect our values and beliefs, leading to psychological ownership (Grimes, 2018) that can be 'felt toward non-physical entities such as ideas' (Pierce et al., 2003, p. 4). Furthermore, although written a decade before Pratt et al. (2006) posited their foundational work on professional identity construction, Belk (1988) connects ideas with an individual's

capabilities for doing and being and, in doing so, theoretically joining the dots between ideas and identity—strengthening the stance on interwoven ideas and identities (Grimes, 2018).

Generative AI

Introducing his seminal publication on creative problem-solving, Osborn (1953) confidently asserts that 'it still seems certain that no machine will ever be capable of the generation of ideas' (p. 1). Seventy years later, the debate has moved on, with AI recognised as enabling functions 'previously only associated with human minds' (Krakowski et al., 2023, p. 1426). This knowledge (epistemic) work was once the exclusive skill of humans (Amabile, 2020), including functions such as problem-solving, decision-making, and creativity (Rai et al., 2019).

With one of the most significant contributions to computer science in recent history, Goodfellow et al. (2014) contributed generative adversarial nets (GAN). This new generative estimation procedure leap-frogged all previous generative models. Their model laid the foundations for GenAI, the technology powering GenAI agents, such as ChatGPT-4, MidJourney, and Sora. Unlike previous versions of AI that focused on intelligently performing specific tasks, GenAI AI creates something new (Forbes, 2023) and arguably useful. As such, GenAI is positioned as being creative (OpenAI, 2023) and designed to generate new high-quality text, images, and other content (IBM, 2023). Therefore, mimicking the core tenets of creativity is *new* and *useful* (Amabile, 1996). GenAI is *equivocal*, which refers to emerging technologies and experiences with pluralistic and sometimes contested meanings (Weick, 2020). The equivocality increases with AI's ability to develop agency, replacing professionals' expertise (Scarborough et al., 2024).

GenAI has already been established in common parlance and attracted significant attention, topping scholarly, policy, and news agendas. Remarkably, for all the fixation, it is still in its infancy as an emerging technology. Thus, research is light, with most interest in its creative capability and novelty of output (e.g., Boussioux et al., 2024). The human impact of GenAI's equivocal and ubiquitous competency is overlooked. Given that GenAI agents now mimic creatives' expertise and problem-solving capabilities, we argue that the nexus of these two super phenomena (GenAI and creativity) warrants closer attention.

Research setting

Technology is a critical factor for change in the creative industries—change that triggers the creative industries to 'recreate' or 'transform' (Jones et al., 2015). Principals align with identity threat coping response (e.g., Petriglieri, 2011). Some argue that AI will replace human creativity

altogether, while others claim creativity is 'genuinely human and thus cannot be replaced' (Griebel et al., 2020, p. 1). Technology has long been part of the creative process, from Leonardo's paint and canvas to Pasteur's microscope and beaker (Shneiderman, 2000), to support creatives' realise and enhance their work. However, the creative industries workforce is argued to face a direct and unprecedented impact from GenAI agents compared to incumbent AI creativity support tools. GenAI is anticipated to strike at the heart of the creative industries workforce—threatening the 'exclusive privileges of the profession' (Faulconbridge et al., 2021, p. 5). Increasingly recommended for use on more exploratory tasks, such as problem-solving (Raisch & Fomina, 2024), GenAI creates a dynamic tension with designers who are highly susceptible to the equivocal competencies of GenAI, having previously felt immune to automation, like other professions (McKinsey, 2023). Thus, consistent with our research objective, we illuminate where creative professionals and GenAI interact, asking how GenAI affects designers' professional identity and knowledge boundaries in the creative industries.

The creative industries' global scale and geographical uniqueness focused our attention on the United Kingdom, where the creative industries are at the 'heart of the nation's competitive advantage', equating to circa two million jobs (DCMS, 2018). This specialised and highly skilled sector stems from individual expertise (Jeffcutt & Pratt, 2002). It is split into expert domains (sectors) that include but are not limited to, design, architecture, film, music and craft (Deloitte, 2022). The breadth of the UK's creative industries required a narrower focus. The lead author's professional experience working in the UK creative industries for a decade and a half—from designer to creative director—was a determining factor in the UK design sector being chosen for exploration. This includes design disciplines such as graphics, brand identity, motion, user experience, digital product, and service, whose design workforce, unless expressly stated, will be collectively called designers from here on.

RESEARCH METHODOLOGY

Participant selection

We purposefully recruited designers responsible for problem-solving in response to briefs[1]. These were identified using the lead author's professional contacts, with additional informants identified and screened using online platforms (LinkedIn and Adobe's Behance) where professional designers have a digital presence. A snowballing procedure was then used to

[1] All informants were offered a gift voucher

recruit additional participants (Zimmerman, 1977), wherein informants were asked to recommend individuals who may best support our line of enquiry, specifically from those representing the research domain with rich, perceptive accounts (Alvesson, 2011).

Data collection

A total of sixty-four semi-structured in-depth interviews were conducted online and recorded using Zoom and Otter. For consistency (Corley & Gioia, 2004), the lead author conducted all interviews as the 'key instrument' (Creswell, 2007). His extant knowledge of the practice and discourse of the domain allowed the author to win informants' trust and be less obtrusive (Orr, 1996). A semi-structured interview protocol consisting of 'how' questions was employed—of salience to the research because they are 'concerned with describing and explaining the temporal sequence of events that unfold' (Van de Ven & Huber, 1990, p. 213). Our interviews were conducted between late November 2023 and March 2024. Interviews averaged 80 minutes, with transcripts ranging from 7,000 to 12,500 words, produced verbatim. The interview protocol was refined throughout to reflect identified themes for a more comprehensive understanding.

Of the sixty-four interviews, six were removed for not fulfilling the inclusion criteria of the target population (Robinson, 2014); one because the informants' current role at the time meant they were not generating work in the UK design industries, and the remaining five because their role, albeit active in the UK design industries, did not align with our criteria of generating or directing ideas and concepts in response to briefs. The final sample included in-depth interviews with 56 informants—with two informants interviewed twice—the total number of interviews was 58. Nineteen females and thirty-seven males constituted this. Notably, with 34% of our sample being female, it is more than representative of the disproportionately male UK design industry, with only 23% of designers identifying as female (Design Council, 2022). The informants ranged from Junior Designers to Executive Creative Directors with professional tenures averaging 17 years. The heterogeneity of the final sample was chosen to help discover data that are not constrained to a particular group. The employment type of our sample included founder/owners, in-house, freelance, and agency-side roles across graphic, digital product, motion, and service/experience design.

Data analysis

In keeping with the interpretive nature of our research, the data was analysed using an inductive, grounded theorising approach (Gioia et al., 2012; Glaser & Strauss, 1967). Consistent with

related work on equivocal technologies (Scarborough et al., 2024), this reflexive approach was followed with close attention paid to the trustworthiness of interpretations (Pratt et al., 2019). Our aim, ultimately, was to develop a theoretical explanation by specifying phenomena in terms of conditions that give rise to them, how they are expressed through action, consequences arising from them and combinations of these (Corbin & Strauss, 1990). The iterative analysis meant moving between transcripts, emerging themes, and theory (Pratt et al., 2006; Locke, 2001; Isabella, 1990). Coding and analysis were conducted using Nvivo software, following three established steps. These are illustrated in the data structure diagram (Gioia et al., 2012), which shows first-order codes, second-order themes, and aggregate dimensions (Figure 1).

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The process started with open coding, identifying anything aligned, misaligned, contradictory, or surprising related to research questions (Gioia et al., 2012). This initial stage involved assigning thematic codes to informants' statements. Where possible, *in vivo* codes were used to emphasise the participants' spoken words (Manning, 2017), and a short descriptive phase was used for all others (Corley & Gioia, 2004). The open codes were thematically aggregated to 'symbolically assign a summative, salient, essence-capturing and/or evocative attribute' to it (Saldaña, 2009, p. 3), resulting in a set of first-order codes. The second step involved axial coding (Corbin & Strauss, 1990), moving from an inductive to a process of abductive coding.

First-order codes were consolidated, working back and forth between transcript, emerging themes and theory (e.g., sensemaking, professional identity and identity threats). The categories became more theoretical and abstract throughout the consolidation, producing a set of second-order themes (Pratt et al., 2006). The final step involved the relational categorising of second-order codes into four 'core' aggregate dimensions. With dimensions surfacing, the data's suitability of fit was checked with the emergent theoretical understanding (Pratt et al., 2006; Glaser & Strauss, 1967). The data supporting our interpretations is presented in Table 1.

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FINDINGS

In this section, we present four distinct yet interrelated findings. First, we establish the paradigm of designers' professional identity. Second, we observe the *fractured locus problem-solving*.

Third, we discuss designers' *coping and response mechanisms,* and last, we illustrate how the impact of the disruption and the coping mechanisms is responsible for *blurred boundaries.*

Paradigm of designers' professional identity

> *Creativity […] that's the DNA. That's what gets me up. You know, I am, first of all, I'm a designer. I've spent years designing and creating. I love it […] literally comes from in here [the heart] (Informant 53).*

Designers live and breathe design. They are first and foremost designers; even when not practising design, they are inherently creative. 'I mean, for me, it's just been my lifeblood. Really, it's like it's almost like breathing' (Informant 32). This highlights a deep connection with their creativity through their design practice and experience. With another remarking that 'every idea is effectively the end product of 39 years' worth of experiences' (Informant 37)—implicitly noting that the experience they draw on extends beyond their career boundary.

Definitions of creativity convene around the notion of problem-solving through the creation of new and substantive ideas. Having determined what creativity means to designers, they are clear that creativity is highly significant in their role and is 'vastly important for any designer […] that needs to be the heart. That should be the heart of what we do' (Informant 22). When applied in a commercial setting, creativity is seen as 'a superpower to be able to problem solve' (Informant 59). Creativity is also an important motivating factor for designers to identify and solve a problem, ensuring that what they do goes beyond the aesthetic. They are masters of their craft. They always strive for the highest visual standards—to deliver something not just aesthetically stunning—but also of substance and meaning:

> *[I am] always trying to make it meaningful because I think when people sort of understand something, it makes it so much more impactful (Informant 10).*

This drive for meaning is a recurring narrative and motivating factor designers seek out in every project and deliverable. They bring expert skills to find the distinctive thread:

> *Unless you've got that story that ties everything together, it's just marks on a page, the most beautiful graphic design in the world. But unless it's got a solid story and meaning [… it's not interesting to me at all (Informant 23).*

Designers describe their distinctiveness in individual ways. As one designer put it, 'distinctiveness comes from everything I've learned, everybody I've worked for and worked with' (Informant 05). However, themes connect designers' perceived distinctiveness, such as an 'ability to make connections that maybe other people don't' (Informant 04), being able to

interrogate a brief and, if needed, challenge the client, then work with them to find the 'true' problem and deliver the solution needed, not necessarily the one asked for to provide because they know to spend 'more time diving into what the problem is […] and what the actual real problem behind the problem is' (Informant 61).

In line with this, designers discuss an ability to 'really dig in, do the research, learn about a new space that you've never really come across' (Informant 25), which leads to them unearthing a real 'nugget' (Informant 58) of an idea. Coupled with creative problem-solving, designers place a strong emphasis on their ability to navigate the uncertainty at the core of the creative process:

> *It requires me to be able to really be comfortable in ambiguity […] helping our clients in the business navigate that ambiguity, and we're trying to be the sort of like be a guiding light for them (Informant 38).*

As they start to problem solve and generate ideas, designers acknowledge that they often express themselves in the work they produce 'I kind of put my identity into there. It's like, of course, it's not in obvious ways' (Informant 48). What designers are striving for with their ideas is the satisfaction of having them externally validated for successfully solving a problem 'I think it's probably one of the reasons why I love doing what I do because […] when somebody else is like, "oh, this is great. This nails what we want" like that's that reward' (Informant 55). Furthermore, designers almost all align in attributing pride and attachment to their work:

> *It's all a sensation of giving birth to an idea. I think that's what gives it attachment and ownership (Informant 17).*

Our inferences from the literature were confirmed and expanded by interviews with the designers, enabling us to establish their professional identity as a fusion of three previously related yet independent constructs (Figure 2). Problem-solving is inherent to designers' creative expertise (Townley et al., 2009), creative expertise is intrinsic to designers' distinctiveness (Gieryn, 1983), and designers' distinctiveness is interwoven with problem-solving idea generation (Toivonen et al., 2023). Thus, we find that designers' professional identity constitutes the enactment and self-definition of their role—they are what they do. Moreover, these three constructs reinforce each other, deepening designers' expertise, elevating their status and distinctiveness, and mastering their problem-solving and idea generation, which confirm and strengthen their professional identity.

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Fractured locus of problem-solving

GenAI is widely seen as another tool, notably positioned as 'just another tool that got used […] it's another thing, rather than the thing' (Informant 43) and as 'another tool, rather than something that's going to replace that human being'(Informant 09). Building on treating GenAI as another tool, designers speak of it like 'an intern or a junior. You know, where you get like discrete tasks, and then you have to use your experience and judgement to evaluate if the job has been done well enough' (Informant 62). Thus, as with all new relationships, designers must establish and maintain a relationship with GenAI. As with any new human team member or collaborator, designers need to be acquainted with and learn how to work with it, understand its strengths, and get the most out of it. One designer acknowledges GenAI's competency to continue to rise and 'to drive progress towards a solution […] you can only see that dependency on that is going to change (Informant 52). The majority of designers predict the unavoidable necessity of learning and using GenAI. 'It's a case of, rather than get replaced, learning how to work with it and how to incorporate it within my role. It's the 21st-century learning' (Informant 37). The consequence of ignoring it is summed up with this statement:

> *Embrace it or rot (Informant 01).*

Hand-in-hand with the expressed need to get on board and use it is a widely echoed belief that 'it's only as good as the prompt you'd give, it it's only as good as the operator' (Informant 17). Just as we described GenAI downplayed by designers as another tool, this framing of GenAI by designers as only being as good as the user is inferred in two ways. First, designers seek to distinguish their use of it from that of non-design professionals. Second, they seek to reassure themselves that it does not have the autonomous capability to perform the task without them.

We find designers' responses to GenAI falling on a continuum. At one, where a few designers shield under a belief in their irreplaceable expertise and distinctiveness, expressing little to no interest in building it to their workflow, 'I'm not sold on that kind of thing yet' (Informant 26). On the other end, designers actively seek opportunities to increase the use of GenAI in their workflow because 'there's a new relationship that needs to happen, and they are going to have to embrace that' (Informant 17).

In transferring problem-solving from the human agent (designer) to the digital agent (GenAI), we observed the locus of problem-solving fracturing. It physically moves from inherent within the designer to external with GenAI (Figure 3). Designers are contending with problem-solving now being accessible inherently and externally—and on a continuum between the two. Interviews also allowed us to infer that the fractured locus directly affects the psychological

ownership designers attribute to GenAI content. Thus, the assumed 'extension of self' (Belk, 1988) between designers' problem-solving ideas (what they do) and their identity (who they are) is disrupted by GenAI. As a result—recalling problem-solving occurs when a problem is new and the solution unknown (March & Simon, 1958), and designers are professional problem solvers with an inherent resilience to withstand the ambiguity of change (Metzl & Malissa, 2008), must turn their inherent problem-solving on themselves.

– - – - – Insert Figure 3 about here – - – - –

Responding to identity threats

Threats to problem-solving: As we continue to describe designer coping mechanisms to GenAI, it is essential to make a distinction at this point because the designers make it. GenAI can generate different output types, such as text, image, video and audio. We notice designers' responses differ depending on what GenAI is used for and where it is used. When GenAI is discussed as being used for down-the-line production tasks and repetitive work, designers are happy that 'the sort of more monotonous stuff becomes just done by the computer' (Informant 57). Emphasising a keenness to harness it to 'help with mundane processes [that] get in the way of creativity' (Informant 21)

A generative capability is built into Adobe's latest software products. This is widely accepted and seen as effective in supporting designers' practice, 'the image stuff in Photoshop right now is certainly brilliant for me, and it's saving me a lot of time' (Informant 19). Designers are more comfortable using GenAI in the workflow of a final deliverable. To aid the process—rather than being the process because 'it's within my control, […] it's not taking all of the control […] it's a tool within a process rather than the process itself' (Informant 16).

When the proximity of GenAI's use nears designers' inherent problem-solving and idea generation of their expert domain, sentiments change:

> *If I ever felt like I was dependent on something to come up with the idea I would probably stop doing what I'm doing […] if ever felt like I was getting to the solution by through a series of prompts, and letting something else solve the problem for me the sort of fun of the game has gone (Informant 21).*

We also learned that designers question GenAI's competency, especially its creative capability. 'I don't think currently what I do is replaceable' (Informant 23). Also, they generally distance themselves from it regarding their self-identified distinctive qualities by digging deep for an

idea and questioning 'whether something that can kind of constantly generate quite quickly whether it's ever going to get to that depth' (Informant 02).

Threats to expertise: Fundamental to designers' problem-solving is expertise in generating ideas and solutions that they hand over to clients—whether internal or external. We find that the equivocality and epistemic nature of GenAI threaten this. First, most designers admit to a lack of awareness of GenAI's current capability 'because I don't think I'm doing enough' (Informant 54), with some acknowledging 'probably haven't used it for about six months' (Informant 43). Surprising findings given the speed of change and capability with GenAI, something designers are also aware of 'I feel like it changes so much. I can't keep up with anything of it' (Informant 55).

Designers attain and sustain their creative expertise through their creative process by understanding the decisions made in the creative process. This gives them the confidence to share and discuss output with stakeholders because they know the decisions as to why the output is the way it is. When the decision-making is 'black-boxed', the process is truncated and hidden, unnerving designers and raising concerns about the process and the provenance of the data used. Aligning with Anthony (2021), the opacity of the technology causes experts to question the trustworthiness of the technology 'my fear of generative AI is that you don't understand the process. You don't understand the end. You don't understand the AI's intellectual process of getting to those results' (Informant 16). Another consequence of GenAI increasing autonomy over the problem-solving process is that 'it can make you lazy because it does skip out a lot of the like deeper thinking sometimes, especially if you're on a tight timescale' (Informant 57).

Threats to Distinctiveness: A lack of transparency raises questions of trust and authenticity in designers' thoughts towards their output using GenAI. Designers express a deep sense of pride and attachment to the ideas they generate. However, this changes when GenAI is introduced to the workflow for their inherent problem-solving. This directly impacts their thoughts towards it because 'I'll be less attached to it because it wouldn't feel like mine' (Informant 3). This shows that the greater the autonomy given to GenAI to problem-solve, the meaning designers attribute to it diminishes:

> *Nothing to do with me. Went into a box and it [GenAI] did something clever, and it came out. I can't take any credit, I can't take any credit for sticking the words at the beginning (Informant 42)*

GenAI disrupts designers' legitimacy and distinctiveness as they struggle with how using it makes them feel—especially when they relinquish creative autonomy to GenAI. This feeling

exacerbates the concerns of designers about how non-design professionals will perceive them. Unlike highly recognised institutional sectors like finance, healthcare and law, design expertise is not regulated, is easy to replicate and is subjective to evaluate, meaning 'there are some schools of thought that like Oh, it's you know, it must be easy being a designer just colouring all day or whatever' (Informant 55). Designers feel they have unduly had to defend their creative and financial worth. A position compounded by GenAI has 'opened up a world of people who aren't as creative to be able to use […] and, that's great. But it'' not original. It doesn't feel original because a lot of it is a self-perpetuating cycle (Informant 59).

Moreover, the ubiquity of GenAI means anyone with a computer could use GenAI for problem-solving and idea generation.

> *People consider design to almost be a low bar. Just because somebody can paint the wall and match curtains to it, they think that they have an eye for design (Informant 17).*

This concisely reflects the widespread concerns of designers, with clients already questioning designers' value. 'We're having clients come to us say, oh, actually, we don't need you guys to do animation because we can do this with, you know, that this tool will do the voiceover, you know, with this, you know, this AI tool instead' (Informant 46). This is leading to a swelling of non-professional designers, increasing the disruption to their distinctiveness—reflected by Nelson et al. (2023), who asserted that the spread of digital technology in the music industry was linked to a lowering of the bar to occupational membership, thus strengthening the imperative to distinguish oneself. In response, a prevailing theme in what designers believe sets them apart from GenAI is their humanity:

> *I think that [problem-solving] is the crux of what makes the human like creative, and I don't believe that AI or ChatGPT is our level yet where it can like think in that way because it's just you know, it's just sort of regurgitating like, everything in the world (Informant 55).*

A view expressed in different ways, but the underlying sentiment is the same: 'I don't believe that ideas from a computer could be just be me like being like a creative. I don't believe they have that that human empathy' (Informant 17). Designers also believe their human qualities allow them the unique—human—privilege to establish relationships and communicate with clients on a human level. It is essential in the creative process for designers to fulfil a distinct attribute of their role to dig deeper and ask questions to find the True problem:

> *Between the cracks of the conversation, read between the lines, listen, and understand those kinds of things are not currently achievable by AI (Informant 01).*

Pluralism and contradiction: The fracturing of designers' locus of problem-solving disrupts the established assumptions of their professional identity. Designers present pluralistic and unpredictable responses to GenAI. Unlike assumptions of incumbent identity response models (e.g., Petriglieri, 2011), we find designers simultaneously exhibiting identity protection and restructuring traits. For example, one designer adopts identity-protection practices when they attempt to discredit GenAI's creative capability by highlighting the positive-distinctiveness of their human approach when they assert:

> *I don't necessarily think it's creative in the sense that a human is creative […]; it's pulling from other people's experiences or other things that have been added on the internet. So, human creativity is different to AI creativity (Informant 14).*

The same designer also exhibits identity restructuring by anticipating their role changes,

> *From being the creative person to being a project manager (Informant 14).*

A further example of a designer blending their responses to threats arose while discussing their understanding of how GenAI work—simultaneously protecting their identity while anticipating the exit. Initially, they sought to discredit GenAI's creativity when they commented that it:

> *Spat out absolute hot garbage [and] regurgitate and repackage stuff (Informant 41).*

However, even after these disparaging, discrediting remarks that downplay the threat, the same designer continues discussing identity restructuring to use GenAI because:

> *[I] don't see how I can't in the future […] responses will get better and better and better and better every single time we use them to the point of our own redundancy. I'm pretty sure (Informant 41).*

Boundaries blurring

The turbulence triggered by GenAI fracturing the locus of problem-solving extends beyond the boundary of the designer-GenAI relationship. At an individual level, the consequences permeate the human-human relationship, impacting the relationship between designers and other creative professionals (e.g., a designer with a copywriter). What is most revealing is how the once sacrosanct task of the designers' role and inherent problem-solving identity is now 'wholesale'—open to anyone. The hard-fought and established boundaries (Gieryn, 1983) are defined by practices readily shared between actors of the same community that are difficult to

share with actors from a different community (Waardenburg et al., 2022) are blurring and arguably increasingly ambiguous as GenAI grows in competency and ubiquity.

Designers are beginning to question the future of their role, with some predicting they 'will be irrelevant in two years or less, maybe except for tiny niche pockets of craftsmen who people employed to do things. So they can say they employed craftsmen' (Informant 49). A similar sentiment is that 'people already talking about the demise of UX [user experience design] when you can have tools that generate wireframes for the right prompt' (Informant 35). With another anticipating, 'these robots will do my job for peanuts in 10 seconds […] And who cares if it's only 80% as good? Only 75% as good as what [I] could do?' (Informant 41). The relentless change, instability and uncertainty exacerbate designers' feelings. However, a genuine feeling of optimism surfaces for the change underway:

> *You become more a creative conductor […] at the minute I'm still trying to hold on to my past and my creative process, but in the future, you will probably just become a verbal conductor […]; you'll just have a symphony of pieces by which you're creating a story and a narrative for people (Informant 53).*

These diverse responses support the finding that the core constructs of designers' professional identity, including distinctiveness, are in flux, and they cannot be pigeonholed into one response type or another. Designers also see the distinctiveness of their role as the lynchpin who holds a project together—beyond the problem-solver. Designers hold the reigns, in control, with other creative professionals contributing—a perceived distinctness gives them greater job security:

> *It will be difficult to do a lot more of the thinking of the process that a designer can do. Having an understanding of like a wider system as a designer […] you've got to have the holistic view of how you piece all those things together to then solve a problem that exists (Informant 25).*

Designers shared examples that reflect the blurred behaviour they exhibit towards using GenAI. Designers are very uncomfortable handing autonomy to GenAI in their expert problem-solving domain, suggesting it 'feels disingenuous like it feels kind of cheating' (Informant 03), and they 'would feel as a creative like this kind of cheat' (Informant 55).

However, strikingly, designers spoke freely and enthusiastically about using GenAI to problem-solve when they cross knowledge boundaries, using it in the expert domain of a different creative discipline. We hear from one designer who describes:

> *Seeing huge benefits of, say, Photoshop with its generative fills […], it's been an absolute lifesaver […] to extend backgrounds (Informant 21).*

While they simultaneously express concern for the professional role Photoshop now substitutes:

> *I feel very bad for the artworkers that we used to use to help us on tasks like that, where [they] would painstakingly extend and do all that retouching, and that's the profession (Informant 21).*

Similarly, another designer describes the efficiency of automating custom illustration generation with a library of parts:

> *I don't need to commission an illustrator because I found this library of illustrations and I can type or use a search or type of basic prompts and I can find the thing that I need from there (Informant 15).*

However, they expressed discomfort when the process described was proposed:

> *[The] team were like, well, you could train an AI to kind of do that [illustrate] for you based on this visual style. And that made me feel quite uncomfortable. You know, that's someone's job and expertise and […] didn't really sit right with me (Informant 15).*

What escapes most designers is how their acceptance and use of GenAI in their existing workflow (e.g., baked-in to Photoshop) to extend backgrounds and retouch images performs the role of professional creative artworkers. This opens up further questions about what stage GenAI is accepted in the creative process and *where* in their workflow (e.g., inside core applications like Photoshop and Figma or external GenAI agents).

Also apparent is designers' perception of the competency and usefulness of text generators (outside expert domain) over image generators (inside expert domain). For example, when referring to a text generator, one designer mentioned they found it 'much more useful than things like MidJourney. Things like that. I've not really the kind of use case for any of that [image generators] yet' (Informant 51). Feelings were reflected by another designer who said:

> *I feel like they are very different. I feel like I'm much more. I can see much more value in the text side than the image side, personally. I think because I've witnessed the strength of the sort of written side of things (Informant 12).*

Designers describe using text generators to develop headlines and body copy, a task they previously collaborated on with a copywriter and are now questioning:

> *Why you should, you know, pay a copywriter, low-level copywriter if you know, ChatGPT did a great job in few minutes (Informant 51).*

As a simplified example of relationships in the design sector depicts (Figure 4), established boundaries are being disrupted. The expert knowledge gap between design professionals and non-professionals—which has always been precarious—is under more significant threat from GenAI than previous technological advances. A widely shared view of the sample is that they:

> *Feel like it sort of devalues the perception of what it is that we do because we have conversations with clients that can't use us, but then they also tell us about when they're using these tools to create stuff of their own (Informant 21)*

Summary: We find that the technological change from GenAI threatens designers' professional identities in a pincer move. The apparent threat is GenAI's agency and increasing autonomous, equivocal nature, which can replace designers' distinctive problem-solving capability. However, the ubiquitous nature of GenAI means threats are consequentially coming from other human agents—notably professionals from other creative disciplines and external stakeholders (e.g., clients). Designers are not responding in a predictable, orderly or familiar way. Instead, their identities are in flux, meaning there is no off-the-shelf model available for how to cope with the threat. This situation is compounded by the continual speed of change and the capability of technology. Furthermore, these findings illustrate GenAI's broader impact at individual, group, and industry levels (Figure 4), further highlighting potentially irreversible tensions, contradictions, and, strikingly, blurred behaviour in its use.

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DISCUSSION

We explored the emerging and evolving relationship between professional designers and generative AI. In doing so, we have addressed our question of 'how GenAI affects designers' professional identity and knowledge boundaries in the creative industries'. We questioned and complemented established assumptions of our knowledge of identity, idea generation and problem-solving. The combination of design professionals' expertise and GenAI's equivocality, underscored by the speed of change, enabled us to illuminate valuable, new, and nuanced understandings of identities. The novelty of our study—in contrast with most extant literature—is supported by our capture of identity threats and coping mechanisms in response

to technological transformation through a real-time lens. Further novelty comes from the study of GenAI. Technological threats to identity in related prior studies do not capture behaviours with equivocal technology, like GenAI. This, as illustrated through this paper, is unlike any technological capability that has gone before—both in terms of its capability to mimic professionals' knowledge and expertise, as well as its ubiquity and the speed at which it transforms the environment in which it operates and to its capability.

We recognise certain similarities in our study to the work of Vaast and Pinsonneault (2021), who identified a tension between professionals and a persistent threat from technology. The first relates to technology; they focus on a new occupation (data scientists) where the use of digital technology is the primary function of the role. As such, data scientists struggle to distinguish between themselves and technology and between themselves and related incumbent professions. The authors also find that their sample profession is sometimes looking to advance their identities by mimicking changes to the capabilities of the technology they use. Also, although there is a temporal aspect to the study, showing three controlled and defined stages of change in six years.

However, our study has salient distinctions that enable us to provide valuable contributions. Designers established their distinctiveness and status before GenAI emerged. The creative industries—where the design sector sits—constitute some of the oldest recorded activities (British Council, 2024). This means that the design profession and designers' identities were long established before the advent of GenAI. Moreover, designers are not looking to mimic GenAI and its capabilities—the opposite is true, and it is mimicking their problem-solving expertise. Additionally, as discussed throughout, the unprecedented speed of change, both the rate at which it diffuses into the design industry and GenAI's capabilities, impacts designers' appraisal and response times. The unpredictable behaviour disrupts prior assumptions of the temporality of technological change and identity.

Limitations with coping mechanisms

Inflexibility of change: Petriglieri's (2011) model is understood to assume that an individual makes an apparent binary choice of either an *identity-protection* response or an *identity-restructuring* response. In contrast, we find designers exhibiting both identity-protection and identity-restructuring responses simultaneously. For example, designers demonstrate a derogation response (identity protection) by discrediting GenAI's capability while reevaluating the meaning and importance (identity-restructuring) of their identity and even the possibility of

an identity 'exit'. We suggest that once a first or second appraisal has been made and a response has been chosen, the speed of change with GenAI means designers do not complete the process, and the technology requires re-appraisal.

Speed of Change: Petriglieri's *(2011) model also* sets out a primary and secondary appraisal. The first is to assess the threat, and the second is to determine the individual's response. It is understood that individuals may process more than one threat at a given time, but each threat is processed from start to finish. In contrast to the end-to-end linear process, we discover that the speed at which threats require appraising from GenAI's inherent equivocal and epistemic nature is not reflected. The speed of change means that designers can still respond to a particular threat when GenAI updates again, requiring reappraisal. In short, designers do not complete the entire process. Instead, they drop out throughout and cycle back to reappraise and repeat.

Location of Change: Relatedly, Ibarra and Obodaru (2016) relax the assumptions of *liminal experiences*, 'the experience of being in between roles and/or identities' (p. 48), in light of modern careers. The described liminal process still requires an individual to 'shed' their identity to enter the 'betwixt and between' state of transition. We see similarities between this notion and particular pluralist behaviour in our findings of designers' identities blending threat responses. Contrastingly, designers are still in their current role and identity—having not shed the old one. In sum, extant threat-coping models do not satisfy the conditions we find in the empirical setting—there is no off-the-shelf threat-coping model for designers and GenAI.

Boundaries and behaviour blurred

We contribute to the identity landscape further by shedding light on the broad impact of identity threats and responses to knowledge boundaries by the equivocality and ubiquity of GenAI. Most of the reviewed extant literature focuses on the human-technology relationship (e.g., Vaast & Pinsonneault, 2021; Nelson & Irwin, 1994). Our primary focus was individual-level identity as we planned our study. However, in contrast to extant literature, our research and analysis offer salient, multi-level insights (Figure 4). Interestingly, we find blurred behaviour in how designers respond to GenAI. Using GenAI for mundane 'support' tasks in their domain is widely accepted by designers. However, they are uncomfortable with GenAI's problem-solving capability encroaching on their expert domain. Hence, using it for problem-solving in their area of expertise triggers concerns about authenticity and cheating. In contrast, designers span boundaries to problem-solve using GenAI in the exert domain of other creative disciplines. For example, designers freely use the problem-solving capability of GenAI in the expert domain

of a different creative discipline (e.g., designer to copywriter or designer to voiceover artist)—striking, given that designers can lament the threat of GenAI in these disciplines.

Coping in flux

GenAI fracturing the locus of problem-solving fundamentally disrupts designers' professional identity—what they do and who they are. As previously described, the three interdependent constructs of a designer's professional identity—expertise, distinctiveness and problem-solving—are each individually threatened by the epistemic, equivocal and ubiquitous nature of GenAI. Thus, GenAI triggers designers' knowledge and competency of GenAI to be perpetually changing. Simultaneously, GenAI's knowledge and competency are also in a state of continual change—the knowledge it is built on keeps growing due to GenAI's continued learning from users' interactions with it and the burgeoning data stack it draws on. This will not stop growing, with, ironically, the designer's use of technology being one contribution to fuel its epistemic expansion. The enhanced knowledge allows GenAI to increase its cognitive and problem-solving capabilities. The result of GenAI's non-stop growth means designers cannot keep up with how to use it, what it is capable of, or how it works. This state, where identity, knowledge, and technology always move, was initially viewed as a transitional stage to a coping mechanism. Instead, we now see the perpetual change, unpredictability, pluralism, and blurred behaviours as the designers' coping mechanism—reflective of designers' unpredictable and fluid responses—in a condition we call *epistemic flux* (figure 5).

Moreover, we contend that conducting the interviews in real-time with the disruption by GenAI captured 'in the moment' accounts for us observing the *flux*. When you have passed the initial disruption and view it retrospectively (e.g., Vaast & Pinsonneault, 2021; Nelson & Irwin, 2014), the nuance of being in the 'moment' has passed. Furthermore, what is also different in our study is that career transitions (e.g., Ibarra, 1999; Pratt et al., 2006) are distinctly individual events experienced at different times by individuals. In contrast, the technological change from the ubiquitous nature of GenAI means the experience is universal—simultaneously encountered by individuals of all levels and capabilities. Thus, we demonstrate that technological change in the creative industries is a fertile environment for studying identity threats and responses.

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Proximity of expertise

Last, we contribute the notion of the *proximity of expertise* as a boundary condition of designers' coping with epistemic flux—determining designers' *behaviour* toward and *meaning* ascribed to GenAI and what it generates. The proximity of expertise is three-fold. First, it refers to the proximity of an equivocal technology to a designer's problem-solving domain expertise (e.g., image generator to a graphic designer). Second, it refers to the proximity of an equivocal technology in a designer's expert *creative process* (e.g., idea generation or production). Third, it refers to the proximity of an equivocal technology within a designer's *workflow* (e.g. baked into Photoshop or an external online agent).

We suggest that the proximity expertise moderates designers' epistemic flux on these three axes. Thus, this notion provides an initial means to explain designers' openness to using GenAI for mundane production tasks, use in current software, and a willingness to cross knowledge boundaries to other expert creative domains for problem-solving and content generation.

LIMITATIONS AND FUTURE RESEARCH

We encourage our research to be viewed through a lens with the following limitations that offer four potent opportunities for novel and salient future research. The first acknowledges that our analysis is from a data set comprising only one collection method—interviews. Our study was taken as a snapshot in time while the new technology was still emerging. The inherent temporal nature of change means that to provide a deeper understanding of the phenomenon, a second snapshot is recommended to conduct a comparative analysis. The speed of change with GenAI means that 9-12 months will yield salient results. A six- to twelve-month case study combining interviews with observations and documentation would also be of value. We also see value in speaking to other stakeholders in the designers' process to elicit a comparable view of designers' perceptions.

Second, we took our sample from professional designers in the creative industries, who were identified as being directly and significantly impacted by GenAI for their problem-solving expertise. Our findings focus on a narrow—albeit valuable—professional community. Thus, we recommend opportunities for future studies in two opposing directions. One is to narrow down the sample in the design industry further, to identify two design professions (e.g., automotive designers and graphic designers) and research to draw a comparative analysis to identify distinctions between them and if one is disproportionately affected more than another.

Seeking answers to questions that explore whether the type of creative output acts as a boundary condition to use would be of significant value to the design industry. For example, an automotive designer may feel less threatened and be more inclined to use GenAI because (currently) GenAI cannot create the final content. However, a graphic designer may feel an increased threat because they could use GenAI to generate a logo. The other direction would be to look beyond design and explore a different discipline in the creative industries to see if there is any observed disproportionate impact on one creative discipline (e.g. between design professionals and copywriters).

Third, we advocate exploring beyond the boundaries of the creative industries to discover how our findings in the creative industries transfer to professional groups in other industry sectors that are more institutionalised and are regulated with a high threshold of entry, such as law, finance and health. Sectors that, although they are expected to be impacted by GenAI, their professional identities are perceived to be less directly mimicked by the technology as found in the creative industries. Moreover, GenAI's ubiquity is less significant in those fields due to the regulations and qualifications required for entry. Last, we advocate further enquiring about two boundary conditions in our paper. The first relates to the *proximity of expertise* and the impact this has on the ownership of output and acceptance of use. Also, how human 'physical' involvement in generating and crafting ideas influences the acceptance and use of technology and the creative output.

CONCLUSION

Our empirical study explored design professionals' sensemaking and coping mechanisms in response to threats from the technological change brought by GenAI. The design industries afforded us an empirical setting fertile for discovery, enabling us to draw rich and perceptive accounts (Alvesson, 2011) from professionals experiencing technological change in real-time when we spoke to them. We provide a timely contribution that furthers our understanding of how professionals' identities respond and cope with technological change. We illuminate GenAI's unique equivocal and epistemic characteristics by drawing attention to designers in the creative industries. We observe GenAI fractures designers' locus of problem-solving, physically moving designers' inherent skill to an external GenAI agent. This break triggers designers' professional identity into *epistemic flux* moderated by the *proximity of expertise*. As a result, we discovered limitations with incumbent identity coping models that, coincidentally,

reflect the conformity of incumbent digital technologies (Mollick, 2023). Instead, we extend our understanding of identity coping models by highlighting the need for a model to reflect the epistemic fluidity found in the GenAI-designer relationship. Consequentially, the boundaries are blurred from an individual to an industry level. Hence, we position GenAI as *the agent of change* in the creative industries for the twenty-first century.

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Table 1: Data supporting interpretations

Aggregate dimension: Paradigm of designers' professional identity	
Second-order theme	**Exemplary quote**
Creative Expertise	"I think it's very important in terms of the way that I use creativity to solve problems, okay. Because the my approach to creativity is not just it's not a superficial approach to something aesthetic. It's my I'm always driven to know that I'm going to design something I can build." (16) "It's like, everything that I do, really? Yeah, I think every day you've got to try and try and be you know, get your thinking hat on." (10) "Incredibly important. We have to stand out from the competition. And the only way we can do that is by being creative and that is by identifying what what we're selling." (13)"
Distinctiveness	"I think the scope of my expertise is it makes me more distinctive, versus other contractors to design teams because I'm not just a technical guy. I'm not just there to produce drawings. I'm actually there to protect the business" (16) "I think it's a mix of experience and just a bit of empathy." (15) "I'm an ideas man or an ideas person. So they're actually quite, quite unique in my role. I think people are always like, Oh, how are you able to come up with so many ideas in such a short space of time? So I'd say yeah, ideas is probably the big one" (25)
Masters of problem-solving	"I think you need to kind of be open minded to the possibilities of things changing all the time, and your understanding of how things work. And your relationship to the world. And your relationships. Your job, like that's always in flux." (62) "I always start from a position of, of course I wouldn't understand this but I know how to work out how to understand this" (01) "We need clients to recognise the value is to understand the process that sometimes we are going to go off on a on a on a tangent that may make them feel uncomfortable because it doesn't feel like it's immediately going to be something that they can put to market or it doesn't feel like it's going to be right on the money in terms of answering the brief literally, but that that journey is part of getting to the place where it is new and useful to create a kind of even working definition of creativity or innovation depending on where you look" (61)
Aggregate dimension: Fractured Locus of Problem-solving	
Second-order theme	**Exemplary quote**
New Knowledge and Skills	"I think, I feel, I hope, that it will continue to be a tool" (23) "I think I mean, it's clear that it's going to change a lot for other people, and very interested to find out how we can harness the power of it." (37) "I think it's going to be another tool, isn't it? It's going to be another tool like Photoshop it's it's gonna I think it's gonna be as good as the person who inputs into it" (05)
Establish New Relationships and Collaborations	"I can just see it more of an assistant and it's kind of like […] I think AI is definitely just more of a, a very handy assistant and a tool that we should learn". (10) "it's like an intern or a junior. You know, where you kind of get like discrete tasks and then you have to use your your experience and judgement to evaluate if the job has been done well enough." (62) "It's like having more people in the team and but the best way I can describe it, it's a different viewpoint. And it provides different stimulus. It doesn't have the answer. It just gives you things more collateral to work with refined collateral to work with" (17)

Table 1: Data supporting interpretations (cont.)

Aggregate dimension: Identities in Flux	
Second-order theme	**Exemplary quote**
GenAI's Capability Downplayed	"I find you can use it as an early brainstorming partner but it tends to be what you end up doing is empty your head of all the stuff that's average." (49) "I kind of use it more for kind of donkey work with things like ChatGPT. Yep, it's I want to wite like that error message that was talking about? Yep. And I need to squeeze it into 20 words or less" (15) "Because it's cheating. Because it's why well doesn't it use everybody else's ideas in a way and kind of spurt out? Something that's already been done?" (05)
Expertise and Authenticity Compromised	"you obviously don't know where it's pulling these references from. So I think there's a sort of worry of it could be completely mimicking something else that's out there, and you wouldn't even know about it". (06) "I feel less connected to them. […] I feel like I'm almost doing the AI. I'm doing that role, I've taken […] all the things I've taken in for the last 50 years of my life […] is quite personal to me in a way. So I obviously feel far more connected to it than I would if it [GenAI] just been produced by artificial intelligence." (32) "feel very worried about showing that to a client because they know what if they go to the same prompt the same thing but the same prompts and does the same thing come out. You know? […] if I did that and went to a client said, Oh, by the way, I did this with an AI they'd feel a bit cross" (19)
Legitimacy and Status Challenged	"for me personally, who's had spent 45 grand on a graphic design education […] if people are able to just sort of like pick up the software and make something by generative AI magic, then that would be that would probably be an issue for me because I'd have a lot more competition." (8) "The more of that stuff that I see, the more I feel like it sort of devalues the perception of what it is that we do because we have conversations with clients that can't use us but then they also tell us about when they're using these tools to create stuff of their own." (21) "I think that it's, you know what, what artificial intelligence produces versus what organic intelligence produces. We need to understand what the difference is." (61)
Aggregate dimension: Boundaries Blurred	
Second-order theme	**Exemplary quote**
Impact of GenAI on Their Expert Domain	"I'm not panicing yet, but only because I don't know enough about it. Probably I should be more panicked than I am!" (05) "it's changing that more about dependency dependencies on agencies on designers has been historically I think it's, it's starting to change that." (52) "I think if it really takes off, it means that there'll be less people doing what I do." (47)
Impact of GenAI Beyond Their Expert Domain	"I've seen that first-hand in just that one example of having it sort of just rewrite what I've written and what came back to blew my mind. So yeah, I can see I can see the quality."(21) "I don't think of it necessarily as depriving someone of a week's work. Because the budget isn't. We don't have the budget to do it. So not great. I have friends who work in motion graphics and video as well. And they're kind of feeling the pinch because you know, smaller businesses. are doing this kind of thing themselves. Yeah, I don't know. conflicted" (15) "used it for all the SEO copy on my website, which I feel really guilty about because I know a lot of copywriters but yeah, it like redid all my SEO for me" (55)

Figure 1: Data structure

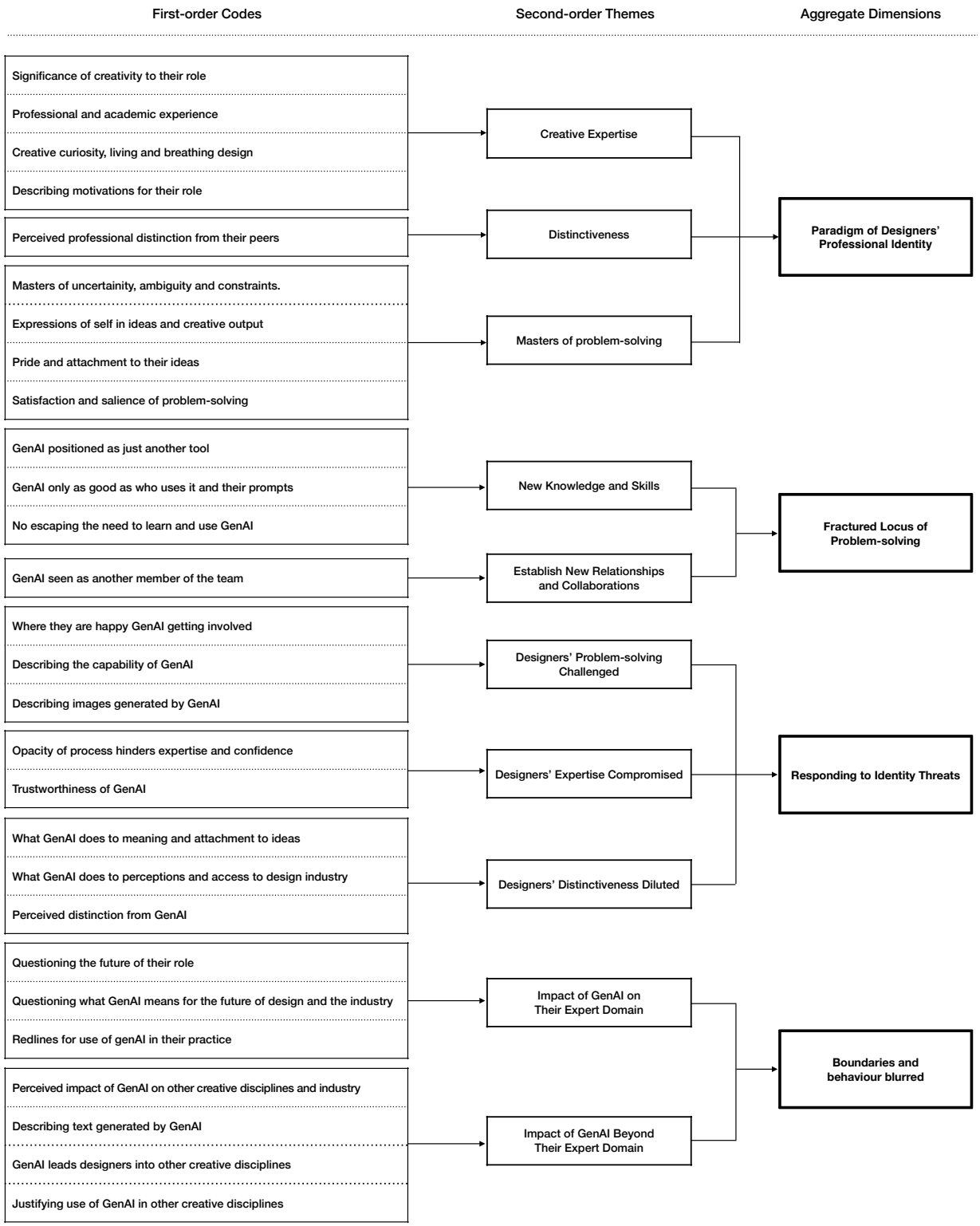

Figure 2: Paradigm of designers' professional identity

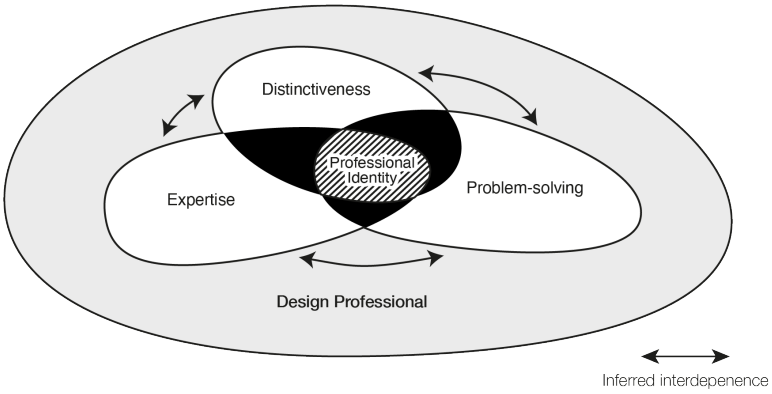

Figure 3: Fractured locus of problem-solving

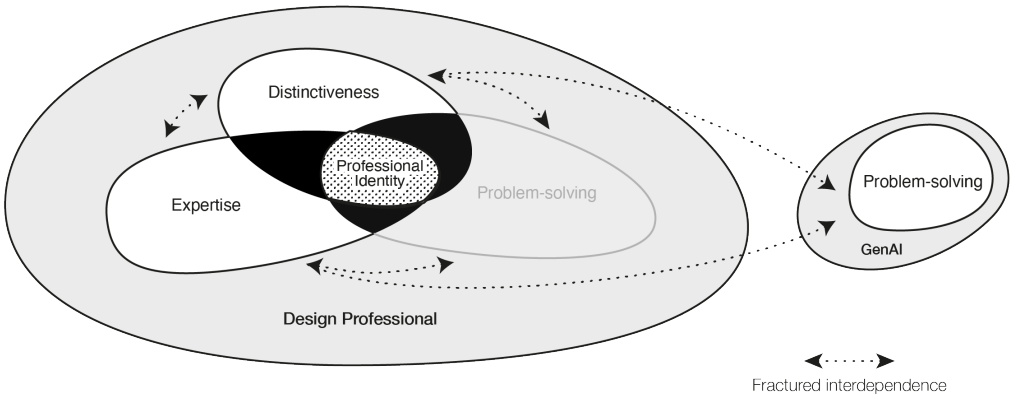

Figure 4: Boundaries blurring

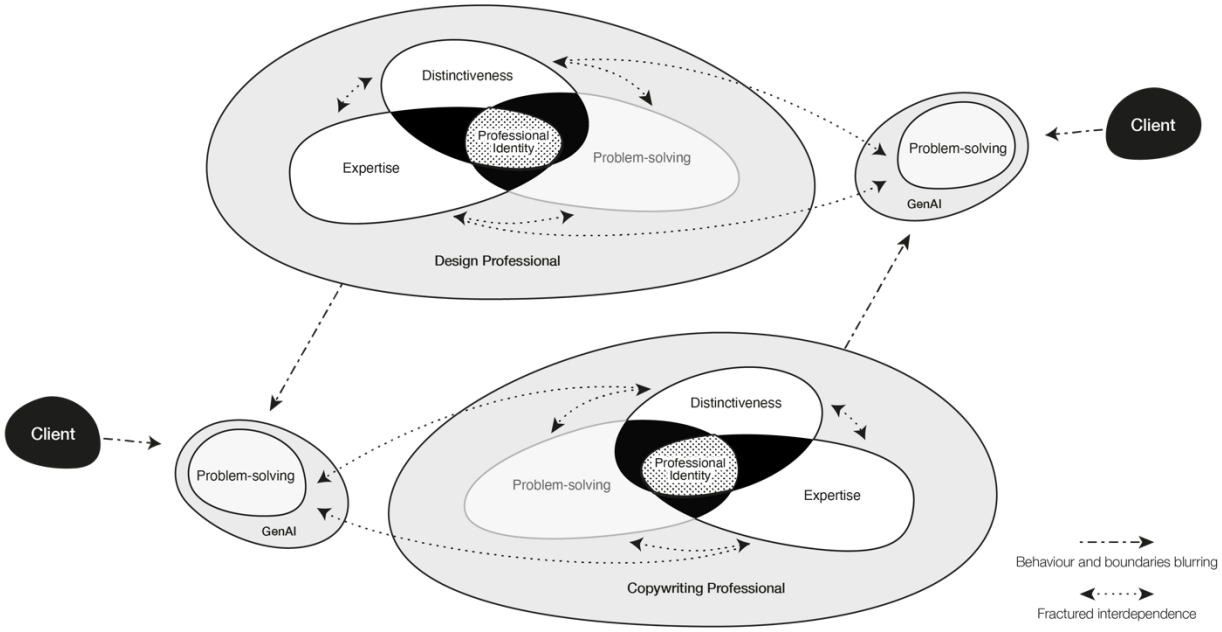

Figure 5: Identity in epistemic flux