The Creative Act as AI Research

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Abstract

Rick Rubin's book *The Creative Act: A Way of Being* popularises a particular view of creativity and artistic practice that has its origins the work of philosophers such as John Dewey and Alfred North Whitehead which sees creativity as a state for people to attain and uphold. The purpose of this short paper is not to argue for or against this view of creativity, rather to ask how such a position on creativity might benefit current and future AI research. We ask what computational creativity research might learn from Rubin's view of creativity, looking as aspects such as creative facilitation, critical listening, looking outwards and the beginner's mind.

Introduction

The Creative Act: A Way of Being is a book about creativity and being a creative artist, written by Rick Rubin (2023). Rubin is most famously known as a highly influential music producer, producing a number of seminal albums across diverse genres that include hip hop, rock and country. He has worked with a myriad of successful artists including Public Enemy, Slayer, Johnny Cash, Red Hot Chilli Peppers and Adele.

Rubin is not a researcher or accredited scholar in creativity, music, nor art, rather a successful practitioner in music production. In his own words, the book is "a reflection of what I've noticed— Not facts so much as thoughts". It presents a series of ideas, aphorisms, reflections, provocative (and sometimes contradictory) statements on what it means to be an artist and the nature of human creativity. The scope of the book extends beyond the human, hinting at existential views of the universe being creative and the purpose and meaning of life in metaphysical neologisms.

Despite sharing a key word in their titles, we don't doubt some might question the relevance of Rubin's book to computational creativity and creative AI research. It could be because art and computing are often located in different buildings at universities, or maybe because greater society continues to grasp stale stereotypes surrounding both fields, drawing a conceptual distinction between the arts and computing. But when so much of the current excitement around AI development comes from the generation of creative artefacts, we know this divide is dissolving. However, it is precisely because current AI is so intensely focused on the generation of human-like creative artefacts—moreover artefacts that seem to devalue traditional creative skills—that Rubin's view of creativity is so timely and relevant. To put it simply, as researchers in computational creativity, we *are* creatives, so advice to creatives is relevant to us.

Accordingly, we would like to share some key observations from *The Creative Act,* contextualising them within the current state of AI development and creativity. The purpose of this short paper is not to critique or argue for or against Rubin's view of creativity. Rather, for the purposes of developing the main contribution of this paper, we will accept it as a legitimate view and use it to frame the ideas and arguments developed herein, which address speculative concepts about how we might develop computational systems. The goal is to offer points of reflection that may inspire new creative directions and to enrich our computational computing research practice with the advice of one our times' greatest creative facilitators.

Rubin's Concept of Creativity

The Creative Act considers creativity as a fundamental aspect of being human—a state we seek to attain and continuously develop throughout our lives. Hence every person has the potential to be creative, even if they do not consider themselves an "artist" or a "creative person". Tapping in to this creativity requires a "way of being in the world", where one is attuned to their environment; perceiving, filtering, and collecting information, which we then curate as experience for ourselves and for others. Focusing on the generation of artefacts has little relevance in Rubin's view of creativity. Inconsequential are the artefacts and outputs when life itself is considered a form of creative self-expression.

A recurring theme in the book is that of creating the necessary conditions or state to become creative—not being directed or feeling oppressed by external expectations, nor trying to predict or rationally analyse our world to source creativity. The opening quote of the book, attributed to Robert Henri, states: *"The object isn't to make art,|it's to be in that wonderful state |which makes art inevitable"*. In Rubin's view, being a creative artist is defined by a state of mind and our goal as creative beings is to attain and constantly develop that state. To do this, we need to open (mental) spaces that allow us to accept new information from the world around us and to seek experience that might ordinarily be invisible

without "looking" deeply—a process which he encourages everyone to do.

While never explicitly stated, the book draws significantly from Buddhist concepts, particularly the modern American flavours of Zen Buddhism. These include the concept of creative enlightenment as a journey of self-development, the practice of meditation to reach states of concentrated awareness, and the seeking of transcendent virtues such as generosity, patience, dedication and wisdom. In this sense, the book can be seen as part of a linage of writers that include Robert Pirsig (Pirsig 1974), Allen Ginsberg, and Peter Matthiessen (Matthiessen 1998), who all view creativity through a Zen Buddhism lens.

Exploring the literature on creativity it becomes clear that Rubin's views on creativity are not unique. They follow a linage of thinking about creativity expressed by writers such as John Dewey and Alfred North Whitehead (Still and d'Inverno 2019). In contrast to views of creativity popularised by the Psychologist J.P. Guilford from the 1950s, where "creativity" was a special characteristic of certain people and that "carefully constructed hypotheses concerning primary abilities will lead to the use of novel types of tests." (Guilford 1950), Dewey's view emphasised experience over producing products. Certainly from the earliest days, Guilford's view of creativity was contested (Rhodes 1961; MacKinnon 1970; 1975). Similarly, computational creativity researchers have also recognised that looking beyond the production of artefacts is important in understanding creativity in machines (Colton 2008; Jordanous 2016). However, such developments seem to have been overlooked in much current generative AI research, which focuses almost exclusively on synthesising artefacts that mimic those of skilled photographers, illustrators, cinematographers, writers, poets, performers or musicians (Kelly 2022; McCormack et al. 2023).

In contrast to views of creativity focused on the production of artefacts, or even those that consider the creative process in non-human systems, Rubin's view of creativity suggests that creativity isn't something that can be automated or mimicked by machines—or humans. He offers no metrics for creativity, no defined steps or methods. Instead, he asks us to develop and nurture our own creativity through how we think and what we do in the world. We believe the following reflections are particularly relevant for computational creativity research and current AI development.

What Can We Learn as AI Researchers from the Creative Act?

Creative Facilitator

Rubin's role as a music producer demonstrates that there is an art in orchestrating the conditions for creativity. The role of the producer is to support, direct and deliver the artist's best musical work, realised in the form of a music recording, or series of recordings that make up the traditional album. Often, the producer's role is less musical and instead may act as a critical voice, a critical listener and a source of reflection for the musicians, as well as a wellspring of ideas or simply a disruptor. At different stages in the production process they might be all of these things. Unlike sports coaches, who are often former players or athletes, the producer does not need to be a musician or former musician. While having some basic musical knowledge is important, most producers are typically not virtuoso performers, retired successful musicians or composers in their own right, rather—and this is particularly the case in Rubin's view—they are *facilitators of creativity in others.*

This idea of an authoritative member, who may be lacking many of the domain-specific skills of their collaborators, but nonetheless takes on the respected role of the creative facilitator, is less common in many technical fields but has reoccurred in the music industry. In this sense, one can draw parallels between Rubin and Brian Eno; another creative thinker, musician and a highly successful producer. Eno has developed his own unique methods of facilitating creativity (Eno 1996), most notably the *Oblique Strategies*, a series of cards containing one-line instructions to support divergent thinking and overcome creative block (Harford 2016). Originally titled, *Planned Accidents*, the cards reportedly, "drove musicians crazy" (Harford 2016, p.5), with drummer Phil Collins throwing a beer can across the studio in frustration when instructed to repeatedly use them in one session with Eno as producer (playing disruptor). Nonetheless, the Oblique Strategies after more than 30 years remain a popular method to support creative thinking, not only in the music studio. This is a testament to their legendary power[1] and the need for methods of creative facilitation.

Other methods of creative facilitation have been explored in research on creativity support systems (Shneiderman 2000; 2007), a sub-field of human-computer interaction which develops tools to support human creativity. Some systems adopt a hybridised co-creativity approach (e.g. (Davis 2013)) where human and machine deliver new or enhanced creative outcomes. In this sense, the focus is on the development of AI tools that support human creative tasks that are based (and often measured) in terms of the successful production of artefacts.

But just as Rubin does not claim to be a musician, what if we stopped positioning AI as an artist or art-making tool and instead considered it a creative facilitator? Like a music producer, AI could be said to have an encyclopedic knowledge of art. In this way, an AI model may have "a producer's eye" for uniqueness or authenticity. Could AI be used to facilitate the conditions necessary for human creativity?

Critical Listening and Feedback

As noted previously, part of Rubin's role as a creative facilitator involves the act of being a *critical listener*. A critical listener listens deeply to what is presented and provides targeted and critical feedback with the aim of improving that performance. This feedback is rarely in the form of quality evaluation ("this bit was good, this bit was bad"), but is more often as a stimulus for injecting greater creativity into the performance. So far from being for the purpose of evaluation is this critical listening, that often times the most insightful

[1]We also accept that the reality might not always live up to the legend.

moments in need of being deeply heard actually occur outside of the studio, and are observed in artist's habits and way of living. The critical listener's role is to push the performer into new territory, to escape existing habits or to reflect on how the nuances of their technique could be shaped to better express their artistic intention or ideal.

Though we are now recognising that benchmarks based on "correct or incorrect" binaries, are not the most insightful method of evaluating AI performance (Raji et al. 2021), there is still much to explore surrounding possible methods for providing critical feedback to AI systems. There have been calls for more human evaluation (Datta and Dickerson 2023) and a broader range of criteria in these tests (Ge et al. 2023; Chang et al. 2023), but there is still an overall a focus on evaluation (Peeperkorn, Brown, and Jordanous 2023).

Even in computational creativity, when research has considered creativity beyond just the generation of artefact to the process, evaluation focuses on assessing interpretive qualities such as skill, imagination and appreciation in computational systems (Colton 2008). These attributes are framed as measurable features of a system's ability (Jordanous 2012), used to evaluate that system's independent creativity.

Adopting Rubin's view, evaluation could be replaced with creative facilitation; curious observation and deep listening in order to identify the strengths and new opportunities. This is not one-sided but bilateral—the onus is also on the system to critically understand the human artist's performance. Hence, attributes such as empathy, contextual awareness and targeted advice seem potentially more appropriate as skill, imagination and self-appreciation.

The importance and complexity of these skills are affirmed by theory of mind researcher Kosinki who explained, "humans do not merely respond to observable cues, but also automatically and effortlessly track others' unobservable mental states, such as their knowledge, intentions, beliefs and desires" (Kosinski 2023, p.2). Yet it is rare to see development of creative AI systems that adequately embrace such skills demonstrative of critical listening.

This lack of empathetic insight may be because it is not encapsulated by narratives of measurement or evaluation.[2] It could also be due to the fact that critical listening is so tied to human concepts of perception, that it does not allow for more ample ideas of what non-human critical communication could be. Critical listening can easily be extended to other modes of understanding, typically tied to the sensory modalities such as critical seeing or critical feeling, but how could this be extended in a way that is fitting for AI? What would a critical "interpretation" AI be like?

If the only information available to LLMs is a text input, their ability draw critical insights will be equally limited. Here it seems that multi-modal capabilities could be harnessed to allow AI to pick up the more subtle clues necessary to be an effective creative facilitator. However, the current training methods for foundational models are not specifically targeted at this type of use but instead on tasks such as object recognition (Lin et al. 2014; Wang et al. 2024). Conversely, perhaps knowing the limits our co-creative partners have in their possible information inputs, we need to consider new and clearer ways to communicate with non-human systems.

[2]But that doesn't stop people from trying, e.g. benchmarking emotion (Huang et al. 2023).

Looking Outwards

> "Look for what you notice but no one else sees" (Rubin 2023, p. 37).

A parallel to interpreting the world through a critical lens is presented through this potent phrase and self contained chapter. A poetic paradox often observed in many Buddhist schools of thought presents itself here. Rubin suggests that as well being capable of critical observation which deconstructs and questions, we should also look outwards with openness and curiosity. Rubin champions the idea that creativity is not solely birthed from one's internal world but is fuelled in equal part by inspiration sourced externally. In computational creativity, much like many other disciplines, inspiration may initially be sparked from an external source but throughout the development of the work, there is a tendency for our gaze to focus inwards. We become preoccupied with the inner workings of the system or the details of the work and we cease to gaze outwards. We see this in today's "tech-solutions: looking-for-problems". These products launched with the hope of finding their market only after they have been manufactured and with millions invested evidence this pattern of tunnel vision which can become a byproduct of unbridled creation.

However once again opening the peripheral vision, we see that by suggesting you could notice what no one else sees, Rubin is implying that the unseeing-others are also in fact capable of making the same observations—but haven't. This once again reaffirms Rubin's foundational philosophy that everyone has the potential to be creative—but isn't. The moral for researchers, developers and artists alike is that we must keep looking. We must allow the context we are born into to inform our development. This means not only keeping present the underlying motive for our research, but beyond this, allowing our outward observations to shape and evolve our work. Though the call to "keep looking" sounds overly simplistic, maintaining a constant state of curious observation must be a decided and conscious act.

As one's domain-specific knowledge accumulates, the confidence that results from experience can become a shutter to the outside world. The researcher becomes an authority and ceases to observe. The expert is no longer curious and suddenly (and quite paradoxically), the outward gaze of the novice perceives more opportunities than the masters.

Here, we see a similar parallel to current foundational deep learning models. Models are trained on a vast corpus of data, in a sense, "looking" to build a domain-specific statistical model. This statistical confidence becomes a shutter to the unusual, the neglected, or the new (McCormack et al. 2024). When the training finishes, the model ceases to observe. Unlike people, foundational models have no intention; they cannot be curious about anything. In simple terms, they learn patterns in the data they are exposed to, but

lack any intention or high-level motivation about how to use it. Curiosity was once a popular and foundational topic in computational creativity research (Berlyne 1960; Saunders and Gero 2001; Saunders 2002; Saunders and Gero 2004; Saunders 2006; Wu and Miao 2013), which now seems to have become displaced by the generative power of foundational AI models.

Beginner's Mind

Despite being released in 2023, there is only one mention of Artificial Intelligence in *The Creative Act*. In the chapter titled, "Beginner's Mind", Rubin talks about Deep Mind's *AlphaGo* beating world champion Go player, Lee Sedol in 2016. Initially, Rubin "found myself in tears... confused by this sudden swell of emotion" (Rubin 2023, p.119), but upon reflection Rubin decides AlphaGo's success could be credited to the fact that it wasn't restrained by existing beliefs or human ways of knowing: "if it had been taught to play by humans, it most likely wouldn't have won the tournament," he speculated. "This is the beginner's mind—one of the most difficult states of being to dwell in for an artist, precisely because it involves letting go of what our experiences have taught us." (Rubin 2023, p. 120). Here, Rubin sees the value of AI as supporting a different way of thinking, one that is not bound by existing conventions or rules, much like the way a child embraces creativity without knowledge of convention or limitation.

Beginner's mind is so effective as a creative state, because it epitomises openness and curiosity. Without the burden of knowledge or the sting of failed experiences, the beginner sees only possibilities. The story of AlphaGo defeating the world champion served to remind Rubin of the beauty of seeing the world through innocent eyes, but beyond the serendipitous second hand effect of this tale, could AI be used in such a way that it *actively* promotes beginner's mind and other creative states for people? With so much research targeted at mimicry of (largely Western) human ways of knowing, can we seek more alien and more-than-human alternatives that frame our world from unusual perspectives, freed from human bias and ways of seeing?

Creativity as an infinite resource

Certainly not original to Rubin but expressed quite beautifully in his words, is the idea we should foment an "abundant mindset" (Rubin 2023, p. 170). Having an abundant mindset means knowing with certainty you have access to an infinite source of ideas and inspiration. Beyond this, it also implies a willingness to share knowledge and encouraging the growth of others because their success does not imply our failure.

However, with AI research there has been an increased focus on the limitations; the lack of available data is slowing the potential for AI development, training AI is limited by cost and time. This growth-hungry phenomenon constantly aiming for bigger and better, also seems to be synonymous with believing sufficient just isn't enough. This scarcity mindset founded on fear and competition does not breed fertile grounds for creativity.

Instead of focusing on what is not available, true creatives discover infinite possibilities in what *is* available to them in the current moment. Like the example Rubin offers of Yves Klein, who limited his painting to a single colour which led him to discover a never before seen shade of blue (Rubin 2023, p. 176). If we stop building bigger resource-sucking data centres and scraping every corner of the internet for training data, then perhaps the limitations that arise will lead to more worthwhile creative development. If we embrace the abundance mindset and come to believe we already have everything we could possibly need to evolve our creative systems, where would we look and what actions would we take?

Conclusion

> "Just a few years ago, people said that AI would never be creative. And yet AI now feels like an endless river of creativity, making poetry and images and music and video that stretch the imagination." — Mustafa Suleyman, CEO of Microsoft AI, April (2024)

> "AI-generated images tend to suffer from a similar bland 'tone' as its writing, and their proliferation only makes me desire real human artwork more" — Molly White, April (2024)

As suggested by these two divergent quotes, both made days apart in April of 2024, we are at a crossroad of technical development and human creativity. The dominant tech narratives of AI are based on consumption—consumption of data, energy, resources, time, money and ultimately, consumption of human creativity to feed the production of machine-generated outputs. And now, having devoured the easily available human data resources, GenAI produces and consumes synthetic data in a cannibal-like cycle of insatiable growth on the pathway to general AI. This compulsive expansion is also propelled by competitive consumption as AI companies strive to better each other. This competition is not aimed at being better creative facilitators but only to drive more consumption or to expand enough to suffocate the other—human, corporation, or machine. This seems a poor reason to undertake AI research and the antithesis of Rubin's creativity. So while AI evangelists may dress consumption as a utopia that democratises knowledge and empowers all, we would like to offer an alternative utopia inspired by *The Creative Act.*

> "Aiming at greatness is different than aiming to be better than someone else." — Rick Rubin

What if AI systems could get us to that wonderful state that makes human art inevitable? Instead of becoming an artefact that renders humans lazier and less skilled, could we grow and evolve sustainably and symbiotically with AI? Rather than a statistical mimic or automator of human art, as so much of the current advancements suggest, could AI function as a creative facilitator *for people?* Something that allows us to grow and flourish creatively, not for the purposes of producing more, producing faster, or even producing better. Rather for our own satisfaction, development, and growth as fundamentally creative beings.

It's easy to dismiss utopias as romantic ideals that will never eventuate—best left for the artists perhaps. But, as researchers who actively choose to live creatively, we identify as artists too. So, with an artist's romanticism and the curious enthusiasm of the beginner, we gaze on the newly breaking dawn of the current AI revolution and hold hope for the creative possibilities it could bring, wondering who may be up to the task of bringing them to fruition. After all, only creative people can create creative systems.

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