

Commands, Prompts and Gestures: Understanding Generative AI as an apparatus

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Abstract

The rapid proliferation of Generative AI (GenAI) has been matched only by the speed of their normalization. GenAI tools such as Midjourney and ChatGPT have been employed to aid work in a wide range of fields from Law and Marketing to the Creative Industries and personal communications.

Their rapid adoption owes much to the efficiency of their interfaces. However, the ease and speed of use belies the complexity of these systems. Meanwhile our tendency to personify, amplified by the often language-based interfaces, may further obscure the true nature of our relationship with and understanding of them.

This paper offers a closer examination of our interactions with GenAI tools and asks whether Flusser's concept of the apparatus may allow us to better understand the gestures involved in their

use.

Introduction

The rapid development of Artificial Intelligence (AI) and Generative AI (GenAI) has been well documented; their effects and implications widely debated in the popular press. Advancements have seen the capabilities of AI increase at what is for many an alarming and unprecedented rate. One study by Stanford University suggests that it has outstripped Moore's Law, previously seen as a benchmark setting the pace of computational advances [1]. This has seen calls for a slowing down or even pause in the development of AI while their potential impacts are studied, including an open letter signed by hundreds of leading figures in AI [2]. Such concerns have been taken seriously by governments. A recent international summit at Bletchley Park organised by the UK government met to discuss these concerns and put forward proposals for regulating and ensuring the safety of AI including calling for more transparency. The policy paper published at the end of the summit summarises the broader debates surrounding AI, noting both the "enormous global opportunities" and potential to "transform and enhance human wellbeing", and also the "significant risks" to daily life, not least in relation to human rights, ethics and privacy [3]. While debates tend to fall into opposing positive and negative camps, there is a general consensus even among

those with more moderate views that AI will bring radical change on the scale of a new industrial revolution and that this change is rapidly approaching.

The context for this is paper lies in creative practice and is the result of conversations with undergraduates on an Arts and Creative Technologies course. While ready and willing to embrace the possibilities of GenAI, students often struggle to go beyond incorporating it into existing workflows, speeding up but not necessarily transforming their practice. Others expressed a suspicion of the promises of GenAI, citing concerns about who or what lies behind it. While one solution could be to engage with making their own GenAI tools, the technical skills and resources needed are not as readily available as the consumer facing tools that are used by the majority of people. Those able to create their own GenAI tools are still among a privileged few. These discussions raised questions about the changing shape of the creative landscape and future demand for media arts practitioners. It suggested the need for a closer examination of GenAI tools in order to try and open up the opaque tools and find an understanding that moves beyond being a consumer or user of them.

Rather than considering all use of GenAI or content produced by GenAI or discussing the wider debates around ethics, economy, ownership, originality and creativity, this paper is concerned with GenAI as it is encountered when using the widely available platforms and tools such as ChatGPT and Midjourney. This is in order to understand how they are currently used and understood. It does not aim to be a comprehensive survey of the kinds of GenAI that exist, or the myriad uses for it. Instead, it will consider how the speed of their adoption and how they are

presented may make a critical distance more challenging and whether Flusser's concepts of the apparatus and the 'gesture' may be useful for understanding them.

Vilém Flusser has been described as a media theorist of similar significance to the likes of McLuhan and Barthes and yet one who remains comparatively obscure by comparison [4]. However, Sean Cubitt [4], Andreas Ströhl [5] and Katherine Hayles [6], among many others, have all noted the value of his work and argued the need for it to be more widely considered. Flusser offers a phenomenological perspective on media that is "provocative, probing, but also lucid, memorable and elegant" [4]. His numerous essays and lectures offer a prescient insight into what he saw as a moment of crisis caused by the arrival of certain technologies such as the camera, video and computer, as the world shifted from one of texts to one of technical images produced by what he called the apparatus. The moment of crisis seems to parallel the current, or at least impending, crisis presented by GenAI. This paper aims to see if Flusser's perspective might provide insight into the current changes and upheavals predicted to follow the arrival of GenAI.

Understanding GenAI as an Apparatus

Flusser distinguishes between 'tool', 'machine' and 'apparatus' [7]. Tools he argues are "extension of human organs" [7]. With the industrial revolution, tools became technical and "stronger, bigger and more expensive" [7] and were called machines. This saw the position of the human change from being at the centre surrounded by tools to humans surrounding the machine and the human a variable in the operation of the machine

[8]. There then follows another change with the arrival of the 'apparatus', the camera among the first of these. If tools are concerned with "tearing objects from the natural world" and transforming them, apparatuses are fundamentally different [7]. Their intention is to not to change the world but to change the meaning of the world. Rather than produce 'traditional images' that are representations of the world, the apparatus produces 'technical images' which are derived from texts. Where "traditional images are mediations between humanity and the world", technical images are "mediations between humanity and texts" [9]. So, for Flusser, "Behind a photograph stands a text of optics, of chemistry, and so forth, a theory that tries to conceive a process" [9]. What this suggests is that what are often presented to us as tools, such as the camera, computer or perhaps even GenAI 'tools', are in fact apparatuses. Rather than extensions of organs, they "simulate technical organs" and see "human beings function as a function of apparatuses" [7].

Flusser's best known description of the apparatus is in relation to photography. The camera presents itself as a tool and appears to simulate the eye, but Flusser argues this is not the case. For Flusser, the camera is an apparatus "programmed to produce photographs, and every photograph is a realization of one of the possibilities contained within the program of the camera" [7]. Despite the photographer seeming to have complete control over the image produced by the camera, every photograph is simply one of the possibilities already contained in the camera. This becomes especially apparent when what Flusser calls 'redundant' images are produced. That is to say an image that does not produce a new possibility from the program. Though the number of possibilities contained in

the program of the camera is vast it is, Flusser stresses, not infinite. Neither are the possibilities contained in the program of GenAI, even though the implication is that it is only constrained by our imagination. A typical Stable Diffusion powered GenAI website claims it can "bring your imagination to life" [10], giving the impression of a tool waiting to be used and with the human at the centre.

In relation to current uses of GenAI, it is often the goal to produce something that will not stand out but instead pass unnoticed as generated by AI by conforming to conventions and banality. In this way, AI generated CV cover letters or emails seem intended to produce redundancy. We might therefore challenge Flusser's assumption that the goal is always to produce new possibilities. However, the point being made is that the freedom we seem to have is in fact constrained by the program. Program here refers not necessarily to computer code but a "hierarchy of programs" and "nested series of black boxes each governed by an elite of functionaries who nonetheless are prisoners of their own apparatus" [4]. As Cubitt notes, even elite functionaries are constrained by the program. Returning to the original context for this paper, if GenAI is to be used to extend creative practice, then being able to avoid redundancy is essential.

What the camera may also share with GenAI is an assumed objectivity. For Flusser the camera apparatus is not objective because what it produces is the product of its program [9]. While GenAI may not necessarily be used to create or capture images of the world, there is an assumed objectivity about the way it creates images or texts. It is assumed that the vast data set and the esoteric

workings of the AI algorithm have uncovered the underlying logic of the way an image or text is composed such that it can now create any image or text according to the underlying 'code' it has discovered. However, as the well-publicised issues with training data sets shows, GenAI can have no claim to objectivity. For example, Wheeler notes the issues arising from the way that training data sets are tagged and the particular influence this has [11].

Although often presented and described as such, GenAI is not a tool. The human is not at the centre of the process, or even at the edges as with the machine. It sees human and apparatus connected, each the functionary of the other. It is the result of many nested programs and consists of the 'apparatus/operator complex' [9]. If we accept GenAI as an apparatus, then the question shifts to how we can challenge the program and so become more than a mere functionary. Flusser distinguishes between those who do not attempt to see outside the program and those who engage in a more critical way. As Cubitt puts it: "those who play in and with the terms image, apparatus, program and information in the effort to produce the unexpected are playing against the camera and against all apparatus bedded in it." [4].

Flusser describes the activity required to challenge the apparatus as play even suggesting a future 'Homo Ludens' capable of mastering apparatuses [12]. The question is how can we be sure we are 'playing against' the program of GenAI? Are we simply mistaking the program for our own free will? This could be seen as simply a matter of critical and reflective practice, but I would argue that for GenAI it is particularly difficult to achieve partly because of the complexity

of the nested programs and partly because of the speed with which they have been adopted and operate.

A Problem of Speed

Writing in 1978 and in relation to the emergence of video, Flusser pointed out that "habit has not yet made the essence of video invisible by its gray and trivializing cover" [9]. He continues: "new apparatus are fascinating for two reasons: they are unpredictable and therefore dangerous [...] and they may be turned away from their original purpose" and secondly, "one may discover unsuspected uses in them and thus turn them around (revolution)" [9].

Engaging with new media at their emergence can be seen as key and distinct from studying media at other stages of their existence. For Christoph Ernst "it makes a crucial difference if we talk about media in their conceptual stage, realized state or vanishing state" [13]. GenAI may have moved past its conceptual stage, but perhaps is has not yet been fully realized. It is however a crucial stage when, despite narratives to the contrary, the future is not set. While the development of AI may appear to be dominated by governments and tech giants, there is a key role to be played by the arts. As Ernst puts it: "when it comes to newly evolving media, artistic practices are of particular theoretical importance. They allow the production of new (re)configurations between imagination and media" [13]. There is still a window for the arts and artists to influence the development, understanding of and relationship with GenAI. If we follow Flusser's lead, then this would involve questioning their programs. However, this is not without particular challenges when they are potentially hidden in plain sight by their creeping yet swift emergence.

The speed at which GenAI has developed has been matched only by the rate at which it has entered the daily lives of people around the world and incorporated into existing workflows, services and activities. One study has called 2023 the breakthrough year for GenAI describing its “explosive growth” [14]. A key driving force behind the rapid proliferation is the ‘arms race’ between some of the largest technology companies including Alphabet and Microsoft who have invested large sums in AI technology [15]. These companies are keen to offer AI products and services to extend and maintain their vast user bases. New ecosystems of GenAI tools are being created as well as being incorporated seamlessly into existing tools. Examples include the integration of AI into search engines and the GenAI features such as generative fill that have been added to Adobe Photoshop’s array of existing tools. This leads to a situation where adopting GenAI is not necessarily a conscious decision on the part of most users. Instead, it is a mere update away as software, services and devices are upgraded. As a result, it may seem like they are part of existing tools and ways of working.

Much of this is accompanied with a rhetoric of efficiency, productivity and speed, often cited as a key benefit of GenAI. The Adobe website describes how with GenAI you can “Quickly explore and experiment with ideas” leading to “More ideas, less time” [16]. It promises to “create dozens of high-quality concepts quickly with results only a few keystrokes away” [16]. Speed might be seen as a defining characteristic of GenAI in terms of the speed of its adoption, pace of evolution and efficiency of production.

This emphasis on speed and productivity

can all be seen as part of Paul Virilio’s description of the increasing speed of life and an accelerated culture [17]. Struggling to keep up with the pace has been the source of much anxiety in many fields not least education and creative industries. This has led to a similar arms race as industries and educators race to tackle this perceived existential threat [18, 19]. Studies and working groups are rushing to put in place policies surrounding teaching and assessment in anticipation of the impact of GenAI.

All this speed has focused attention on the near future that seems to be hurtling towards us. Understanding the projections of the near future are important since as Simone Natale points out “developers play an active role in fulfilling their own prophecies” [20]. So, paying careful attention to predictions is crucial. However, as Marshall McLuhan suggests it is necessary to examine current use as well as the future, not least because this may shape the future. As McLuhan puts it: “at electric speed it is necessary to anticipate the future in order to live in the present and vice versa” [21].

The emergent phase of GenAI may seem to be compressed or accelerated and so the crucial window for shaping them shrinking. Alternatively, it could be seen as in a constant state of emergence that focuses attention on the near future rather than the present. Current programs seem less important than the ones about to appear.

Opacity, Transparency and Surplus

Opacity is a common feature of technologies and computational systems leading to the ‘black box’ metaphor to describe their hidden workings. It is not

uncommon for AI workings to be described as black boxes even by those that make them. The creators will admit that while they may have created the structures and parameters of the system they don't know exactly what is going on inside them [11, 22, 23]. Flusser hints that the appeal of some apparatus lies in the fact they are black boxes, giving them a quasi-magical quality [7], disguising that they are an apparatus and letting us imagine they are a tool. While the underlying technology itself may be opaque, there is also an opacity caused by the transparency of their interfaces. Michael Wheeler notes the drive for transparency that has dominated the design of relationships with technology and that it has been assumed that transparency is a marker of good design [11]. It is interesting to note that Wheeler calls for the metaphor of transparency to be readdressed especially where it involves technologies such as AI [11]. A result of the seamless integration of GenAI into transparently designed systems and interfaces is that they can go almost unnoticed leaving existing interactions largely unchanged. For example, using an AI enabled search engine may not be distinguishable from any other search engine. Generative fill tools appear intuitive, bearing a resemblance to the tools that already exist.

Jenna Burrell argues the importance of understanding the 'black boxes' and tackling the opacity of the machine learning algorithms and systems that have come to control and affect so much of our lives [22]. As well as identifying several different types of opacity, including technical literacy, operational scale and corporate secrecy, Burrell describes the need for 'auditing' the code and software we use. Although she notes, "the workings

of machine learning algorithms can escape full understanding and interpretation by humans, even for those with specialized training, even for computer scientists." [22]. If the internal workings of GenAI may not always be available, then one possibility may be to examine what they produce.

I have previously written about the role and value of the error in creative practice and as a way of understanding computational media [24]. Mark Nunes argues that errors act as critical lenses and can reveal the operational logic of a system [25]. Similarly, the glitch uses error as a way of opening up and resisting the flow of media [26, 27]. When thinking about ways of playing against the program of the apparatus examining errors may be of use. However, in one sense the program of GenAI may resist this where it doesn't produce errors but instead possibilities and versions. GenAI counters errors through excess and an iterative process that always promises to move closer to the desired form. That is not to say that whole websites do not exist dedicated to AI fails [28, 29]. But it notes that as we encounter them, GenAI typically use excess production to mitigate and engineer the experience away from error.

Another defining characteristic of GenAI could be their propensity to generate surplus. While presented as a key feature and advantage of GenAI in marketing literature, this has its own mollifying and disempowering effect. While a strength of generative approaches is to produce variation and possibilities in GenAI, this is often taken to an extreme, magnified by the speed and ease of use. GenAI exists to generate but if the user is disconnected from the process, then their only recourse it to generate more rather than engage

with the means of production.

It is also difficult to tease out error from a system which is constantly changing and adapting. Noting an error on one occasion does not mean that it will be repeated in the future since the system will have changed potentially directly as a result of the interaction that generated the error. Florian Cramer and Matthew Fuller note the asymmetry of the relationship at the interface between human and computer and how the “database can read the user, by means of records of patterns of search terms and choices” [30]. The paradigm of ‘user-friendliness’ can obscure the power (im)balance. The balance is often described as a collaboration which as well as leaning into our tendency to anthropomorphise technology suggests a more equal relationship than we may actually experience or be able to discern. It acknowledges the influence of AI but also suggests a level of control and freedom on the part of the human. This goes with the rhetoric of empowerment, whether in saving us time, or by reducing creative technical barriers.

As well as examining the products of GenAI, we might also consider the act of using them or what Flusser might describe as the ‘gesture’, honing in on what may otherwise be obscured by transparency, opacity or speed.

Prompts and the Gestures of GenAI

Teasing out a novel outcome from the GenAI program involves the new art of ‘prompt engineering’ or even ‘prompt whispering’ [31]. This may suggest one way to play against the program and yet it also reinforces the GenAI as an apparatus rather than a tool. When considering the prompt, we might turn to another of

Flusser’s key concepts, the gesture. For Flusser a gesture “is a movement of the body or of a tool connected to the body for which there is no satisfactory causal explanation” [32]. Many gestures exist and Flusser describes several of them including the gestures of photography, painting, searching and smoking a pipe [32]. Flusser aims to “feign ignorance of the meaning of *affect* and, by observing gestures, try to discover what people mean by this word. It is a kind of phenomenological effort, through the observation of gestures, to take affect by surprise” [32]. Many gestures of GenAI would seem to exist given particular given the way that it appears to have been incorporated into existing gestures. If we were to look for a gesture that is synonymous with GenAI it might be the prompt.

The gesture of the prompt, particularly where they involve language, gives the impression of a discourse and an exchange or flow. It seems to ‘slide’ much like the sliders of GUIs setting parameters and looking to define an area rather than an outcome. Flusser argues that machines and indeed the world do not slide but stutter, like the clicks of a typewriter or the keystrokes of a computer keyboard [8]. For Flusser, describing the world and calculating it are different and irreconcilable [8]. From this perspective the ambiguity of the prompt disguises the need for an underlying computation that demands reducing the world to particles. The prompts must be reconciled or reduced to the tokens of the system. Prompt engineering is the process of expressing an intention in tokens. A game of guessing and searching for the right tokens to produce the result we want or, to use Flusser’s terms, a novel result from the program. Midjourney offers to ‘bring imagination to life’ but to do so we need to

'write better prompts' or turn to 'libraries of prompts'. This may seem like a return to the tool, bringing us closer to the centre. Alternatively, it could be seen as playing on the terms of the apparatus.

The prompt is fundamentally different to the command line prompt. Prompts are not like the instructions given to machines, nor are they the variable in the machine. It may appear as a command, but it is a muted expression of will, full of doubt and uncertainty. When a prompt does not return the result we wanted, we must go back and revise our prompt, but the same prompt does not always return the same result. This is not the recalcitrance of the GenAI like the resistance of wood diverting the cutting edge of a tool. This part of its program as an apparatus.

The gesture of the prompt shows that GenAI is not like a tool. It does not flow or slide. It is calculation disguised as description. No matter how close we appear to be to the centre or how small the apparent distance between us and the images and texts produced, we are separated from them by program of the apparatus.

Conclusion

Flusser is often seen as having a pessimistic view of our relationship with media, ruing the decline of the written text in favour of the technical images of the apparatus. However, his is a more positive view than commonly thought since, for Flusser, technology has the capacity to be humanising and enable greater communication. [33] In the introduction to his collection of essays and lectures 'Post-History', Flusser notes the thread of despair towards hope that runs through it [33]. He imagines a future in which "Thanks to robots, everyone will be linked to everyone else everywhere" [8]

and where "future functionaries equipped with tiny or even invisible robots will be engaged in manufacture all the time and everywhere" [8]. Although his rather utopian prediction that "giant industrial complexes of the machine age will die out like the dinosaurs" [8] now seems slightly naïve.

All this, however, is only possible if we continue to play against the program of the apparatus. GenAI are not tools or machines. Thinking about GenAI as an apparatus acknowledges the apparatus/operator complex in which each is a functionary of the other. Flusser offers play and playing against as a way of trying to breach the constraints of the program. However, GenAI poses some particular complications due to their gestures being hidden inside or masquerading as other gestures and the pace at which the program changes. What this suggests is the need for a closer examination of the gestures of GenAI and the creation of new gestures. These might be closer to Flusser's description of the gesture of painting, which places emphasis on process [32]. Or the gesture of making which Flusser describes as "striving for wholeness but forbids reach of it". [32] New gestures have and are emerging but perhaps they go under-observed.

Returning to the original motivation behind this paper, the apparatus and gesture offer a way for students of creative practice to examine their own use of GenAI, by encouraging them to look for the programs and to play against them by devising new gestures.

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