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Grand Theft Autoencoder

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Abstract

The implementation of generative models in deep learning, particularly those of Text-to-Image Synthesis (T2I), are essentially an exaptation of the cognitive processes of the transcendental imagination Kant outlined in his notoriously opaque schematism chapter of CPR. While such engineering feats mirror the liberating force of photography's invention, they have also proven to be a significant engine for reproducing saturated ideologies of art pivoting on claims about what has been stolen by the machine. This paper argues that T2I presents an opportunity to instead reconsider what our models of the procedures of the imagination actually are or could be, and wagers that the interdisciplinary conceptual frameworks supporting machine learning enable us to recuperate from an "incommensurable" synthetic intelligence the necessary resources for revising our understanding of what creativity is and does, with pattern recognition providing the tools for a renewed elaboration of *techné* to pull a heist upon the transcendental itself.

Keywords: Predictive Processing, *Techné,* Pattern Recognition, Schema, Representational Redescription

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1. The Heist

In any storyline where theft is an element of the plot, it matters little whether the heist appears at the beginning or the end because the heist is always already taking place. Its objectives and its operativity are an evolution and development of means and invention, with the manipulation of form, matter, and intelligence doubling as loot and getaway van. As was already observed in ancient Greek culture,[1] the ability to achieve change in environmental circumstance toward advantage readily extends across the history of biological life, encoded conceptually for Western intellectual history as art, *techné*, craft, engineering, or for the 21st century with generative technologies and creativity. In the contemporary situation, new statistical machine learning algorithms have led to some mainstream suggestions that text to image synthesis AI models (T2I) are nothing short of the perpetrators of an art heist whose consequences achieve world historical proportions. In this context, we should approach the heist from the perspective of organized crime outlined by Hohimer in *The Home Invaders* to ask how we might have seen it coming:

> You can bank your life on three things. The outfit sent him. He knows every piece of jewelry in your house. And he is a professional. The mob keeps crews working around the nation and they never miss. They know exactly where they are hitting, and what they are getting. Their information is precise, there is no guess work. It comes from insurance executives, jewelry salesmen, auctioneers of estates. The same guy who sold you the diamond may be on the corner pay-phone before you get home.[2]

With Big Tech in the leading role of thief, generic humanity and the imagination are staged as victims largely unaware of what has been stolen beyond dubious claims concerning the ownership of "style." Is it possible in this circumstance to wager that something has been taken *for* intelligence and not from it? If at stake is a reconfiguration of aesthetic categories at the expense of their consistency vis-à-vis the deliberately obscure metaphysical assumptions about the nature of creativity encountered in both popular culture and the institutions of culture, the answer should surely be yes. In an unwitting complicity with the machine's heist, our access to the internet has been defined in part through lures of agreement in the (sometimes) casual depositing and labelling of images where user interface design implements a scrim of subterranean pathways known

1 See Marcel Detienne and Jean Pierre Vernant, *Cunning Intelligence in Greek Culture and Society,* trans. Janet Lloyd (University of Chicago Press, 1991).

2 Frank Hohimer, *The Home Invaders: Confessions of a Cat Burglar* (Chicago Review Press, 1975), xviii.

as dark patterns.[3] In this obsessive hoarding of loot the estimated number of images is in excess of 700 billion. Comparatively, the LAION 5B dataset adopted by current T2I technologies comprise only a small portion of this, with 5.85B CLIP-filtered image-text pairs. Yet this modicum will prove sufficiently complex for computation's abstract and synthetic imagination to perform an associative swipe through the emergent schema of connectionist networks that reflects more than the banal fact of images made by humans, freely available on the internet, that it imitates, mimics, transforms, or fakes. This is because the machinic copyist can be seen as having been designed all along from mimetically collected images of the biological brain at every level, stealing away the bulk of discoveries about organic vision systems and the syntactic elaboration of reasoning along the way. Computational Creativity, while predicated upon generative productions obtained from discoveries in pattern recognition research, has introduced novel forms of *mis*recognition—a misrecognition that it will be argued should include the false consciousness of internet natives duped by a contemporary social function of creativity.[4]

Creativity, having been subtracted in its modern form from its classical and theological constraints of *ex nihilo*, now provides administrative ideological support to the bulwark of common sense that presumes the inventive agencies of any given subject. This valence, occasionally sutured to notions of a 'will-to-form', gains traction only in the 20th century, metastasizing today through the imperatives of self-authorship in online behaviours, to which the empty structural place of artist or creative is readily occupied by generic T2I users. The ensuing critical response from "creative professionals," many of whom have had their work used in the training data, converges on a consensus that the capacity for art is discoverable in life alone. For those users that "already know the score," it is possible to find deferrals to conceptual practices with language as in the example of 'propositional attitudes' of a Lawrence Weiner or the "general social technique" that Duchamp's strategies highlight.

The Neural Network Zoo[5] is now also a zoo of aesthetic *types* where the forgery, the fake, and the counterfeit are all family, in the mafia sense of the word: collaborators but also conspirators perennially involved in *shady business*. Of course, as Plato should remind us, when it comes to images, we can never be sure whether or not we might just be getting *set*

3 The term was first coined by Harry Brignull in 2010. For an extensive list of examples see Brignull's Deceptive Pattern Initiative Hall of Shame at https://www.deceptive.design/hall-of-shame

4 Not to leave out a generalized deception which we all must now contend with regarding AI images masquerading as documents with an origin external to the machine, as a recent study puts the human misclassification rate at 38.7%. See Zeyu Lu, Di Huang, Lei Bai, Xihui Liu, Jingjing Qu, and Wanli Ouyang, "Seeing is not always believing: A Quantitative Study on Human Perception of AI-Generated Images," *arXiv preprint arXiv:2304.13023* (2023).

5 Fjodor Van Veen and Stefan Leijnen, *The Neural Network Zoo* (2019), https://www.asimovinstitute.org/neural-network-zoo

up. This is why for intelligence the heist should all already be old hat. The archives (and the markets) of both antiquity and modernity are saturated with copies, forged signatures, and faked originals, with the counterfeit document playing no insignificant role in ensuring a successful duping of both casual connoisseur and expert. Art historian Francis Halsall has suggested an information-theoretic evaluation of the artworld as a system structurally configured not unlike the "complex system of *distributed* representation"[6] of connectionist networks undergirding T2I models. It helps to explain the efficacy, in Halsall's example for instance, of John Myatt and John Drewe's forgery ring that netted approximately 2.5 million pounds through a meticulously crafted false provenance "because Drewe was able to redirect information and thus provide opportunities for the genuine fakes to be represented over the gallery system as authentic."[7] The timing of the media affair with the British Museum's *inside job* along with their simultaneous platforming of the international touring exhibition *The Art of Imitation* couldn't be more perfect. The assumption of a divide between mimicry and creative authenticity serves as a departure point not because T2I seriously disturbs an already agitated modernist trope of the relation between originals and copies (although it assuredly does), but because it forces consideration of a problem with even greater logical depth concerning how we externalize images through creative procedures to begin with, and what we consider sufficient criteria of explanation for images and their perception to be more generally. The psychology of vision and the study of illusions have often asked a question that it seems appropriate to revisit: "Can you trust your eyes?"

2. Inventory: The Image and Intelligence and Images of Intelligence

The item inventories in video games are notorious for their improbably bloated collection of resources, an abstract capacity analogous to those one finds in contemporary theories and ontologies of the image. This is the case as much for the "pictorial turn" addressed by W.J.T. Mitchell's *Picture Theory* as for the "aesthetic turn" in the 'French situation' of Patrick Vauday's *The Invention of the Visible* as neither depart in their investigations without first listing everything in the safe. Without being exhaustive, these inventories will at least include the contributions of those whose work since the 19th century initiates a certain formalism such as Herman von Helmoltz, Irwin Panofsky, Rudolf Arnheim, and E.H. Gombrich. Additionally, Jonathan Crary's homogenized epistemological landscape in *Techniques of the Observer*, Mitchell, or the philosophical anthropology of objectivity in

6 Francis Halsall, *Systems of Art: Art, History and Systems Theory* (Peter Lang, 2008), 156. See also Friedrich Teja Bach, "Forgery: The Art of Deception," in *Faking, Forging, Counterfeiting: Discredited Practices at the Margins of Mimesis,* ed. Daniel Becker, Annalisa Fischer, and Yola Schmitz (Transcript Verlag, 2018).

7 Halsall, *Systems of Art,* 156.

Lorraine Daston and Peter Gallison, would be among shortlists providing current image theory with the salient features for critical attitudes towards networks, surveillance, Big Data, etc., that could be caricatured as a 'diagrammatics of control'. In their construction, images are always a trace of techniques of production taken and to be obtained—copied, imitated, learned, or stolen. With Plato's Sophist we find that the non-being of the image also *is*, and that with the fashioning of images comes also the introduction of what Andrea Mecacci has noted is the "first degree of a possible technique of deception" enabling the proliferation of simulacra and doubles derived from a technically constructed match between appearance and sensation.[8] The image, to use Vernant's terminology, finds its "psychological career" only after Plato,[9] and the fake or counterfeit image, often under the aegis of kitsch, is crystalized in modern and contemporary visual practices, which include art as much as advertising.

The technological shifts "altering the conditions under which human vision articulates itself"[10] that Mitchell admits to not being the first to observe will lead directly to the 'postconceptual condition' of contemporary art as outlined by Peter Osborne, where the digital image becomes its own referent and the photographic becomes a general function within art.[11] Contemporary art will respond to such reconfigurations in-kind with interventions such as the methodologies and protocols suggested in Seth Price's *Dispersion* (recently celebrating its porcelain anniversary), Hito Steyerl's notion of 'poor images' with their questionable genealogies and capacities for 'creative degradation', or the nostalgia for pocket Polaroids one finds in Trevor Paglen that registers in outline a certain cultural consensus regarding how "[m]eat-eyes are far too inefficient to see what's going on anyway."[12] Such a consensus does not favour an ostensible superiority of machine vision but rather outlines a generalized suspicion of technology, although only Price seemed interested in explicitly manipulating the "social ontology" of images by aligning their construction in art with the discourses of suspicion and critique, anticipating an historical moment Halsall will christen in no unsubtle terms as "The Age of Dispersion."[13]

8 Andrea Mecacci, "Aesthetics of Fake: An Overview," *Aisthesis: Pratiche, Linguaggi e Saperi de ll'Estetico* 9, no. 2 (2016): 60–61, https://doi.org/10.13128/Aisthesis-19416

9 See Kamelia Spassova, "J.P. Vernant on Plato's Mimetic Theory: Images, Doubles and Simulacra" *Platonic Investigations (Платоновские исследования)* 14, no. 1 (2021), https://doi.org/10.25985/PI.14.1.01, and Richard Neer, "Jean-Pierre Vernant and the History of the Image," *Arethusa* 43, no. 2 (2010), http://www.jstor.org/stable/44578325.

10 W.J.T. Mitchell, "The Pictorial Turn," *Artforum* 30, no. 7 (March 1992): 94.

11 Peter Osborne, "Infinite Exchange: The Social Ontology of the Photographic Image," *Philosophy of Photography* 1 (2010), https://doi.org/10.1386/pop.1.1.59/1. See also Koray Değirmenci, "The Ontology of Digital Photographs and Images," in *Art-Sanat Dergisi* 8 (2017).

12 Trevor Paglen, "Operational Images," *e-flux* 59 (2014): 2.

13 Francis Halsall, *Contemporary Art, Systems and the Aesthetics of Dispersion* (Taylor & Francis, 2023).

This dispersion, and "the conditions of ubiquitous image saturation" art historian David Joselit relates to its cause,[14] Halsall will also wager are analogous to the "distributed representations" of machine learning connectionist models. Implicitly, this will intersect with what, from within the purview of contemporary visual culture studies, are typically less visible coextensive historical trajectories in the psychology of vision that replace gestalt theory with pattern recognition and information-theoretic perspectives during the 20th century.[15] From here, and motivated by Helmholtz's proposal of a learning function according to 'unconscious inferences' in perception, knowledge of segmentation in the brain of local neural substrates for detection, discrimination, and recognition directly inspire image segmentation in the machine, where edges and features can be mapped onto categories, shaping the implementation of the more recent deep learning architectures that now produce AI imagery. These experiments traverse an elaboration of procedures that are not easily captured by rationalist descriptions of thinking as symbolic manipulation. As a 'practical intervention' into the assumptions of knowledge-acquisition defended by "symbolic AI" or "good old fashioned artificial intelligence" (GOFAI), connectionism establishes itself through an alignment with a different modality of manipulation dependent on the "emergent abilities" of a learning function that will come to find among its contemporary conceptual and theoretical armament the frameworks of 4E cognition (embodied, embedded, enactive, and extended). However, this 'paradigm shift' is not without its problematic contradictions, especially concerning assumptions of embodied knowledge as uniquely indicative of "what the computer can't do" that seem to be undermined in the contemporary situation of evolving implemented abilities and techniques in the 'disembodied machines' of deep learning.[16] The question remains open of how to devise an effective escape route out of GOFAI, Searle's Chinese Room, or Turing's Imitation Game and their 'symbolic capture'. Between 'propositional attitudes' and the 'non-inferential' (or 'not rule-governed') processes of "creative intelligence" now hijacked by the algorithm, can assessing what has been stolen into synthetic creative processes also provide a window of access into the intelligibility of what cognitive operations artistic procedures are performing?

14 David Joselit, *After Art* (Princeton University Press, 2013), 88.

15 On the 'clear and distinct' line from this to today's 'visionless machines', see especially Berkay Üstün, "From Gestalt to Pattern in Post-War American Aesthetic Theory: The Works of Rudolf Arnheim and György Kepes," *Uludağ Üniversitesi Fen-Edebiyat Fakültesi Sosyal Bilimler Dergisi* 24, no. 45 (2023).

16 See Hubert Dreyfus, *What Computers Still Can't Do: A Critique of Artificial Reason* (MIT Press; Revised Edition,1992). I am thinking here especially of how debates initiated by Dreyfus and others are situated in the dilemmas that Pietro Perconti and Alessio Plebe address in the history of deep learning regarding embodiment and 4E cognition against the backdrop of recent advances in AI. See Pietro Perconti and Alessio Plebe, "Deep Learning and Cognitive Science," *Cognition* 203 (2020): 104365, https://www.sciencedirect.com/science/article/abs/pii/S0010027720301840.

3. Technique

"The first pebble to crack a nut replaces the teeth."
- Michel J.F. Dubois

No heist is of great interest that makes too apparent how the job was done, and deception is a hard rule. In the history of fakes and forgeries the art of deception runs amok against the art of detection, with contemporary forensics now a formidable adversary supported by the instruments of science and AI. The prevalence of *fooling* over truth may appear now more weighted than ever, but does not present a significant break with the role of mimesis that historically posits a structural identity between art and nature, of which the contemporary cultural function of creativity bears a trace.[17] Derived from the role of genius in Kant where the rules of art are deemed inaccessible to the rules of intelligibility (famously by way of the schematism chapter in CPR then elaborated in CJ), the new metaphysics of nature he initiates will obscure—via German Romanticism's sway over the trajectories of artistic modernism—how artistic techniques are founded on modes of imitation, citation, and mimicry. Gombrich explained these in a distinctly Kantian flavor as the manipulation of schemas conventional to all practices of image-making, and the paintings of Nicolas Poussin, for instance, exemplify this as a deliberate and common practice.[18] Where artistic conventions could be characterized and inventoried, such schemas would also come to inform the 'troubling' productions of representational objectivity with scientific images in the 20th century.[19] If we depart from a critical position and follow Mitchell, the computational mastery of images appears analogous to what he saw in the manipulation of pictorial form as "the basis for control over others" in that deception in visual practices, such as in trompe-l'œil, doubles as an affordance for the lures, dupes, and illusions of advertising or even propaganda, simply because "pictures are made out of other pictures, not out of 'reality'."[20]

Perhaps then to address the problem of how deception is always at play in AI imagery we might ask: when did *planning* first begin? If we follow Dubois (who draws as heavily on André Leroi-Gourhan's *Gesture and Speech,* as Deleuze and Guattari do in *A Thousand Plateaus*) and consider only a certain trajectory of sapience in the seven million years of

17 See Hans Blumenberg and Anna Wertz, "'Imitation of Nature': Toward a Prehistory of the Idea of the Creative Being," *Qui parle* 12, no. 1 (2000).

18 See Richard T Neer, "Poussin and the Ethics of Imitation," *Memoirs of the American Academy in Rome* 51 (2006).

19 See Lorraine Daston and Peter Galison, "The Image of Objectivity," *Representations* 40 (1992), doi:10.2307/2928741, and Lorraine Daston and Elizabeth Lunbeck, eds., *Histories of Scientific Observation* (University of Chicago Press, 2019).

20 W.J.T. Mitchell, *Picture Theory: Essays on Verbal and Visual Representation* (University of Chicago Press, 1995), 341–342.

evolution to human minds, capacities for reasoning through the prosthesis of language are coextensive with the appearance of technique through processes of internalization and externalization, where linguistic function becomes transmissibly encoded in tools and sets of skills, including those of art.[21] In this case, the basis of any practice of deception and planning can also be understood according to the emergence of environmental simulations that Peter Gärdenfors has termed "detached representations" which "presupposes that the inner environment of the deceiver contains some form of *representation of the inner environment of the target individual.*" (original emphasis).[22] As abilities gained from a modelling function evidenced across biological life observable in particular with predator-prey relations, their technical externalization into images by humans develops according to logics—and according to the development of logic through detachment—where the artefact is but one instantiation of these procedures, further exapted from their externalization through the *techné* of art into the 'unarticulated knowledge' of technique as an object of Computational Creativity's research.

What is creativity's unarticulated knowledge? For machine learning, schemas and abilities of planning depart from the explicit rule-based interpretations of technique through a modelled capture of classical articulations of *techné* or the aporias of 'how things are done' from antiquity into the Aristotelian-inspired 'microcognitive' frameworks of patterns of neural activation processes discoverable in psychology and cognitive science. In a sense, the "emergent abilities" of AI are heir to certain understandings of creativity and intelligence dependent on a generic 'working' of material 'without symbolic exchange'. We could, apropos Jason Tuckwell's escape route, take this as an opportunity for fundamentally reconfiguring *techné* as a practical concern with procedures of indeterminate *deviations* from representational models and the Platonic Forms towards particular instances of activities interested only in its means as "the transformation of an efficient cause, directed upon the material."[23] In Tuckwell's parlance and under a Deleuzean aegis of the 'problematic', these enacted interventions enter a trajectory of "operating discrete workflows"[24] that generalize creativity in an embodied logic of escape from determinations in symbolic capture. This might provide one way to understand, pace

21 See Michel J.F Dubois, *Humans in the Making: In the Beginning was Technique* (John Wiley & Sons, 2020).

22 Peter Gärdenfors, "Cued and Detached Representations in Animal Cognition," *Behavioural Processes* 35, no. 1–3 (1995): 269.

23 Jason Tuckwell, *Creation and the Function of Art: Techné, Poiesis and the Problem of Aesthetics* (Bloomsbury Publishing, 2019), 122.

24 Tuckwell, *Creation and the Function of Art,* 55.

the repetition of this aegis in Vauday, what is at stake in a 'politics of the image',[25] where the image serves as pragmatic relay between the propaedeutics of subjective dissolution in a practical material distinguishing itself from the evacuation of the body by the structuring formalism of models that "regulate" particular deviations of workflows in production. Here, technology and craft are the appropriate caricatures of such regulation, since they capture, articulate, and imitate for the purposes of repetition the manner in which "*technē* is a functional agency or computor, because what it precisely engages in is *logistikós* (calculation), even though this can be understood via the more generic *epistasthai*: the exchange, in the broadest sense, of 'knowing how to do'."[26]

However, if creativity is figured only according to the generative constraints of embodied 'microcognitive' procedures of deviation by appeal to their attendant 'gut feelings', the articulation of technique is at risk of being obscured in a generic indeterminacy since it inverts an 'a priori' *function* of *techné* by flattening it onto immanence as the deviant escape from transcendental determination. Explicit indetermination does not resolve the problems of creativity in claiming they are only intelligible as an evasion of the procedures that make rules explicit through determinations. Where the articulation of artistic technique lapses—and to much fanfare—into simply *doing things to other things* by way of 'unmediated intuitive access' absent of determination, as Adrian Piper makes painfully clear, it would actually be impossible to have any empirical experience without such determinations (in her Kantian enumeration, those of quantity, quality, modality, relation, and the capacity of judgment).[27] In something of a reprise of her early essay "In Support of Meta-Art," Piper will polemicize this attitude, familiar to canonical artistic modernism as much as contemporary artistic practices, by noting that "at least according to Kant's technical definition of knowledge, artists do not know what they are doing" and that "the purposeful character of the artistic process" demands a "distinction between knowing that and knowing how – i.e. between knowledge by description or propositional

25 "A politics of images is understood in the sense of the exception that comes to perturb the reign of perceptive norms by switching between image regimes and by scrambling and contradicting received identifications. A deviation [écart] is the appropriate term for this change: it is a sidestep and a displacement that shows things as otherwise and shows something other. At the same time, this indicates a quartering [écartèlement] that stretches the scene of the visible to the point of a laceration that discloses its limits, oversights and deceptions. If it has the effect of rendering the invisible visible, it is not in order to accede to a transcendence of the unrepresentable but to give a legitimate place to what is excluded by the very institution of the stage of the visible. This is because the visible is never as pure as phenomenology desires it to be. It is the stage of a complex montage, an apparatus articulated by a system of configuration and nomination which does not make beings, things, places and relations visible without also occluding others. One image always hides another." Patrick Vauday, *The Invention of the Visible: The Image in Light of the Arts,* trans. Jared Bly, (Rowman & Littlefield, 2017), xxiv.

26 Tuckwell, *Creation and the Function of Art*, 117.

27 Adrian Piper, "Intuition and Concrete Particularity in Kant's Transcendental Aesthetic," in *Rediscovering Aesthetics,* ed. Francis Halsall, Julia Jansen, and Tony O'Connor (Stanford: Stanford University Press, 2008), 200.

knowledge on the one hand; and practical or applied knowledge by acquaintance on the other."[28]

The problems of skill acquisition and the articulation of the development of techniques situated in the relay between implicit and explicit forms of knowledge has remained a driving force in the history of machine learning, but is also manifest in divides since the late 19th century between rationalism and empiricism that converge on debates that contour what Joseph Rouse has referred to as the "practice industry" with Heidegger and Wittgenstein as philosophical precursors.[29] It could even be argued that, having no model of an external world, AI might even be seen as operating on the implicit knowledge of its background data set. If *techné* as deviation of efficient causality could be subsumed under any model, it would be that of *amnesia.* In Gilbert Ryle's classic argument, the performer of implicit know-how shows no indication that they "recite lessons" through the manipulation of symbols which would be some obscure "second set of shadowy operations."[30] Ryle's critical intervention concerned interpreting know-how as an activity that couldn't possibly acquiesce to being determined according to explicit rules, yet this only opens the door for us to consider know-how as a clandestine and shady operation itself. Apropos Wittgenstein, the 'effective mastery' of technique through acquisition of skill functions only insofar as there results a forgetting of determinable techniques.

All the same, while the heuristics of *techné* disguise their patterns, that deception is itself also a pattern. We could here consider how art, aesthetics, and creativity have historically constructed similar attitudes towards "process," with Serra's "Verb List" as an exemplar: it is something akin to a 'set of instructions without instructions', just as the actually engineered bike is the index of specific activities performed on a material that wouldn't require recitation of their rules each time we take a ride. To roll, to cut, to wrap, to cover, to smear, etc. To 'know how to do' with a material, as with pictures in Joselit's analysis of Price's methodology, is to engage in enacting and activating a force upon things or even people, highlighting a 'sinister principle of manipulation' as much as Mitchell concerning the digital image with a litany of performed operations that include encircling, binding, tying, hiding...All of which are devised to match or mimic "the behaviour of pictures within digital economies."[31] We could then consider evaluating the behaviour of pictures

28 Piper, "Intuition and Concrete Particularity in Kant's Transcendental Aesthetic," 198.

29 Joseph Rouse, "Two Concepts of Practices," in *The Practice Turn in Contemporary Theory,* ed. Cetina, Karin Knorr, Theodore R. Schatzki, and Eike Von Savigny (Routledge, 2005), 198.

30 Gilbert Ryle, *The Concept of Mind* (Routledge, 2009), 38. Ryle will also say that "[k]nowing *how*, then, is a disposition, but not a single-track disposition like a reflex or a habit. Its exercises are observances of rules or canons or the applications of criteria, but they are not tandem operations of theoretically avowing maxims and then putting them into practice." (34).

31 David Joselit, "What to Do with Pictures," *October* 138 (2011): 82 http://www.jstor.org/stable/41417908. Accessed 15 July 2023.

and what is done to them according to what in this problematic field Ryle refers us to as "mental-conduct concepts": "'logical', 'witty', 'observant', 'critical', 'experimental', 'quick-witted', 'cunning', 'wise', 'judicious' and 'scrupulous'."[32]

Lists of procedures or instructions germane to the fascination with systems from the 60s up to Price's *Dispersion* all emerge from within a technical space that is ultimately that of a heuristics for artifice that grounds certain practices in art—where, as in William Wimsatt's work, "artificial things are products of design processes or, more generally, of selection processes."[33] Where *recognition* of patterns poses the problem of normativity, of rule, of criterion of correctness, John Haugeland has suggested that their apprehension is inversely non-propositional, which in his estimation is "the true import of the phrase 'you know one when you see one': recognition is essentially a *skill*. It can be easy or arduous to acquire; but once mastered, it can be performed reliably and consistently" (original emphasis).[34] A pattern (as *παράδειγμα* or paradigm, sample, for example) is what can be acted upon, in the absence of which there is only the noisy environment where pace Piper empirical experience of objects would be impossible. If pattern recognition, as Satosi Watanabe has shown, is an epistemological problem of how we go about discerning invariant properties through generalizing inferential procedures, it is because "[t]here is no fixed rule for the recombination by the imagination" that we defer the procedures to "certain guiding principles" of heuristics in the "general field" of memory.[35] But it is also a methodological one appropriate to what Don Ross first referred to as a "Rainforest Realism" in assessing what Dennett understood as Real Patterns to be an inquiry into fundamental ontology, which, opposite Quine, would not attempt to clear away tropes but rather proliferate them as possible physical perspectives.[36]

It is pattern recognition's transit between lower-order features and higher-order cognition that makes its exercise non-trivial.[37] Images matched to objects using rules against the background of techniques that can't be said to follow them explicitly, is the sense in which Wittgenstein may have expressed it. In a sense, this could be seen in Gombrich's perspective as the "principle of adapted stereotype" where "no attempt to create an image

32 Ryle, *The Concept of Mind,* 14–15.

33 William C. Wimsatt, "Heuristics and the Study of Human Behavior," in *Metatheory in Social Science: Pluralisms and Subjectivities,* ed. Donald W. Fiske and Richard A. Shweder (Chicago, IL: The University of Chicago Press, 1986), 294.

34 John Haugeland, *Having Thought: Essays in the Metaphysics of Mind* (Harvard University Press, 2000), 279.

35 Satosi Watanabe, *Pattern Recognition: Human and Mechanical* (Wiley, 1985), 56.

36 See Don Ross, "Rainforest Realism: A Dennettian Theory of Existence," in *Dennett's Philosophy: A Comprehensive Assessment*, ed. Don Ross, Andrew Brook, and David Thompson (MIT, 2000).

37 See Robert P.W. Duin and Elzbieta Pekalska, "The Science of Pattern Recognition. Achievements and Perspectives," in *Challenges for Computational Intelligence*, ed. Włodzisław Duch and Jacek Mańdziuk (Physica-Verlag 2007).

is exempt from the rhythm of schema and correction." [38] If *style* amounts to anything, it is a distortion (or deviation) through copying, and the synthetic integration and transformation of images and their components through 'stages of schema and correction'. Similarly for Peirce, the general features of ideas can both be seen as schema and a kind of stereotype, albeit in a form of caricature that, unlike the fixed knowledge of machine learning's eigenfaces, remains in continuous transformation by rules of connections, abductions, and anticipations.[39] In his classic work on vision, David Marr's claim is that "the apparent simplicity of the act of seeing" is undermined once we learn that there are rules and procedures that are "exactly what vision is about, and precisely what makes it complicated."[40]

If for Mitchell, the analyses of Foucault and Wittgenstein made images more difficult to articulate, we should consider how AI images manifest as 'representations of procedures of representation', and how T2I models have palpable consequences for positions such as his, following Nelson Goodman, that "[n]o amount of description [...] adds up to a depiction."[41] It is not difficult to move from here to the 'propositional attitudes' of conceptual and postconceptual artistic practices, as has already been noted. What is assumed to be the result of non-propositional and therefore not rule-governed *techné* turns out to be amenable to description, as clearly demonstrated by the algorithm. What, after all, is the reward in claiming that T2I generates images incommensurable with the "embodied procedures of art"? It could be said that Ernst Cassirer had already presaged an escape route from the incommensurability of the Kuhnian paradigm shift in the 1950s, since the stability of reality in science, its 'fixing' of images and images of itself, appears "only as a continually renewed illusion, a phantasmagoria, in which a new picture momentarily displaces all the earlier ones, only itself to disappear and be annihilated by another."[42] While this characterization may seem indicative of the 'shift', it is recuperated in how Cassirer refashions a more post-Kantian version of Helmholtz, who insisted vision and perception were learned rather than innate, to say that even if the object of knowledge is 'given *a priori*' it can only be apprehended in perception *in actu* according to a process of serial transformation (what for Kant would be the "time determinations" of the schematism).

Technique, confronted with the perceived difference of an incommensurability between paradigms systematically integrates towards methods for detecting invariant patterns

38 Ernst Hans Gombrich, *Art and Illusion* (New York: Pantheon Books, 1961), 58.

39 Christopher Hookway, "'... A Sort of Composite Photograph': Pragmatism, Ideas, and Schematism," *Transactions of the Charles S. Peirce Society* 38, no. 1/2 (2002).

40 David Marr, *Vision: A Computational Investigation Into the Human Representation and Processing of Visual Information* (MIT press, 2010), 30–31.

41 Nelson Goodman cited in Mitchell, *Picture Theory*, 152.

42 Ernst Cassirer, *Substance and Function* (Dover 1953), 266.

that emerge across serial transformations it initiates through relational frames of reference. A concrete example, noted even by Mitchell in his remarks on Frank Miller's 1986 *The Dark Knight Returns*, is the technical lineage one finds in comic book illustration, which elaborates the tools and techniques of its diegetic space and does so according to the shaping of visual practices in every other domain of image production. This is performed and exaggerated to such an extent that the ability of the machine to replicate its schemas should not be seen as surprising. Miller, incidentally, had already developed a method for creating 'poor images' in his later *Ronin* series as a direct response to the innovations of smooth printing on Baxter paper that eliminated the effects of a lineage of techniques derived from anticipating the low-quality results of traditional printing technologies. If we want to call this "regulation" of techniques craft instead of art, only a thoroughgoing self-deception could uphold the distinction. *Style*, insofar as there is such a thing, emerges through a traceable constellation of constraints and the manipulation of generic properties of schemas to which AI imitations appear, to borrow Panofsky's term of deceptive circumstance, pseudomorphic, in that given they arise from entirely different contexts that use shared schemas, the one is not *necessarily* in every case the imitation of the other, nor are they identical.[43] That both are distributed images authorizes that they are ontologically made up of the same 'stuff', which would also seem to make any claim that the patterns identifiable as images of art carry more metaphysical weight than images from the machine appear as unwarranted.

4. The Getaway

As with certain cuisine and mixology, it can sometimes be good to end on a sour note. A consequence of the public reaction to computational creativity in T2I that separate themselves out from these systems into an elsewhere that the authenticity of artistic procedures is said to inhabit unwittingly reinforce a fairly saturated romanticism that, in its efforts to preserve a particular image of the human, defaults into a pattern of behaviour isomorphic with what Piper, borrowing the term from Kant, refers to as *pseudorationality*. As a cognitive response to the phenomenal encounter with an object or image (in this case the abilities of AI as anomalous) the salient features of which cannot be discerned or mapped onto a subject's existing categories of determination, this demand of preservation rationalizes the object in an inverted mirror by eliciting a mode of self-deception. As Piper argues: "if a necessary condition of unified selfhood is its internal horizontal and vertical consistency, then the self is disposed to preserve that consistency—i.e. is disposed to literal self-preservation—against anything that threatens it."[44]

43 See Yve-Alain Bois, "On the Uses and Abuses of Look-alikes," *October* 154 (2015): 130.

44 Adrian M.S. Piper, *Rationality and the Structure of the Self, Volume I: The Humean Conception* (Berlin: APRA—Adrian Piper Research Archive—Foundation, 2013), 36.

It should be pointed out that the *pseudo-* of pseudorationality is in no way irrational, but rather a fooling procedure of a fully rational cognition confronted with indeterminacy. In creativity's various guises, indetermination in the intervention into efficient causality is matched by an indetermination of interpretation committed to an opacity of empirical intuition as phenomenal truth, under the cover of 'liberated' imaginative and creative manipulations disturbing the regulative idea. Nothing in this description undermines the logic at play in maintaining the consistency of extant aesthetic categories, or the coherence of an identity of creative subjectivity, even when it admits of surprise. Maintaining the semantic opacity of works of art only to prevent access to an intelligibility of the cognitive acts that give rise to them is par for the course in contemporary art. This is perhaps why if *techné* is figured as capable of escape and deviation at every turn in its ambitions against capture by epistemological models, the battle has already been lost. Whatever art's 'immanent protocols', they work with and alongside the systems of which they are a part and that also craft its reception and distribution. Even the deviant heroine still 'plays by the rules' here. These systems and their knowledges are of a piece with the techniques of contemporary art that for Tom Holert are "processed, torqued, scrambled, and reconfigured" by it, even at the risk, when staged as 'research', of "epistemic gestures that indulge in mere posturing."[45] A domain of these knowledges would have to now include the image classification of art that has been going on quietly for decades[46]—aiding in the process of, as Osborne puts it, photography and the digital image "*driving* the historical development of art"[47]

Yet, rather than asking *if* statistical configurations from the machine are creative or not we might rather ask *why* human-made images are recognized according to cultural norms to be the product of forms of thought and the manipulation of material that are not themselves the result of statistical processes in the brain (or whether the generative *variations* of the computer can be a sufficient form of *deviation*)? To pose the question this way is already to wager that *techné* can be understood as an exaptation of cognition's pattern recognition abilities that externalizes and manipulates "thought patterns" or "images of thought"?[48] Of course, the transformation of images of thought is already a familiar trope for both art and philosophy…However there are additional resources more germane to Computational Creativity that attempt to address the brain's acts of deviation, such as the *zeitgeist*

45 Tom Holert, *Knowledge Beside Itself: Contemporary Art's Epistemic Politics* (Sternberg, 2020), 59–60.

46 An inventory of these is provided in the appendix to Amanda Wasielewski, *Computational Formalism: Art History and Machine Learning* (MIT, 2023).

47 Peter Osborne, "Infinite Exchange: The Social Ontology of the Photographic Image," *Philosophy of Photography* 1, no.1 (2010): 61.

48 As Michel J.F. Dubois distils the concept: "Understanding the difference between the process and what it ends up producing, and then the fact that what is obtained can be displaced, leads to the definition of what in evolutionary biology is called an 'exaptation'." Dubois, *Humans in the Making,* 42.

defining machine learning framework of Predictive Processing (PP) in cognitive science and philosophy of mind, which evaluates cognition as an anticipatory, statistical process of error-minimization and environmental action. Daniel Williams has recently provided a broad overview of PP in defence of the brain's dynamic modelling of the environment as a tool for self-organization that enables cognition to construct "generative models" where "their description as "models" should be construed quite literally. They are physical structures that structurally resemble their targets."[49] The 'detached representations' of Gärdenfors are essentially this. What would distinguish human from animal cognition or current AI here is an ability to constructively map activities onto different domains of problems, such that intelligence becomes a developing function of what Andy Clark, borrowing from the post-Piaget neuroconstructivism of Annette Karmiloff-Smith, refers to as "*transferring* the abstract principles used to solve one kind of problem to a related but different kind of problem" through a practice of "representational redescription."[50] These abilities in defense of the explicit rule are why, in Clark's example, the beaver cannot build "a truly *deviant* dam,"[51] just like the baboon for Gärdenfors would never think to use lipstick.[52] Getting back the cognitive loot taken by the machine will not be accomplished in court cases over intellectual property, but in the patterns of adjustment that steal back for intelligence what machine learning's understanding of creativity is. This is something that would involve, to use Clark's formula, "a speculation concerning a link between the ability to become consciously aware of the contents of our own mental states and the process of redescription."[53]

Although he was writing only of the techniques of poetry at the time, as Viktor Shklovsky observed, "[t]he better you comprehend an epoch, the better can you see that the images you believed to be created by a particular poet are actually borrowed from others and almost unchanged."[54] If AI images are only a generic copy of creative behaviour derived from semantic information and the synthesis of irrelevant concepts in latent space, it should be highlighted that the logic of copying styles and schemas as a form of theft (the history of the "swipe" in comics, for instance) is indicative of an attitude that tends to only hold water within a Western system of aesthetics. As Michael Lucken has shown, "modern Japanese art depends on a heuristic that fits into neither the classical scheme of imitation → individuation → creation, where creation is the result of the self's maturation process

49 Daniel Williams, "Predictive Processing and the Representation Wars," *Minds & Machines* 28 (2018): 155, https://doi.org/10.1007/s11023-017-9441-6.

50 Andy Clark, "In Defense of Explicit Rules," in *Philosophy and Connectionist Theory,* ed. William Ramsey, David E. Rumelhart, and Stephen P. Stich (Lawrence Earlbaum Associates, 1991), 119.

51 Clark, "In Defense of Explicit Rules," 120.

52 Gärdenfors, "Cued and Detached Representations in Animal Cognition," 270.

53 Clark, "In Defense of Explicit Rules," 126.

54 Viktor Shklovsky, "Art as Device," in *Viktor Shklovsky: A Reader,* ed. Alexandra Berlina (Bloomsbury Publishing USA, 2017), 75.

through a prolonged contact with its models, nor into the modern agenda of rejecting imitation → creation → individuation, where it is only after breaking from his models that the artist can expect to find his way."[55]

Adjusting to such perspectival shifts, apropos Rainforest Realism's condition of admitting counterfactual scenarios for the instantiation of patterns, not only allows for the possibility that there could be potentials for art in the exploration of latent space, but the analysis of the computationally implemented techniques also provides us with a survey of cognitive processes that are, quite literally, a representational redescription of creative artistic procedures. Machine learning is an interdisciplinary collage and assemblage of sometimes disparate images of the biological brain, and any critical and pragmatic account of Computational Creativity would need to acknowledge that research into AI generated imagery is as much about investigating how the computer 'sees' as it is about integrating existing models of human cognition, vision, and meaning. The experimental protocols suggested by Deleuze and Guattari, which include those of 'mimicking the Strata', might even seem attractive again in this light, since for them "there is no imagination outside of technique."[56] However, technique appears somewhat trivial when it is interested only in according with a vital principle of autopoietic *becoming* that has no objective other than itself. Intervention into efficient causality alone for the sake of intervention and deviation explain neither what the technique is, nor how it is used. As Dubois highlights, "[t]he four Aristotelian causes that lead to a result are indeed those needed to transmit a technical process; what Aristotle analysed is what language says."[57] The agent of technique remains constrained by their representational resources for what the techniques do, which is as true for the artist as it is for the 'prompt engineer' attempting to describe a depiction. This may also be testimony to the reason for the overwhelming banality of AI imagery, and why it so easily accommodates the criteria for kitsch. But to defer to the indeterminacy of the creative procedure as subtracted from those that isolate, classify, and manipulate features or adopt, distort, and synthesize schemas, is only to aid in safeguarding the 'secrets of art' by a policing of human art's unique and special status.

One objection that can be anticipated is that such a 'formalist' evaluation in recognition of the generic properties of contemporary art and their treatment by technique removes creativity from context and from the particular embodied deviations that gave rise to its objects and images, risking a homogenization of knowledges, if not their many erasures. Yet, in keeping with Paglen's suggestion (albeit somewhat tangential to his intentions)

55 Michael Lucken, *Imitation and Creativity in Japanese Arts: From Kishida Ryusei to Miyazaki Hayao* (Columbia University Press, 2016), 3.

56 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minnesota, 2005), 345.

57 Dubois, *Humans in the Making,* 186.

that our familiar aesthetic categories and theories of visual culture are ill-equipped to sufficiently evaluate AI imagery, this is nonetheless among the methods required if we are to "unlearn to see like humans."[58] That is, if by 'seeing like humans' we mean an affective schema of cognition determined by a refusal to grasp art, creativity, and the imagination as *already redescriptively artificial* by affirming instead, to borrow Deleuze's expression, the vital principle of creativity as a profound "complicity between nature and mind."[59] Certainly dismantling an anthropocentric comprehension of art is not something that could be accomplished merely by supporting or engaging in a 'collaborative spirit' with science and technology.[60] This is only to say that we have now a new tool, one that introduces new techniques and, if adjusted critically, discloses something about technique *in general.* It would be premature to assert computation is incapable of creativity, recalling that for Ryle, "there is no particular overt or inner performance which could not have been accidentally or 'mechanically' executed by an idiot, a sleepwalker, a man in panic, absence of mind or delirium or even, sometimes, by a parrot."[61] AI may not have any inherent capacity for generating techniques, but it does generate computational abilities, which themselves arise from encoded techniques. Creativity is a 'diagrammatics' only as a pathway into a field of operations. If we don't make the attempt to determine and to *know what we are doing when we do what we know how to*, a possible consequence would be not knowing our way around, and the initializing paradox of any strategy of orientation is that whatever situation it explores will also change as an effect of the exploration.[62]

Encounters with uncertainty, contingency, or the 'xenophilic vectors' of anomalous or opaque appearances that can generate pseudorational behaviours of self-deception no doubt possess a certain utility, as Piper suggests, especially concerning the manner in which images can be *put to use.* If they can prove to be a means towards the indeterminacies of subjective dissolution, such dissolution would be consequential only to the extent it leads to greater and greater determinations, rather than leading away from them. Piper will double-down on this wager: "Looking, really looking at any object is hard work, and not just because we have so much else on our minds. It elicits enormous psychological resistance because the more deeply we penetrate into the hidden structure of the object, the more deeply we penetrate into the hidden structure of the self. The more fully and vividly we unpack the complex properties of the object, the more fully and vividly we

58 "The theoretical concepts we use to analyze visual culture are profoundly misleading when applied to the machinic landscape." Trevor Paglen, "Invisible Images: Your Pictures Are Looking at You," *Architectural Design* 89 no. 1 (2019): 24. https://doi.org/10.1002/ad.2383.

59 Gilles Deleuze, *Difference and Repetition* (Columbia University Press, 1994), 165.

60 See John Beck and Ryan Bishop. *Technocrats of the Imagination: Art, Technology, and the Military-Industrial Avant-Garde* (Duke University Press, 2020).

61 Ryle, *The Concept of Mind*, 33.

62 See Werner Stegmaier, *What is Orientation?,* trans. Reinhard G. Müller (de Gruyter, 2019).

take apart the complex structuring of the self." [63] Creative Computation may have a peculiar image of the brain, but we are not worse off for considering it for what it might possibly tell us about how humans actually think and act creatively, much in the way that for Helmholtz, our 'unconscious inferences' are not fully hidden, since it is possible to become consciously aware of them. We might also consider here a response from Paul Churchland to Hilary Putnam's suggestion that if "the world can be endlessly recarved into new and different objects and classes" that this should also be true for the mind and its "unimaginably vast" possible conceptual resources and frameworks, the recognition of which could provide an opportunity and occasion to develop "a new *cognitive* taxonomy."[64] Just because we know *how* we can use the key to open the door, insofar as it fits and turns, doesn't guarantee any understanding of the mechanisms of the lock *that* could tell us how to pick it…a knowledge and skill-acquisition that could prove very useful indeed, as a pattern generalizable across a class of locks which might guard anything from our chains to passages leading inside the enemy's castle.

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63 Piper, "Intuition and Concrete Particularity in Kant's Transcendental Aesthetic," 208–209.

64 Paul M. Churchland, "Activation Vectors versus Propositional Attitudes: How the Brain Represents Reality," *Philosophy and Phenomenological Research* 52, no. 2 (1992): 423. https://doi.org/10.2307/2107947.

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