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HERBERT VON HALEM VERLAG

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The AI Image, the Dream, and the Statistical Unconscious

Abstract: As has been remarked several times in the recent past, the images generated by AI systems like DALL·E, Stable Diffusion, or Midjourney have a certain surrealist quality. In the present essay I want to analyze the dreamlike quality of (at least some) AI-generated images. This dreaminess is related to Freud's comparison of the mechanism of condensation in dreams with Galton's composite photography, which he reflected explicitly with regard to statistics – which are also a basis of today's AI images. The superimposition of images results at the same time in generalized images of an uncanny sameness and in a certain blurriness. Does the fascination of (at least some) AI-generated images result in their relation to a kind of statistical unconscious?

> I suppose it is submerged memories that give to dreams their curious air of hyper-reality. But perhaps there is something else as well, something nebulous, gauze-like, through which everything one sees in a dream seems, paradoxically, much clearer. [...] What manner of theatre is it, in which we are at once playwright, actor, stage manager, scene painter and audience?
> W.G. Sebald, *The Rings of Saturn*, 1995/1998

As has been remarked several times in the recent past (cf., e.g., SCHNEIDER 2015; JUNE 2022) the images generated by AI systems like DALL·E, Stable Diffusion, or Midjourney have a certain surrealist quality. This is connected to the weird and distorted biomorphic forms such images often show or the strange juxtaposition of heterogeneous elements. While I want to follow up on this observation, I will mainly focus on another aspect in the present short essay. My interest was first triggered by a subjective experience. One day in January 2023, on Facebook, a person posted images of a 'party', generated by an AI system (cf. fig. 1).

Figure 1: AI generated 'party photos', found on Facebook in January 2023

I was struck by these images in an unclear way. This experience reminded me of Roland Barthes describing the 'punctum' in photography as an "element which rises from the scene, shoots out of It like an arrow, and pierces me" (BARTHES 1981 [1980]: 26). What unsettled me was not the false and distorted representation of hands and teeth, but, on the one hand, that all persons looked somehow the same and, on the other hand especially, the blurred green stains, like fuzzy tattoos, for example on the girl in the upper left photo. This blurriness in particular reminded me of dreams, in which often some detail cannot be perceived clearly. At least in the remembrance of dreams things are often clouded in such a haze. These elements displace the, at first sight, photographic appearance of the DALL·E images and add to their dreaminess. Interestingly, the faces of the represented people do not only look very similar to each other; uncannily I felt to have seen these faces (or similar ones) somewhere before as well. That is not surprising, given the statistical nature of AI images. Since they are, presumably, constructed out of thousands or more images of parties circulating on the net, they tend to represent hegemonic ideals of beauty, self-representation, and 'partyness'. They are, so to speak, ideal composites of ideal faces on an ideal party.

This composite character of the depicted people is a first and important hint to explain the dreaminess of the images. Sigmund Freud (2010 [1900]: 296-322) describes in *The Interpretation of Dreams* a central mechanism of dreams which he called 'condensation'. He argues that "psychical material has undergone an extensive process of condensation in the course of the formation of the dream" (FREUD 2010 [1900]: 297). Different materials, remembered from daytime, are combined into new representations. Freud describes this with the example of a dream he himself had. A person appeared in that dream: "The face that I saw in the dream was at once my friend R.'s and my uncle's. It was like one of Galton's

composite photographs. (In order to bring out family likenesses, Galton used to photograph several faces on the same plate [...])" (FREUD 2010 [1900]: 163-164). Freud thus compares the condensed faces with Galton's composite photographs (cf. fig. 2; on Galton and Freud see BOTH 1962).

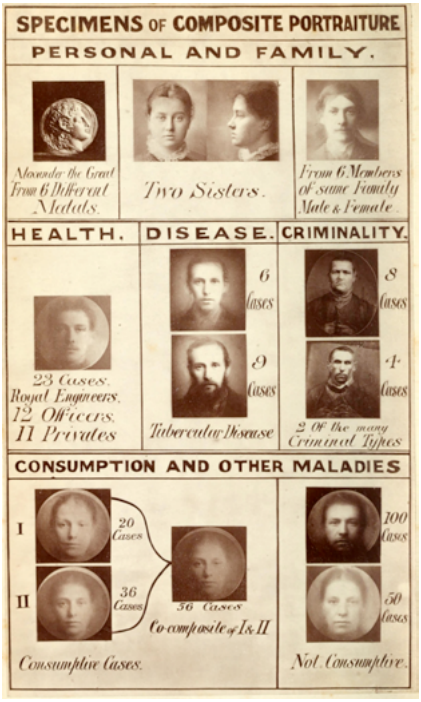

Figure 2: Example of Galton's composite portraits, by Francis Galton – Internet Archive, Public Domain, https://commons.wikimedia.org/w/index.php?curid=36109358 [accessed February 20, 2023]

Freud comes back to this a few times:

> What I did was to adopt the procedure by means of which Galton produced family portraits: namely by projecting two images on to a single plate, so that certain features common to both are emphasized, while those which fail to fit in with one another cancel one another out and are indistinct in the picture. In my dream about my uncle the fair beard emerged prominently from a face which belonged to two people and which was consequently blurred [...] The construction of collective and composite figures is one of the chief methods by which condensation operates in dreams (FREUD 2010 [1900]: 311).

Freud describes again the condensed composite image in his dreams but also underlines its *blurriness*; or, to be more precise: that *parts of it* are blurred. So, we might say that the process of condensing several images from the net in a statistical AI image not only resembles the process of composite photographs of Galton but also the condensation mechanism of dreams. In the following I want to deepen three aspects:

1) *The statistical image*: Galton's composite photographs were made for eugenic and criminalistic purposes, to find 'typical traits' of certain 'races' or criminals. In that sense, he tried to find schemas, i.e., patterns in a big amount of data composed of images from specific persons. He explicitly relates his composite images to statistics, mentioning Adolphe Quetelet, one of the fathers of modern statistics. Right at the beginning of his 1879 paper on 'generic images', Galton mentions the "regular methods of statistics. It is not sufficient to learn that an opinion has been long established or held by many, but we must collect a large number of instances to test that opinion, and numerically compare the successes and the failures" (GALTON 1879: 161; see also GALTON 1878: 140, 141). He continues: "The process of composite portraiture is one of pictorial statistics" (GALTON 1879: 165). This is the concept of a statistical image, long before neural nets started finding patterns in big image data from the internet – although, of course, Galton connected this concept with ideas of 'races' or criminal types which are considered problematic nowadays, while today's statistical AI images are seemingly more connected to entertainment.[1] Another quote:

> Composite pictures are, however, much more than averages; they are rather the equivalents of those large statistical tables whose totals, divided by the number of cases, and entered in the bottom line, are the averages. They are real generalizations because they include the whole of the material under consideration. The blur of their outlines, which is never great in truly generic composites, except in unimportant details, measures the tendency of individuals to deviate from the central type (GALTON 1879: 166).

Here, the idea becomes clear that the pictorial statistics of the composite image is a real generalization[2] and that there is a blur which is connected to individual deviation. The generalized image and the blur seem to be necessarily connected. This does not easily connect to the green stains on the girl's arm in

1 A related artistic work by Nancy Burson should also be mentioned: she, too, fused several images into one, see https://www.nancyburson.com/index [accessed February 20, 2023], especially with the early composites. Her work, however, was more about the demonstration and critical reflection of the then-new digital imaging technology than about statistics.

2 I just want to mention that the notion of the 'generalized image' can also mean images that are not produced by superimposing individual images but *are* individual images used to signify classes of objects: an image of a horse ('this horse'), for example, in an article on horses, where it then signifies all horses. Such 'generic' images are also very typical for advertising and must not be confused with the statistical image that is the topic of this essay.

figure 1 – but it might point to a general property of statistical images. Perhaps the green stains signify that the statistical information on girls' tattoos, typical for parties, is incomplete or not very important. But again: This reminds me weirdly of dreams, in which some impressions stand out very clearly while others remain blurred and indistinct.

2) *Condensation and memory*: Interestingly, Galton himself draws a connection between his composite portraits and psychological processes:

> Our general impressions are founded upon blended memories, and these latter will be the chief topic of the present discourse. An analogy will be pointed out between these and the blended portraits first described by myself a year ago under the name of 'Composite Portraits' [...]. Then the cause will be explained that renders the mind incompetent to blend memories together in their just proportions (GALTON 1879: 161-162).

He doesn't relate the composite images to the dream but to memory and moreover argues that the blending functions of human memory are only imperfect compared with the statistical images. In a 1996 [1993] paper, Hartmut Winkler (reading an essay by LORENZ 1987) discusses the connection between Freud and Galton, between condensation and composite images, and argues that condensation could be seen as a wider mechanism that is not only an important part of dreamwork but also a central mechanism of memory:

> For what has been sketched suggests the idea that indeed all idealizations, all 'abstract ideas' could have emerged from a process of accumulation and deletion. If perception has to deal ceaselessly with different concretes [Konkreta], it would be the task of memory to superimpose these concretes, to 'condense' them and finally to transfer them into those schemata which (as one may assume) form the bulk of the memory contents. The abstract entities [Abstrakta] would be the result of a describable process of abstraction; what would fall by the wayside, as in the case of Galton's mixed photographs, would be what distinguished the original individual perceptions. From this point of view, condensation would not be a mechanism of dream work alone; rather, the entire interaction between perception and memory would have to be described according to the pattern of condensation (WINKLER 1996 [1993]: n.pag.; my translation).[3]

Here, condensation is even further generalized into a central mechanism of memory, and even of the interaction of human beings with their surroundings.

3 Original: "Das Skizzierte nämlich legt die Vorstellung nahe, tatsächlich alle Idealisierungen, alle 'abstrakten Ideen' könnten aus einem Prozeß der Akkumulation und Auslöschung hervorgegangen sein. Wenn die Wahrnehmung es unablässig mit differenten Konkreta zu tun hat, wäre es Aufgabe des Gedächtnisses, diese Konkreta zu überlagern, sie zu 'verdichten' und sie schließlich in jene Schemata zu überführen, die (wie man annehmen darf) das Gros der Gedächtnisinhalte bilden. Die Abstrakta wären Resultat eines beschreibbaren Prozesses der Abstraktion; auf der Strecke bliebe, wie im Fall der Mischphotographien Galtons, was die Einzelwahrnehmungen als einzelne ursprünglich unterschied. So betrachtet wäre Verdichtung nicht ein Mechanismus der Traumarbeit allein, sondern die gesamte Interaktion zwischen Wahrnehmung und Gedächtnis wäre nach dem Muster der Verdichtung zu beschreiben".

Winkler further extends this argument to language and argues that the whole notional structure can be seen as a result of condensation (and the contrary mechanism of 'isolation'). Galton's critique of human memory suggests at least the possibility that there are better – technological – possibilities of condensation. In a similar vein, Winkler suggests that technological mechanisms have an important role in condensing information in a given culture (see also LUHMANN 2012: 317 on technology as a "functioning simplification"). Are the AI images pictorial apparitions of abstractive processes akin to the workings of our memory or even during the construction of notions in consciousness?

3) *Technology and dreamwork*: If Galton's portraits are pictorial statistics that produce a generalized image and the blur of deviation – and if, moreover, Freud compares the dreamwork of condensation to these images: How is the dreamwork of condensation linked to pictorial statistics themselves? Surely, condensed dream images are not statistics in the sense that they condense a multitude of publicly circulating images – but perhaps they condensate several remembered images in order to construct a history of the dreaming subject. And, if so: What does – let's say – society dream of, when it produces such images? Which history does it construct for itself?

I just want to note here that the idea media were somehow related to dreams and other psychological states is of course not new – think of the 'dream factory' Hollywood. Jean-Louis Baudry (1976) has written an influential paper that compares Plato's allegory of the cave, the situation of the dreamer (in recourse to FREUD 2010 [1900]), and cinema. This might be a bit of a stretch and perhaps too generalizing, but the interesting argument is – while insisting "that cinema is not dream" (BAUDRY 1976: 123) – that there are some similarities in these different situations that always point back to a certain desire: "We can thus propose that the allegory of the cave is the text of a signifier of desire which haunts the invention of cinema and the history of its invention" (BAUDRY 1976: 112). In Baudry's discourse, cinema simulates the subject or at least certain aspects of subjectivity, namely the desire to regress to a specific earlier stage, the "specific mode in which the dreamer identifies with his dream, a mode which is anterior to the 'stade du miroir', to the formation of the self, and therefore founded on a permeability, a fusion of the interior with the exterior" (BAUDRY 1976: 117; 'stade du miroir' is obviously an allusion to the early work of Jacques Lacan). The enjoyment of cinema exists because it allows a certain kind of regression, in which the boundaries of the subject become blurred. Are the green stains on the arm of the girl likewise signs of a blurring of subjectivity? Baudry introduces a kind of historical sequence:

> But if cinema was really the answer to a desire inherent in our psychical structure, how can we date its first beginnings? Would it be too risky to propose that painting, like theater,

> for lack of suitable technological and economic conditions, were dry-runs in the approximation not only of the world of representation but of what might result from a certain aspect of its functioning and which only the cinema is in a position to implement (BAUDRY 1976: 113)?

Perhaps, we are then in a situation nowadays where the new technologies of AI imaging after cinema radicalize the possibility of regression – notwithstanding the fact that Baudry specifically connects this to the dark space of the cinema (womb, dark cave of Plato's allegory, etc.). Perhaps even without such dark spaces, images that use condensational mechanisms can give us the feel of a dream-like state.

I want to underline some points touched upon in this short essay. First of all, these images (cf. fig. 1) obviously play with a memory most of us have, namely parties, perhaps from our times being a student. Couldn't we say that these images condense *typical* situations many of us know: the kitchen, the laughter, the crowded space of a small apartment? A situation we perhaps remember with a certain nostalgia? At the same time, they are statistical images that construct idealized "composite figure[s]" (FREUD 2010 [1900]: 336) from hegemonic mass media images, estranging and de-personalizing our memories.

We might then ask whether these statistical images, in composing millions of online images, make something visible that was hidden in plain sight within the mass of images, namely a "collective image" (FREUD 2010 [1900]: 310) of the collective unconscious? Perhaps that is the reason for the fascination exerted by these uncanny images and their surrealist look – not to mention such even more obvious phenomena like *Google Deep Dream*, which already allude in their name to dreams.[4] Perhaps not all, but many of these images can be seen as a kind of externalization of a collective unconscious in a quasi-McLuhanian fashion (on McLuhan and the unconscious see the interesting 2008 Ph.D. by Alice Rae). I think that it is not too hard to agree with this idea: "All the material making up the content of a dream is in some way derived from experience, that is to say, has been reproduced or remembered in the dream – so much at least we may regard as an undisputed fact" (FREUD 2010 [1900]: 44). In a similar way, the material for the dreamlike AI images comes from myriads of images on the internet. As Winkler (1996 [1993]) argued, abstract schemata become visible by amassing and abstraction of individual data. In this sense, the AI images, perhaps like cinema before them (with BAUDRY 1976), are machines representing collective unconscious fears and wishes that suddenly emerge in an unnerving clarity from the blur around them via a 'statistical unconscious'. This is actually somewhat similar to Galton, whose composite portraits of, of all things, 'race' and 'criminal

4 https://deepdreamgenerator.com [accessed February 20, 2023]

types' point obviously to deep fears of the time. But what about the seemingly harmless 'party photos' (cf. fig. 1)? Are there really some unconscious fears and wishes lurking behind these images? Perhaps this is a too strong hypothesis, perhaps the fascination with the AI images can be explained quite more simply: perhaps it is really just the fact that they *look* like the dream images we remember; perhaps this is the most compelling aesthetic property they have. These DALL·E-images oscillate between a hyperreal (see the highlights on the girls which make their skin look like plastic) and unnerving clarity on the one hand and an incomprehensible blur on the other (see not only the green stains but also the unclear structure of the yellow dress at the shoulder of the girl on the right of the green-stained girl, or the disembodied blurred hand right below the guy with the drink in his hand). Doing so, they are not simulating the aesthetics of photography in general (cf. SCHRÖTER 2003), which is of course structured by a distribution of clarity and blur; the special distribution of blur and clarity in these AI images is very different. While, in photography, you normally either have a distribution of sharpness along different deepness levels (e.g., things in the foreground are blurred while things in the middle and back are sharp – like the hand weirdly holding a cup in fig. 1) or blur is induced by motion, in AI images there seems to be partial blurriness on the same plane inhabited by sharp objects. And it is exactly this co-presence of elements that stand out and those which disappear in a haze that is so characteristic of dreams – or, at least, our recollection of dreams. It shouldn't surprise us that artificial intelligence also artificially dreams. Do androids dream of student parties? Well, perhaps they do.

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