

New forms of consciousness

Cal W.



The Collective:

What is your individuality? Well, it's quite honestly an illusion. Moreover, it's an extremely dangerous one.

Every entity is a sub-entity and itself can be broken down into more subentities. This trend continues to the maximum scale of all the dimensions, the multiverse, and all the way down to the Planck length. These are the borders as we pretend to know them. Broader systems, organisms, and life forms evolving to operate within each other, as one. There are most definitely mechanisms that power consciousnesses at cosmic scales, which humanity is potentially involved in. Obsession with individuality, as clinging we cling to it, is hurtful to the truth of life's nature, and antithesis to our future.

In many cases, we draw our power, creative energy, and justification for our own consciousness from the illusion of 'self and other'. After this, we are consumed by it. As we enter a world where our consciousness is still bound by our individual bodies, it is easy to act out the main tropes individuality creates; the tragedy of the commons among many others. These are very much the mechanisms that are destroying our earth.

The rhetoric of building one's own identity, so as to be distinguished, is problematic in witnessing and integrating with the larger picture. Without the lens of the collective consciousness, we are stunted; without the possibility of consciousness more smoothly integrating with the collective, the future looks grim. Obsession with individuality limits the effectiveness of a collective that all functions together, fluidly. Our collective as it stands is broken, divided, and grinding to a pitiful halt in its own mess. It's dysfunctional, scattered, and ignorant. It's as if each neuron in the brain succeeded and ran its own consciousness. It's as if each human was a 1-bit processor, billions of these binary manifestations, unable to coalesce into an effective architecture. It's computationally ineffective, a waste of energy to maintain so many similarly operating individuals all running the same simple algorithms with the same simple results. It's crucial we recognize ourselves more as a broad and vast entity, and less as subentities. That enables us to better understand our role on earth and in the universe if such a thing exists.

This art piece is not necessarily about the viewer, nor about the work. It's about the relationship between them. It's about expressing the truth of our existence as a collective, and meditating on the falseness of our individuality. The work extracts your DNA in the form of image data. The information core to your individuality—your face—and incorporates it into the fold. The longer you spend with it, the more it begins to be inspired by you. In this way, the process very much resembles human creativity; abstracting inputs (acquired through the senses) into outputs which

are expressions of every input to create something entirely new. In many ways, the neural networks—artificial intelligence—is a sort of organism as it powers its adaption. Over long amounts of time and exposure, it grows and begins to build more robust forms. Seed, seedling, sapling, tree. This entity is unique because it is a dynamic manifestation of the humanity it has interfaced with. It is not simply averaging, but abstracting and generating. It's not classifying, it's inspired, and creating. It is an artist, and it is expressing a collective not simply by promoting the diversity of individuality but making something that's unseen and new: the potential of true collective consciousness. It creates new forms that are built from sub-entities. It is the entity of subentities. Once you are exposed to the AI, you become a part of it, and it becomes a part of you. It's a symbiotic exchange that entangles you in the truth of our collective. It's the relationship between the viewer and the AI which is the 'art'.

The generative adversarial network is redesigned to work in real-time, with a mini-batch processing method powering back propagation, specifically gradient descent. This GAN is a system involving multiple neural networks, but the entire workflow involves a plethora of AI instances (pre-trained). First, your face is extracted from the webcam feed. It is then securely stored in numpy binary arrays, and passed to an algorithm which determines which images need to be passed to the GAN (generative adversarial network) as arguments. The function then assembles batches based on a system that tracks involvement; if an image is passed through the GAN during any given epoch, it is weighted less heavily than recently extracted images arriving from the server. In this way, the GAN trains itself across the entire dataset evenly, even as new additions from web-instances populate. Mechanistically, this is done through randomizing the contents of a batch until the parameters for image weights are met. This ensures that no batch is homogenous. This is then handed off to the GAN. A simple GAN consists of two neural networks; a discriminator and a generator. The generator's job is to rearrange random noise and pass that output to the discriminator. The discriminator gets images from the batch originating from the training data, and also the noise originating from the generator. Its job is to determine which image came from which source. It then assigns a confidence value to each (range 0-1), which back propagates to the generator, to adjust all weights that were involved in rearranging the noise. Over time, as more training data and more adjustments to weights and biases occur, the generator will begin to reformat the random noise in patterns and create intelligible images. The discriminator is in competition, to always guess the real images from the fake ones, and the generator is always in competition to trick the discriminator into guessing its image. Hence, 'adversarial'. Training a GAN is a delicate process; the two Deep neural nets must train separately to prevent mode collapse. At occasional intervals, a function checks in with the generator and asks it to create an image. This image goes through a handful of enhancements and post-processing steps, to then be delivered as a live progress update to the web. The raw output is archived. The processing occurs in 12 hour GPU cloud computing runs, where all the weights and training results are saved frequently.

References

- (n.d.). Retrieved from <https://ieeexplore.ieee.org/abstract/document/7528221/>
- Karras, Tero, Laine, Samuli, Aila, & Timo. (2019, March 29). A Style-Based Generator Architecture for Generative Adversarial Networks. Retrieved from <https://arxiv.org/abs/1812.04948>
- Nepali, S. (1970, January 01). Evaluation of GPU based Cloud Solutions (Scalability of Deep Learning in the Cloud): Semantic Scholar. Retrieved from <https://www.semanticscholar.org/paper/Evaluation-of-GPU-based-Cloud-Solutions-of-Deep-in-Nepali/1fa05118e302752be95313c3139a3086bec68f89>
- Shen, G., Horikawa, T., Majima, K., & Kamitani, Y. (n.d.). Deep image reconstruction from human brain activity. Retrieved from <https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1006633#pcbi-1006633-g008>
- Shorten, C. (2019, May 09). DCGANs (Deep Convolutional Generative Adversarial Networks). Retrieved from <https://towardsdatascience.com/dcgans-deep-convolutional-generative-adversarial-networks-c7f392c2c8f8>