

'Machines Certainly Think': Generating Surrealist Text with Artificial Intelligence

By S. E. Marvin

“Man has delegated his activity to the machines. He has relinquished in their favour the faculty of thought. And machines certainly think. Indeed, in the evolution of this thought they go beyond the limited function originally envisaged.”

— Louis Aragon, *Paris Peasant*

In recent years, Artificial Intelligence (AI) has become a popular tool for creatives. Scholars, artists, writers, museums, researchers, and others have begun to explore the potential for AI outside of its STEM and business applications. AI has been used to create images, music, animations, websites, poems, films, novels, and more. In terms of text generation, the main focus of this paper, AI has been used to write articles for *The New Yorker* and other major publications; write, star in, and direct short films; generate novel-length texts; and write cards for *Cards Against Humanity*—and that is but a sampling of AI's uses in text generation.¹

While exploring the world of computer-generated media, one reaction to these media came up time and time again: surreal. I read comment after comment, article after article, claiming that the outputs of AI felt “surreal.” This frequent association elicited my curiosity; is this connection between Surrealism and AI based entirely on the shared illogical and bizarre quality of their products, or is there some deeper bond between the two? One similarity is the idea of chance. Much of textual generation by AI is conducted through predictive text. In this case, an AI processes a large collection of text and uses statistics to determine the likelihood of which words will follow any given word. An example of this use of statistics is the autocomplete feature of texting apps and emails. However, the kinds of AI used in most creative projects do not simply pick the most likely choice each time they generate a new

word. Generative AI employs a degree of randomness (or chance, or entropy) so that each text produced is entirely new and different. The way that AI generates text can be seen as comparable to the Surrealists' automatic writing, which is perhaps a reason that the products of AI and Surrealism are linked. To explore the unconscious mind, the Surrealists would often engage in automatic writing, during which words were generated by chance, without conscious thought. This could be performed with several different methods: 1. one could write as quickly as possible, therefore not allowing themselves to consider their words; 2. one could enter a dream-like trance and allow their mind to wander, recording their observations; 3. one could be awakened from a deep sleep and note their immediate thoughts. The idea that words could be created automatically, in the Surrealist sense of the term, is similar to the way AI generates text algorithmically.

Surrealism, like other avant-garde movements, has always been championed as an experimental, pioneering movement with bold ambitions. The intersection of Surrealism and AI has begun to be explored already with outstanding results. OpenAI developed a neural network which generates images based on text; it is named DALL·E, partially after the Surrealist Salvador Dalí ("DALL·E"). The Dalí Museum boasts an AI-generated video of Salvador Dalí, in which he converses with guests, reads a newspaper, and poses for selfies. The interactive exhibit, called *Dalí Lives*, uses Dalí's own voice, words, and images to generate a hyper-realistic representation of the artist ("Dalí Lives"). In order to explore the relationship between AI and Surrealism as it relates to literature, I sought to use AI to generate Surrealist text. My goal was to see if the relationship between AI and Surrealism would manifest itself in text, and, if so, how. I did not seek to create a model which could generate text so believably human and undeniably Surrealist that it could trick a reader into believing it was written by André Breton. Rather, I sought to utilize the computational qualities of AI. This process of generating text with AI consisted of selecting a suitable AI; creating a corpus of Surrealist text; training the AI on the corpus; and prompting the AI to

generate text. I found that training OpenAI's GPT-2 was best-suited for my project. The corpus that I used to train GPT-2 is made up of a variety of Surrealist texts, including poems, novels, essays, and a screenplay.² In this paper, I will refer to the model of GPT-2 which I trained on an assembled corpus of Surrealist texts termed SAIGE (Surrealist Artificial Intelligence Generative Experiment). I trained SAIGE on this corpus for fifty hours. The samples that SAIGE produced were compelling and similar in structure, narrative, and form to Surrealist literature.

Methodology

I am not attempting here to offer an in-depth analysis of how AI or GPT-2 function.³ Instead, I will explain the steps I took to generate text with GPT-2 so that this process may be replicated by anyone with a working knowledge of Python, a programming language. The first stage of creating SAIGE consisted of assembling a corpus that was diverse enough to include a variety of Surreal texts and large enough to give the AI plenty of data. SAIGE had to be trained on a corpus in order to learn the language of the corpus. Before it could write Surrealist text, SAIGE first had to read Surrealist texts. Assembling a Surrealist corpus for this particular purpose presented several challenges. First and foremost, given the timespan of this project and my access to digital storage and computing power, this corpus is not meant to be exhaustive, although many Surreal texts were excluded.

Aside from the logistical issue of size, my principal constraints in selecting texts for this corpus, which I will briefly address here, were those of suitability, translation, and access. In terms of suitability, I chose texts that would best function as training data for GPT-2 and held true to the ideals of Surrealism. I limited my corpus to only those texts created within the established group of Parisian Surrealists under Breton's leadership. This eliminated any texts created before Guillaume Apollinaire's first use of the term (1917) and after World War II (1945).⁴ I did not restrict my corpus to one specific genre or form. As I

cannot read or speak French, I had to rely on English translations of Surrealist works, which were often copyright-restricted and therefore less freely available. The use of English translations also presents an issue in that the Surrealists famously employed French wordplay which is, at times, lost in translation (especially as training data for an AI). However, the decision to stick to English translations allowed me to best offer a meaningful analysis of the text produced by SAIGE.

In the initial phase of this project, accessibility was the largest limiting factor to my ability to include texts in this corpus. However, given the abundance of texts which were made available online and the assistance I received from The Dalí Museum, I was able to assemble a suitable corpus which included nine major Surrealist texts, eight influential Surrealist writers, and a handful of excerpts and poems. Initially, I was able to amass a small corpus with the resources available to me through my home institution, Florida State University, and what was available online. Fortunately, The Dalí Museum allowed me to visit its library, where Shaina Harkness and Kelsey Hallbeck provided a large number of various English translations of principal Surrealist texts which I incorporated into the corpus. Their invaluable assistance eliminated the issue of access.

Many of the texts which made up this corpus had to be digitized in order to be understood by SAIGE. Digitization was an arduous process which took up the bulk of the time I spent on this project, but it was necessary in order to create machine-readable text. I relied mainly on Tesseract and Microsoft OneNote for optical character recognition and on Sublime Text 3 for plain text editing.

With the corpus assembled, I had to select a suitable AI to carry out the task of text generation. Initially, I experimented with other machine learning methods, including Markov chains and character-level Recurrent Neural Networks, but was not satisfied with the results, largely due to problems with human readability and coherence. After much experimentation, I chose GPT-2 to generate text. GPT-2 is an AI available to the public which is “trained on a

dataset of 8 million web pages” and able to “predict the next word, given all of the previous words within some text” (“Better Language”), giving it the ability to produce naturalistic text.⁵ Another factor in my decision to use GPT-2 was its relative ease of use; even my small device had enough computing power to run GPT-2 and tutorials on how to create custom training data were widely available due to its accessibility.⁶ Using GPT-2 allowed me to generate text which was more human-readable than text I had generated with previous methods. In order to generate unique text, I began to train GPT-2 on the training corpus of Surrealist texts. I worked mainly from two tutorials⁷ but ran into several issues throughout the process. I worked on a Windows device and used Python 3.6 to run the code.⁸ I worked with the 124 M model of GPT-2, the smallest model, due to limitations on computing power and storage. I trained GPT-2 on my corpus for about fifty hours, generating over 7300 steps, leaving SAIGE well-versed on the Surrealist corpus I had assembled.

After finishing SAIGE's training, I could generate samples of its own writing. I initially generated eight samples at three different temperatures, but later generated between eight and sixteen more at each temperature to better understand SAIGE's abilities. Temperature controls the amount of entropy in the text. Generating samples at low temperatures instructs SAIGE to choose the most likely combination of words based on its training data; conversely, then, using higher temperatures increases the amount of randomness in SAIGE's word selection. Usually, temperature values are between 1 and 0, so I generated samples at temperatures of 0.2, 0.5, and 0.8 in order to understand SAIGE's full range of textual generation. Each sample generated was about 800 words long, though some were much shorter and some were much longer. SAIGE generated unconditional samples⁹ in order to evaluate SAIGE's text without my prompting.

SAIGE's Output

As I cannot include every one of SAIGE's generated samples here¹⁰—and SAIGE is capable of generating unlimited samples—I have selected some of interest to discuss. These samples are presented with no edits or alterations. I will not note any errors in grammar or spelling as so to leave SAIGE's output unaltered. The samples end abruptly, often mid-sentence, due to the nature of generating samples which are limited by size. SAIGE often generates samples fraught with repetition due to the predictive-word nature of its textual generation. No repeated words have been omitted here.

Temperature 0.8

I generated twenty-five samples at temperature 0.8—more than at any other temperature—to best explore what I had believed would be the samples most accurate to the Surrealist corpus. These samples were actually troublesome, as explained in the conclusion of this paper. Nevertheless, this sample stood out from the others:

By Amie

It's not always the prettiest of flowers who are the mistresses. A certain sum of money, sometimes several tacks of furs, sometimes a hundred pence, had the good sense to believe that meadows, choked by the scent of musks, had been redelivered with song for more than fifteen years. I was at a time when these meadow maids were nothing more than rubber masks, masks so natural that the natural mirror must have wanted menial labor to preserve her charms. Today, of course, nothing preserves such a mirage more than the face of Mr. Coal, and all that it exposes than Mr. Coal's wild beard.

The great man of the woods, what could his speech be all the more terrible if he had followed the example of the madman, the madman who, from a little before he stretched

out his hands, spoke with such violence the character of the poet, the man who goes into a forest, burns down his rival, out of sheer anger, at the thought of his beard! But madman: it is not the beard that is his problem. It is the speech, the whole voice, the whole face. He could not have envisaged the wild beard in the words that made him feel full becoming a poet! In poetry, the wild beard is the beard of ignoble leaps. The leaps, it seems to me, are the ones who imagine themselves trashy. They imagine themselves trashy. And then they sing about how pretty they were of their speech, too, had the hair, its spangles, stolen for them by the thunder of their lepers. Wild, wild! The wild, wild! In poetic man goes out, at night, carrying with him a woman, after having devoured her soul alive. In madam mine, absence is the real conqueror. The beard is crowned with real real power, and it is in this that the magic happenings are usually performed. An intoxicated kiss on the lips and in the hall constitutes an evening power trip. Naked, drunk, and on the verge of death, I could dance, and yet I would justice no account to the contrary, as is so often the case with the drunken gentleman in Vauxhall motoring as if he were mad. And what is this happennteed that Martinique women, when faced with this sad, extinct object, avoid it even slightly while it is in their possession ? At the moment, I shiver with pleasure at the thought of such thing. Such things happennt they seem to be the cause of their afflictions on me, whereas ever since I was about thirteen, when a breast gave birth to a beautiful

butterfly. I knew this breast well and could not avoid describing it the beau de vie.

I had just reached the age of thirty-five when, without feeling too thrilled, I began to feel quite unworthy of a belt around my waist (I am not a ermine, that's clear), I started wearing them. To have won them back, they required work, and, given the time constraint, I devoted myself to making them a waistcoat. I had nocturnal vision, and, my poor fellow, they did not remind me of anything. At that age, the useless become the well-wishers of comical novelty, wasek, and poor old fashioned: a sort of waistcoat that was not for sentimental purposes, but that of a man condemned to live in his own little world, when, in order to inject some suasion, he offered it to me at the mere moment when he was offering it to the divine:

A breezy day is always prettier than a long coat.

A breezy day is always better than a long coat.

Whichever you prefer, you're better than a long coat.

I took it upon myself to create a whole series of mirrors to cover the exterior of sous tenants, and in the course of the succeeding years (about 1925 to 1927) started to uncovering remains of drinks which, judging by the sediment, had been sitting on the bran glaze for years. The relatively new dishes had been perfectly suitoused in this manner.

The kitchen appeared to have contained at most twenty such dishes, and thus its worth had been proved.

Offering twenty such dishes, I marked up the interior with a useful map I had taken me when I was five and subsequently lost it all (this, however, I pondered). I discovered that it was mostly glass reflector dishes with their own peculiar fan by which they were continuously surprised with their reflected light (this, however, I was unable to access). These reflector dishes were made of a good deal of sapphire and, as I have said, somewhat glass: in 1927 I switched on my reflector and, having seen how easy it was to get rid of the reflector on my stove by putting a few thousandths of an

This sample maintains the spirit of the Surrealist corpus more so than any of the other samples generated at this temperature, yet still shows SAIGE's ability to create new, unique text. The sample begins with a declaration of its authorship; none of the texts in the corpus contain a similar statement, though there are several letters in the corpus. SAIGE uses the name Amie frequently. Amie is a character in René Crevel's *Babylon*, though it seems SAIGE identified the name without all of the associated character traits. SAIGE also did so with its mention of Mr. Coal, a character from Benjamin Péret's *Death to the Pigs*.

This sample illustrates how AI-generated text can often "feel" surreal. Much of this passage seems to follow a logical progression of ideas. In the second paragraph, there are two men—a man of the wood and his rival, the poet—and the narrator describes their conflict and each character's inner turmoil. This narrative is logical, yet the language itself is somewhat illogical, as if the words were chosen at random (or automatically). Take, for example, this sentence from the second paragraph: "In poetry, the wild beard is the beard of ignoble leaps." Can one read this in a way in which the beard is a metaphor? While one cannot determine SAIGE's intentions (since SAIGE cannot possess intentions), it is interesting to consider how this sample could have a Surrealist reading. This sample also contains

imagery which can be compared to the idea of the "Surrealist image" which champions illogical juxtaposition. Breton described the Surrealist image as such:

The image is a pure creation of the mind. It cannot be born from a comparison but from a juxtaposition of two more or less distant realities. The more the relationship between the two juxtaposed realities is distant and true, the stronger the image will be—the greater its emotional power and poetic reality. (qtd. in Rosenbaum 270)

These distant, juxtaposed realities are present throughout the sample SAIGE generated at temperature 0.8 as well as those generated at temperatures 0.2 and 0.5. Writing generated by AI and Surrealist writing often share in their use of illogical, Surrealist imagery

Temperature 0.5

The samples generated at temperature 0.5 illustrate a balance between repetition and logic. Several of the samples reference locations and characters from the Surrealist texts in the corpus, and some even identified some of the Surrealists themselves. The sample of note which I have chosen to reproduce here caught my attention because of its similarity to the writing style of Breton and the content of *Nadja*.

The sun is always on my left. I leave this area, which is only a few hundred meters from the main road. I go toward the house of the taxi-seller. He is on my right. I say: "The house on your left is yours. I'll go meet Nadja." Nadja is waiting for me at the corner of the Rue Lafayette and the Rue de Crimée. She seems quite at home in the shadow of the walls, set on a bench on the right, like everyone else on this side of the road. A keyless-vout is left on the ground. A letter says I must leave. But Nadja says she doesn't want to see me. She scolds me for thinking I'm immortal.
I leave.

*

'Where are we?'

This question has the appearance of a demand for justice. It constantly rears its eye, until I ask the same question in a third person. I have time to ask. And the same things turn up in all three of us: first, the remark that there is no such thing as antedated communication, between the writer and the writer's agent, and secondly, the remark about the color yellow.

The same thing happens with the entire sky: there is, on the right, a solid screen, and, alternately, an image projector and a printed map. The same thing happens with the night: on the map the night is aligned vertically with the axis of the north star, and the colored night is opposed by the Earth to the North by Tyrian city, and, on the projector's side, the compass bearing of the star G (which also happens to be the axis of the axis of the axis of the globe) is reversed.

Thus the object we are looking at is the Night, a creature whose movements we are unable to consciously control. It is a single-minded quest for knowledge which we all burst out into with joy at the discovery, at the suggestion of the make-up artists, that you want it, the government wants it.

'The Night.'— What?

"The Night."— Oh! it must be a poem.

"The Night."— Oh! it must be some fabulous comedy.
"The Night."— Yes, it will be a great comedy.
"The Night."— Oh! it must be some absurdist humor.
"The Night."— Oh! it must be some song.
"The Night."— Oh! it must be some a hit of the album.
"The Night."— Oh! it must be some terrible humor.
"The Night."— Oh! it must be some laughter!
"The Night."— Oh! it must be some low mood!
"The Night."— Oh! it must be some low mood!
"The Night."— Oh! it must be some ridiculous dream.
"The Night."— Oh! it must be some crazy dream.
"The Night."— Oh! it must be some pretty sad and sad
flowers.
"The Night."— Oh! it must be some pretty sad flowers.
"The Night."— Oh! it must be some pretty sad flowers.
"The Night."— Oh! it must be some pretty sad and sad
flowers.
"The Night."— Oh! it must be some pretty sad and sad.
"The Night."— Oh! it must be some pretty sad and sad.
"The Night."— Oh! it must be some pretty sad and sad.
"The Night."— Oh! it must be some trceries of perfumed
hair.
"The Night."— Oh! it must be some trceries of hair.
"The Night."— Oh! it must be some real trceries.
"The Night."— Oh! it must be some real trceries.
"The Night."— Oh! it must be real trunks.
"The Night."— Oh! it must be real trunks.
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"The Night."— Oh! it must be real trunks.
"The Night."— Oh! it must

To discuss this sample, I will address it as three separate passages: the text before the asterisk being the first, the text between the asterisk and 'The Night' being the second, and the remainder of the text being the third. The first passage seems like it could have been lifted right out of *Nadja* (aside from the nonsensical phrase "keyless- vout"). SAIGE has picked up on the main characters of the text—Nadja and the narrator (assuming that SAIGE's "I" can be read as the same "I" in *Nadja*)—and some of the locations used as well. The Rue de Crimée does not appear in *Nadja* but it does appear in Aragon's *Paris Peasant*. Compare SAIGE's description of this place ("Nadja is waiting for me at the corner of the Rue Lafayette and the Rue de Crimée") to a similar location in *Nadja*. "We separate, agreeing to meet the next day at the bar at the corner of the Rue Lafayette and the Rue du Faubourg Poissonnière" (Breton 71). Here, SAIGE has created two characters acting out a similar scene in a similar location. SAIGE's Nadja seems incredibly similar to Breton's Nadja; she is a bit anti-social, temperamental, and ready to end her love affair with the narrator. It is not remarkable that SAIGE detected and used a name from the corpus, but it is exciting that SAIGE wrote a version of *Nadja* which seems to be an accurate portrayal of Breton's *Nadja*. It seems that SAIGE understood how *Nadja* would act and react to her situation. This passage shows SAIGE's ability to replicate characters as well as narratives from the Surrealists texts of its corpus.

As previously mentioned, text generated with GPT-2 is often filled with repeated phrases. The lower the temperature, generally, the more likely one is to encounter repetition. Many of the samples SAIGE generated at temperature 0.2 are rendered nearly unreadable due to this issue. However, there is something to be said for the use of repetition in Surrealist texts. While Aragon's *The Adventures of Telemachus* does not appear in the corpus on which SAIGE was trained, this particular text engages with repetition in a way that looks very similar to much of what SAIGE generated at temperature 0.2. In Book V, Aragon repeats the word "Eucharis" 387 times, pausing partway through to offer a poem (*Telemachus* 69-73). The effect produces a wall of text similar to some of what SAIGE produced at temperature 0.2.

One of AI's great strengths is its ability to recognize patterns. In the last passage here, SAIGE has offered a variety of reactions to the phrase "The Night." Aside from one variant, the list follows a strict format. Breton employed lists and repetition in his *Manifesto of Surrealism* to address various Surrealists. Here is the most comparable example to SAIGE's list:

Swift is Surrealist in malice,
Sade is Surrealist in sadism.
Chateaubriand is Surrealist in exoticism.
Constant is Surrealist in politics.
Hugo is Surrealist when he isn't stupid.
Desbordes-Valmore is Surrealist in love.
Bertrand is Surrealist in the past.
Rabbe is Surrealist in death.
Poe is Surrealist in adventure.
Baudelaire is Surrealist in morality.
Rimbaud is Surrealist in the way he lived, and elsewhere.

Mallarmé is Surrealist when he is confiding.

Jarry is Surrealist in absinthe.

Nouveau is Surrealist in the kiss.

Saint-Pol-Roux is Surrealist in his use of symbols.

Fargue is Surrealist in the atmosphere.

Vaché is Surrealist in me.

Reverdy is Surrealist at home.

Saint-Jean-Perse is Surrealist at a distance.

Roussel is Surrealist as a storyteller. (Breton, *Manifestoes* 26-7)

Consider the similarities in this sample's last passage to the second chapter of Péret's *Death to the Pigs and the Field of Battle* which includes a 249-item list. Here is an excerpt that is similar structurally to SAIGE's list:

151. — A cloud of hair.
152. — A cloud of foreheads.
153. — A cloud of eyes.
154. — A cloud of noses.
155. — A cloud of mouths.
156. — A cloud of necks.
157. — A cloud of torsoes.
158. — A cloud of arms.
159. — A cloud of phalluses.
160. — A cloud of legs. (Péret 77)

Of course, Péret's and Breton's lists are more expertly crafted than SAIGE's list, which is less logical in its progression. SAIGE begins by naming genres of writing—poetry, comedy, song—and then jumps to moods and dreams. For a few lines, SAIGE gets stuck in a loop of variously

sad flowers before landing on hair, tracteries, and real trunks. To learn where SAIGE may have pulled these images, I analyzed the text which makes up the training corpus using Voyant.¹¹ “Night” and “flowers” are both used very frequently in the corpus, but “sad,” “real,” and “trunks” are hardly used at all. The idea that “The Night” must be real trunks is, perhaps, not as meaningful as the image of a cloud of hair. All of this is not to say that SAIGE has become a master Surrealist author, but it does offer an intriguing look into why one might consider AI-generated text similar to the text written by the Surrealists.

Temperature 0.2

I generated sixteen samples at temperature 0.2 and all but two of them began with the same phrase: “I have always loved to hear” followed by “the anecdotes of,” “the parricide of,” or some other phrase. As mentioned, many of the samples generated at this temperature, the lowest one used, were incomprehensible due to their repetitious nature. The sample reproduced here contained the smallest number of repeated phrases:

I have always loved to hear the anecdotes of the miracle-worker. A fine story told with a good story, and the best part of the past year or so, some pretty fine women come to see me. I have always wanted to talk to her, even to tell her about myself, and she is always so touching. I am so happy when I pass her by, and I would like to kiss her on the lips. I am not very fond of my words, or of her, or of myself, or of her. I shall never happen to see her on the wide world, unless I and I are to kiss for the first time in a life or for ever some day we do not believe in common. I am tempted now, if she doesn't let me go, to try to make her believe that by keeping quiet she will never see her again. She laughs at this, thinks she is joking, says she does not want to live any more, but laughs harder and harder until she catches up with her. She

lets go, sad, as she approaches the end of the talk and as she leaves her presence with me. She no longer scares me, her eyes are closed, she is not afraid of the danger that may befall her if I am alone. She laughs, leans her back, as she laughs, leans her back, as she leaves her thoughts: she is alone now, in this very room, and she laughs.

~

Another walk. The woman is swaying and red on the other side of the tear-gas can. A man is leaning against the wall. She can barely make out the two of them in mid-smoke. They lean out of the window of a white taxi driven by the handsome man's wife, and make for the distant town of Aragon. An old man is waiting for her at the gate of the city. The woman does not recognize him.

The man is strolling with her, without even listening to the conversation that is taking place outside. He is talking to himself, walking with her, he goes without even a sound. He is wearing thick black robes, with sleeves rolled up like sleeves. open to the elements, or closed to air, he is the one, and the man is sweating. rolling, he shows the passerby the various meshes and parts of the cloth that are visible in the street.

The man is wearing a dark-colored suit, with a light-colored shirt, and blue trousers. the woman carries a small child with her, with her. They talk, talk. and when she leaves they go to the garden. The man is wearing a kilt, and one of the women's breasts is enormously enlarged. He

points it at the man, who dodges it and leaps out of the window.

The man is dead. The woman walks away, and the woman goes to pick him up at her side.

The man is standing there, covered with dust and tattered stockings. The woman picks him up and brings him to me. She is very sad now, but I cannot help laughing. The man is so strong that she cannot but stare at him. Hasn't changed since the attack on her?

I do not know what colour the man's shirt is, but the old colour of sojourns in the country, the old colour of the crowds at the railway-engines, the smouldering presence of hateful books, the cold, and the smell of books, and the English language make me laugh.

I am not in a hurry, and the man advances towards me. I try his hand at me. He does not respond at all.

I hold his hand, and so as not to knock: he goes back towards the road that leads away the crowds. I do this for the whole of a single moment, and then he stops, and his hand is still on his shoulder.

He has not got used to the crowds, the silence, the books, the cars. He grasps the lack of privacy in front of him and stares into silence. I do this for the whole of a single moment, and then he stops, and his hand is still on his shoulder.

I do this for the whole of a single moment. And then he stops again, and my hand is still on his shoulder.

He does not respond at all.

I do this for the whole of a single moment. And then he stops again, and I do this for the whole of a single moment. He stares at me for a long time. This is the second time he has had me. Volume drops.

This is the second time it has been repeated.

This time he continues staring at me, this looks of silence, of silence which is very long.

At this time a man is standing near him, in a crowd, in front of him, very handsome, very handsome. He advances. I advance. He does not reply.

This is the third

This sample is notable for a number of reasons. While the first paragraph is difficult to follow and seems to have trouble with grammar and pronouns (the entire sample struggles with identifying characters since SAIGE does not name any of the characters here), the subject matter is a love story between two characters who seem at odds with each other. This theme is present in several of the Surrealist texts in the corpus. The narrator seems to have some dislike for “her,” and she recognizes him as a “danger” to her.

Then, in the second paragraph, again SAIGE struggles with keeping characters in order. I am unable to determine if “the woman” mentioned in here is the same woman from earlier. SAIGE introduces two new characters, “a man,” and “an old man.” In the third paragraph, again, it is difficult to decipher if SAIGE has introduced new characters or if the narrative is being continued, but the switch of articles from “a” to “the” leads me to believe that these are the same characters from before. It is interesting, too, that SAIGE updates the characters’ clothing in very specific detail; earlier, the man wore “thick black robes, with sleeves rolled up like sleeves” and now he wears “a dark-colored suit, with a light-colored shirt, and blue trousers.” The woman now has a child, and suddenly the man is now dressed in a kilt, yet once he dies he stands “covered with dust and tattered stockings.” Later, SAIGE

continues to describe the man's clothing, now shifting into first person: "I do not know what colour the man's shirt is." In this sample, SAIGE switches from "color" to "colour," which is fairly representative of the corpus as both spellings were used in the mixed British and American translations used.

While this sample contained the least amount of repetition of all the samples generated at this temperature, there are still repeated phrases and ideas evident throughout the sample. Toward the end of the sample, SAIGE creates a pattern. Rather than repeating a phrase word-for-word (as shown in the sample at temperature 0.5), SAIGE offers variations on the phrase, "I do this for the whole of a single moment, and then he stops," by enumerating the usage of this phrase; later, it becomes, "I do this for the whole of a single moment. And then he stops again, and I do this for the whole of a single moment." SAIGE continues, "This is the second time it has been repeated." Here SAIGE recognizes that it is repeating a pattern. While the sample ends abruptly, one can assume that the ending phrase, "This is the third," may very well have gone on to read, "This is the third time it has been repeated" or "This is the third time he has me," identifying another enumerated repeated phrase.

In this sample one can observe a time when SAIGE recognized a name from the corpus yet used it indiscriminately with no reference to the actual nature of the character or figure. In the second paragraph, SAIGE has used Aragon as a "distant town" and not as Louis Aragon, the Surrealist, as he appears in many of the texts in the corpus.

Conclusion

When selecting samples to reproduce in this paper, I leaned more towards the prosaic samples than the poetic samples. The narrative-driven samples tended to follow a more logical progression of ideas while the more poetic samples were more difficult to comprehend and perhaps engaged in too much free association. Given the mix between

prose and poetry present in the corpus (among other genres), I was surprised that most of the samples were prosaic, some with interjections of poetry (as seen in the sample generated at temperature 0.8) or lacking poetry completely. Many of the samples that contained poetry were so fraught with repetition that they were nearly incomprehensible. I believe that SAIGE performed better when writing in prose than in poetry, and the samples here represent that belief in that they are all more prosaic than poetic. However, the samples did not skew so heavily towards prose as it may seem by my choice of samples included here.

In all experiments, it is important to consider what could be improved in the future and to identify issues which arose during the process. One issue I identified is that GPT-2, in order to seem “real” and be knowledgeable about popular culture, created several anachronisms within some of the samples it generated. Though SAIGE’s training corpus is made up entirely of early- to mid-twentieth century text, it generated several samples regarding Star Wars and Marvel movies. Given that GPT-2 is inherently trained on data from the Internet, specifically data which interested Reddit users (“Better Language”), it is no surprise that such topics appeared. I found that SAIGE was most likely to write about such anachronisms at temperature 0.8. This is logical given that SAIGE is the least likely to generate the most probable word at this temperature, which was the highest temperature I worked within. At temperature 0.8, the heightened randomness of SAIGE’s predictions encouraged it to revert back to GPT-2’s Internet dataset. It seems that, at every temperature, some samples were generated with an understanding of the appropriate time period (that is, the time period in which the texts in the corpus were written), many samples referenced phonographs and one even discussed the quarter-finals of the 1914 FIFA World Cup. I maintain that GPT-2 was the best AI for this experiment, but perhaps SAIGE needed more training in order to produce results that were more accurate to the corpus.

The samples reproduced here offer an insight into the nature of how GPT-2 constructs narratives. GPT-2 is able to produce short works of fiction that follow narrative patterns

similar to those seen in fiction written by the Surrealists. It is also able to combine multiple forms—prose, poetry, and something in between the two—in one narrative, a style used often in Surrealist literature. The way that GPT-2 selects words mirrors the way that Surrealists often engaged with automatic writing to create disjointed wholes. Each sample follows a theme or narrative frame—say, wandering around Paris or waiting for Nadja—and moves rapidly from one action or idea to the next, sometimes introducing new characters or ideas and abandoning them before they are ever fully developed. While some of the samples had clear divisions, they all still functioned as a whole. In terms of narrative, form, and structure, the samples produced by SAIGE shared many similarities with some of the Surrealist texts which made up its training corpus. The specific relationship between Surrealism and Artificial Intelligence is not accidental and deserves further exploration.

Endnotes

1. In 2019, The New Yorker posed the question, "Can a machine learn to write for The New Yorker?" and used

snippets of text generated by GPT-2 to write "[The Next Word.](#)" Ross Goodwin developed an AI which wrote [several short films](#), including *Sunspring* and *It's No Game*, and starred in and directed *Zone Out*. 2013 marked the first iteration of [NaNoGenMo \(National Novel Generation Month\)](#) in which GitHub users develop codes to generate texts that are at least 50,000 words long. For Black Friday in 2019, the popular and controversial card game company Cards Against Humanity [challenged its writers to sell more cards than an AI](#) or else lose their jobs (the writers beat the AI in the end).

2. The corpus that I used contains the following texts, as well as a handful of poems written by André Breton: Louis Aragon's novel *Paris Peasant*, André Breton's novel *Nadja*, the screenplay of Luis Buñuel and Salvador Dalí's film *Un Chien Andalou*, Paul Éluard's collection of poems *Shadows and Sun*, Philippe Soupault and Breton's *The Magnetic Fields*, selections from Éluard's *Letters to Gala*, an essay from Breton's *Surrealism and Painting*, René Crevel's *Babylon*, Robert Desnos's *The Punishments of Hell*, André Breton's *Manifestoes of Surrealism*, and Benjamin Péret's *Death to the Pigs*. Refer to the bibliography for full citations of these texts.

3. If you are interested in learning more about GPT-2, see "[Language Models are Unsupervised Multitask Learners](#)" by [Alec Radford et al.](#), published on OpenAI's website.

4. Though the publication of "The Manifesto of Surrealism" in 1924 is widely used to mark the beginning of Surrealism, I have chosen to include works published before 1924 so as to cast a wide net, especially given the limited availability of English texts.

5. The concept of naturalistic AI-generated text may not be clear. My previous encounters and earlier attempts with other machine learning methods exposed me to text that quickly alerts the reader to its computer authorship. Text that is not naturalistic feels discordant and is often plagued by roundabout logic and errors in grammar. Naturalistic text is here defined as text that a reader would not be able to easily suspect of computer authorship on an initial encounter. GPT-2 is able to produce naturalistic text for a variety of reasons, but chiefly its use of natural language processing (NLP). Refer to note 4 above for more information.

6. In February 2021, OpenAI released an API with access to GPT-3 on a waitlist basis; due to its limited availability and lack of accompanying resources, I chose to continue this project with GPT-2.

7. I relied on the following tutorials, used in conjunction with Stack Overflow for troubleshooting: "[\(Extremely\) Simple GPT-2 Tutorial](#)" and "[Beginner's Guide to Retrain GPT-2 \(117M\) to Generate Custom Text Content.](#)"

8. Though Python 3.6 is not the most current version of Python, it is the most up-to-date version that can run Tensorflow 1.15, which was necessary to train GPT-2 following the aforementioned tutorials.

9. There are two modes of generating text from various models of GPT-2, including SAIGE. One may either generate conditional samples, in which a user inputs a prompt and allows the model to complete it. For example, if I were to generate conditional samples with SAIGE, I could input, "Surrealism is..." and allow SAIGE to finish that sentence and write based on that prompt. With unconditional samples, SAIGE generates its own starting point. This method allows a lesser amount of human involvement, which best suited my purposes.

10. You can view all of the samples generated by SAIGE for this paper at this public [GitHub repository](#).

11. [Voyant](#) is an online tool which allows users to input or upload text. Voyant performs textual analysis and offers data, such as word frequency, word usage trends, and more.

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