Primite 1.02: A Text-Perceiving Basic Artificial Cognitive System

Muhammad Ali, JN Research
Correspondence: ali@jn-research.com
September, 10th, 2024

This report introduces Primite 1.02 – our text-perceiving basic artificial cognitive system. Using Primite 1.02, we have shown that our artificial cognitive systems intrinsically possess the behavioral abilities to have original thoughts and form memories completely of their own free will. It also formed short-, intermediate-, and long-term memories. These abilities are inherent features of human brains and are necessary prerequisites for humans to learn and exhibit intelligence. These intrinsic abilities have long been thought to exist only within biological systems. Until now, no system designed on binary settings, no matter how sophisticated, has replicated these higher cognitive functions. Despite its modest architecture, Primite 1.02 is the first system designed on binary settings to conclusively demonstrate these abilities. Furthermore, Primite 1.02 also inherently exhibited the ability to have thoughts even before it was given as stimuli; another important precursor of planning, anticipation, and intelligence in human experiences. With Primite 1.02, we achieved some historic and crucial milestones in our vision to emulate human-like Cognition, experiences, behavior, and intelligence.

1. Introduction

In this report, we address two fundamental questions:

1. Does our artificial cognitive systems possess the ability to have original thoughts of their own free will?
2. Does our artificial cognitive systems have the ability to form memories (short-term and long-term)?

The ability to create original thoughts and memory formations are inherent features of the human brain and these abilities are quite apparent in human cognitive experiences. These intrinsic abilities are necessary prerequisites for humans to learn, exhibit intelligence, and develop new ideas[1, 2]. Since our goal with our artificial cognitive systems is to emulate human-like cognitive experiences, it is crucial that our cognitive systems intrinsically exhibit the abilities of memory formation and original thoughts. Establishing and proving that our cognitive systems possess these abilities are essential and historic milestones in our vision to emulate human-like cognition, experiences, behavior, and intelligence.

We will use our basic artificial cognitive system named Primite 1.02 as a test subject to answer the above fundamental questions and show that our cognitive systems do possess the abilities of memory formations and having original thoughts. Primite 1.02 receives text as input/stimuli; it

perceives those text inputs of its own free will and if it wants, it shares its thoughts in text form. It should be noted that it is possible that for some text inputs, Primite 1.02 won't share its thoughts; the choice is its own. A good analogy to think about this setup is to imagine the following scenario:

*"Imagine yourself to be a child psychologist and consider a kid named **A**. You are doing a word repeating exercise with **A**, where you will give him words to repeat. **A** perceives those words however **A** wants and if **A** wants to repeat given words, **A** will repeat them. Based on his responses, your task as a child psychologist would be to evaluate if **A** exhibits abilities to have original thoughts and form memories. A simple yet effective indication for **A** having the ability to have Original thoughts would be if **A** comes up with new words in his responses; words which were not given to him as stimuli. For you, **A's ability to** have new words in his responses, which he hasn't listened to before is significant. It signifies that his brain perceived the words you gave him differently than you intended. Furthermore, new words in his responses show how he perceived the words you gave him. This will serve as a solid indication that **A** can have original thoughts. It should be noted that new words in his responses can be meaningless or have some meaning, but your focus is to establish that he possesses the ability. Likewise, a simple indication for **A** to have the ability to form memories would be the frequency of given words as stimuli and the frequency of those words in responses. For example, consider the word 'Adaptron'. Assume that, you have given the word 'Adaptron' as stimuli 5 times during the exercise. **A** responded with the word 'Adaptron' 10 times in his responses i.e. 5 times more than you gave it. If you follow the 'Encoding, Storage and Retrieval' model[3, 4] or any of its derivatives to understand memories, the frequency of the word 'Adaptron' in responses gives a strong indication of memory formation. It indicates that **A** is storing the word 'Adaptron' somewhere in his brain and retrieving it at later times. Storage is only possible if the information of 'Adaptron' gets encoded first. As a psychologist, you are satisfying the criteria of the 'Encoding, Storage and Retrieval' model of memory and can confidently establish that **A** can form memories. It should be noted that you are not concerned with the neurophysiology and mechanisms of memory formation rather you are establishing memory formation purely based on the behavior of **A**."*

There is an intrinsic flaw with this analogized scenario and it is of utmost importance that we address that before proceeding further. Since our criteria of **A** having original thoughts is to have new words in **A**'s responses, words **A** has never heard before, how do you establish that **A** has not heard these 'new words' before the exercise? Perhaps, **A** has already heard these words and formed their memories before the exercise and is merely retrieving those memories while responding. For you, those are new words, for him they are not. If this is the case, establishing **A** can have original thoughts is fundamentally incorrect and it will be a false claim. Now the question becomes "How do we address this issue with our cognitive system Primite 1.02?" After all, we are making an enormous and consequential claim that our cognitive systems possess the ability to have original thoughts. With Primite 1.02, we will have complete information on all the text inputs given to it throughout its lifetime. This will ensure Primite 1.02 has not received the new words it generated, beforehand. Secondly, we will look at the responses and behavior of Primite 1.02 throughout its lifetime, before claiming that it possesses the ability to have original thoughts. Based on the above discussion, now we will formalize definitions of lifetime, original thoughts, and memories that we will use to evaluate Primite 1.02.

2. Definitions

For this report, we define Lifetime in terms of the total number of text stimuli a cognitive system has to process instead of the usual time parameter. Similarly, we also define 'Thoughts Producing Lifetime' in terms of the total number of responses generated by the cognitive system after processing all the text stimuli. For example, if we give 10 stimuli to an artificial cognitive system and it produces 5 responses, its Lifetime is 10 stimuli and its Thoughts Producing Lifetime is 5 responses. In other words, we are merely saying that the cognitive system has to process 10 stimuli in its lifetime and it can produce as many thoughts as it wants of its own free will. Using number of stimuli for lifetime will have several advantages for this report. Firstly, using number of stimuli for lifetime will make comparison studies and reproducibility of results much easier. Secondly, compute time for different machines executing the same cognitive system and processing the same stimuli can be drastically different for different machines because of computational specifications and for this report our interests are purely on responses and not the time.

Assume an artificial cognitive system **A** and let there be two sets $\boldsymbol{S_I}$ and $\boldsymbol{S_R}$ associated with **A**. Elements of set $\boldsymbol{S_I}$ are words given to **A** as text inputs. Elements of set $\boldsymbol{S_R}$ are responses of **A** in text form.

Lifetime and Thoughts Producing Lifetime

Let lifetime of artificial cognitive system **A** be denoted by $\boldsymbol{L}$ and is defined by total number of text inputs **A** has to process in an experiment, given by equation 1.

$$\boldsymbol{L} = |\boldsymbol{S_I}| \qquad 1$$

Let's normalize Lifetime in the range 0 to 1 using the Min-Max normalization method, where $\mathrm{Min}(L) = 0$ and $Max(L) = |\boldsymbol{S_I}|$**.** Let normalized lifetime be denoted by $\boldsymbol{\acute{L}}$ and is defined by equation 2.

$$\boldsymbol{\acute{L}} = \frac{\boldsymbol{L}}{|\boldsymbol{S_I}|} \qquad 2$$

Let Thoughts Producing Lifetime of an artificial cognitive system **A** be denoted by $\boldsymbol{L_T}$ and is defined by total number of responses generated by **A** in an experiment, given by equation 3.

$$\boldsymbol{L_T} = |\boldsymbol{S_R}| \qquad 3$$

Normalization of Thoughts Producing Lifetime using Min-Max normalization method is given by equation 4, where Normalized Thoughts Producing Lifetime is denoted by $\boldsymbol{\acute{L}_T}$.

$$\boldsymbol{\acute{L}_T} = \frac{\boldsymbol{L_T}}{|\boldsymbol{S_R}|} \qquad 4$$

Original Thoughts

Let an arbitrary original thought by artificial cognitive system **A** be defined by $\boldsymbol{x}$. Using sets $\boldsymbol{S_I}$ and $\boldsymbol{S_R}$, Original Thoughts of **A** are defined by equation 5.

$$\boldsymbol{S_R/S_I} = \{\boldsymbol{x} \mid \boldsymbol{x} \in \boldsymbol{S_R}\ and\ \boldsymbol{x} \notin \boldsymbol{S_I}\} \qquad 5$$

Total number of original thoughts of **A** is given by $|\boldsymbol{S_R/S_I}|$. Condition for cognitive system **A** to possess the ability to have Original Thought is given by condition C1.

$$|\boldsymbol{S_R/S_I}| > \boldsymbol{0} \qquad \text{C1}$$

Memories

Let $\boldsymbol{f_{S_R}(y)}$ denote Number of times $\boldsymbol{y}$ appears in set $\boldsymbol{S_R}$ and $\boldsymbol{f_{S_I}(y)}$ denote the Number of times $\boldsymbol{y}$ appears in set $\boldsymbol{S_I}$. Furthermore, let a single memory of **A** be denoted by $\boldsymbol{y}$ and set of memories of text inputs of **A** be denoted by $\boldsymbol{M_T}$ and are defined by equation 6.

$$\boldsymbol{M_T} = \{\boldsymbol{y} \in \boldsymbol{S_I} \cap \boldsymbol{S_R} \mid \boldsymbol{f_{S_R}(y)} > \boldsymbol{f_{S_I}(y)}\} \qquad 6$$

Let the set of memories of original thoughts of **A** be denoted by $\boldsymbol{M_O}$ are defined by equation 7.

$$\boldsymbol{M_O} = \{\boldsymbol{y} \in \boldsymbol{S_R} \mid \boldsymbol{f_{S_R}(y)} > \boldsymbol{1}\} \qquad 7$$

Let the set of Total Memories of **A** be denoted by $\boldsymbol{M}$. Total memories of **A** is the sum of memories of text input and memories of original thoughts and is given by equation 8.

$$\boldsymbol{M} = \boldsymbol{M_T} \cup \boldsymbol{M_O} \qquad 8$$

Condition for Cognitive System **A** to have the ability of memory formation is given by condition C2.

$$|\boldsymbol{M}| > \boldsymbol{0} \qquad \text{C2}$$

Let initial and final occurrences of memory y in $\boldsymbol{\acute{L}_T}$ (equation 4) of A be denoted by $\left[\boldsymbol{\theta_y}\right]_{\boldsymbol{ini}}$ and $\left[\boldsymbol{\theta_y}\right]_{\boldsymbol{fin}}$, respectively. Furthermore, let the sets of Short-Term, Intermediate-Term, and Long-Term Memories be denoted by $\boldsymbol{M_S}$, $\boldsymbol{M_I}$, and $\boldsymbol{M_L}$ and are given by equations 9, 10, and 11, respectively.

$$\boldsymbol{M_S} = \{\boldsymbol{y} \in \boldsymbol{S_R} \mid \left[\left[\boldsymbol{\theta_y}\right]_{\boldsymbol{fin}} - \left[\boldsymbol{\theta_y}\right]_{\boldsymbol{ini}}\right] \leq \boldsymbol{0.05\acute{L}_T}\} \qquad 9$$

$$\boldsymbol{M_I} = \{\boldsymbol{y} \in \boldsymbol{S_R} \mid \boldsymbol{0.05\acute{L}_T} < \left[\left[\boldsymbol{\theta_y}\right]_{\boldsymbol{fin}} - \left[\boldsymbol{\theta_y}\right]_{\boldsymbol{ini}}\right] \leq \boldsymbol{0.2\acute{L}_T}\} \qquad 10$$

$$\boldsymbol{M_L} = \{\boldsymbol{y} \in \boldsymbol{S_R} \mid \left[\left[\boldsymbol{\theta_y}\right]_{\boldsymbol{fin}} - \left[\boldsymbol{\theta_y}\right]_{\boldsymbol{ini}}\right] > \boldsymbol{0.2\acute{L}_T}\} \qquad 11$$

We will use the conditions C1 and C2 to evaluate if our Artificial Cognitive System Primite 1.02 possesses the ability to have original thoughts and form memories.

3. Architecture of Primite 1.02

Primite 1.02 belongs to our primitive artificial cognitive systems family which are purpose built as laboratory cases with basic architectures to evaluate behavior and performance. Primite 1.02 is built with our developed artificial neurons we call Adaptrons[5, 6] and it consists of three types of Adaptrons; Input-Receiving, Hidden, and Output-Sharing. These types are analogous to Receptor, Inter, and effector neurons in the human nervous system, respectively. Furthermore, it has an Encoder which uses Tokenizer to transform text words into numeric sequences, which are receivable as inputs by Input Receiving Adaptrons. Likewise, it has a decoder to transform Outputs generated by Output Sharing Adaptrons back to Text words. Architecture and Specifications of Primite 1.02 are shown in Figure 1 and Table 1, respectively.

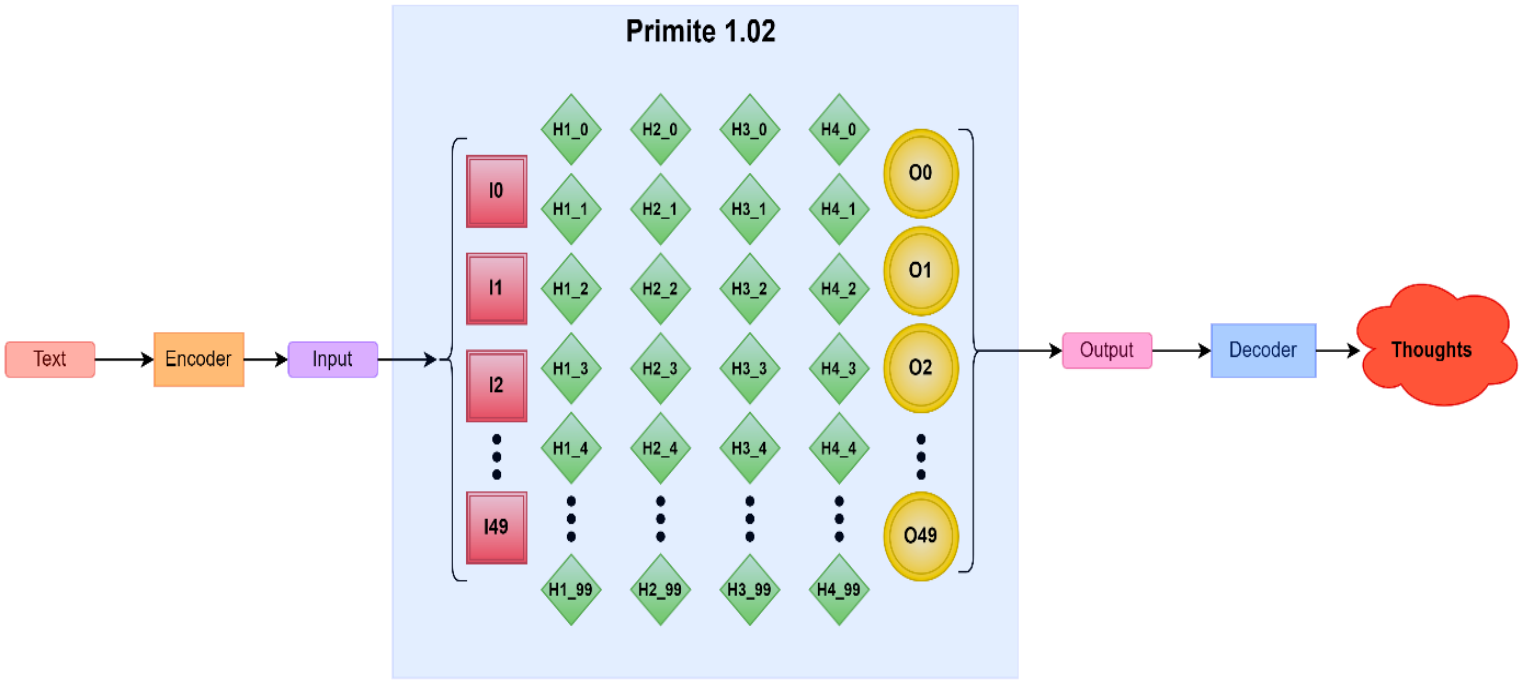

Figure 1. Architecture of Primite 1.02. It is built with 3 types of Adaptrons arranged in 6 layers (1 layer of Input-Receiving, 4 layers of Hidden, and 1 layer of Output-Sharing Adaptrons).

Functionality of Primite 1.02	**Text**
Total Number of Adaptrons	**500**
Total Number of Adaptron Layers	**6**
No. of Input-Receiving Adaptrons	**50**
Layers of Input-Receiving Adaptrons	**1**
No. of Hidden Adaptrons	**400**
Layers of Hidden Adaptrons	**4**
No. of Output-Sharing Adaptrons	**50**
Layers of Output-Sharing Adaptrons	**1**
Details of Layer and Individual Connections between Adaptrons	**Not Shared**
No. of Artificial Neurotransmitters received and produced by Adaptrons	**1**
Type of Artificial Neurotransmitters[5]	**Type a**
No. of Artificial ionic species[5]	**1**
Type of ionic species[5]	**S1**
Genetic Parameters details of Adaptrons	**Not Shared**
Output Threshold Values of Adaptrons	**Not Shared**

Table 1: Specifications of Primite 1.02 and its Adaptrons

4. Experimental Setup

We ran 8 independent experiments to evaluate the performance and capabilities of Primite 1.02. In all 8 independent experiments, we initialized Adaptrons of Primite 1.02 with different genetic parameters. A good analogy to think about this setup would be to consider each experiment to be a different version of Primite 1.02; having its unique genetics. Furthermore, we gave the same text input stimuli to all 8 versions. Text inputs and encoded text inputs given to Primite 1.02 are shown in **Appendix A**. Logically, we expect all 8 versions of Primite 1.02 to perceive the same text input stimuli differently; since they are genetically different and will adapt and evolve differently. If capable, we expect all 8 of them to form different memories and have different original thoughts. However, we also expect that different versions can perceive some text stimuli similarly, have some similar original thoughts and can form similar memories. We also expect that it is possible that some versions can form memories and don't have original thoughts and vice versa. It all depends on their genetics.

As established in part 2 of our Adaptron Blog[6], we possess capabilities to control Adaptrons using genetic parameters and merely make them as basic input-output subsystems i.e. whatever inputs they receive, they pass as outputs. In experiment 1, we configured all 500 Adaptrons of Primite 1.02 as basic input-output subsystems. The resulting cognitive system in our case Primite 1.02 merely would be a basic communication system i.e. whatever input stimuli it receives, it produces them as thoughts. Experiment 1 is not an interesting case in terms of our agenda, however, we must stress that Primite 1.02 of experiment 1 works on the same principles as any other cognitive system. It just happens to act as a basic communication system. Experiment 1 gives us a sense of how we can control cognitive systems at our will (an important feature to have). We don't expect Primite 1.02 of Experiment 1 to form memories or have any original thoughts. The system's behavioral abilities to have original thoughts or to form memories fundamentally stem from the adaptabilities of its neurons (building blocks). We have established in Adaptron Blogs[5, 6] that adaptabilities are governed by genetic parameters and stimuli. We have deliberately configured Adaptrons in experiment 1 to not adapt, so we don't expect to see any higher behavior abilities like memory formations and original thoughts.

We categorized the remaining 7 experiments into 2 categories C-A and C-B. In C-A category experiments, we configured Adaptrons to connect with only one post-Adaptron at a time. In other words, if an Adaptron produces an output, it can pass that output as input to only one Adaptron of its own choice. We ran 4 experiments of C-A category labelled as C-A1 to C-A4. In C-B category experiments, we configured Adaptrons to connect with any number of post-Adaptrons at a time, with a maximum connection number to be 5. In other words, if an Adaptron produces an output, it can pass that output as inputs to multiple Adaptrons of its own choice in the range 1 to 5. We ran 3 experiments of C-B category labeled as C-B1, C-B2 and C-B3. We expect Primite 1.02 of C-A and C-B category experiments to show behavior abilities to have original thoughts and form memories, as given genetic parameters of Adaptrons in these experiments support their adaptabilities. The results of these experiments will answer the fundamental questions of this report.

5. Results and Discussion

Primite 1.02 satisfied the C1 and C2 conditions of having original thoughts and memory formation in both categories (C-A and C-B) experiments. Table 2 summarizes the results of all 8 experiments done on Primite 1.02. Experimental data of each experiment can be accessed through this Data Repository link: https://jn-research.com/primite-1-02

Experiment	No. of Text Inputs $\|S_I\|$	No. of Thoughts $\|S_R\|$	No. of Original Thoughts $\|S_R / S_I\|$	No. of Memories of Text Inputs M_T	No. of Memories of Original Thoughts M_O	Total Numbers of Memories Formed M
1	1110	1110	0	0	0	0
C-A1	1110	892	34	58	7	65
C-A2	1110	840	46	34	5	39
C-A3	1110	838	28	29	2	31
C-A4	1110	982	12	21	0	21
C-B1	1110	765	147	61	71	132
C-B2	1110	776	112	51	44	95
C-B3	1110	935	110	54	56	110

Table 2: Performance of Primite 1.02 in all 8 experiments

Primite 1.02 also exhibited memory formations of original thoughts except in experiment C-A4. As expected, in experiment 1 where we configured Adaptrons to not adapt, Primite 1.02 didn't exhibit behavioral functionalities of memory formation and original thoughts. This fortifies our claims that behavioral features of a cognitive system fundamentally stem from the adaptabilities of neurons and their connections. Furthermore, thoughts of Primite 1.02 in experiment 1 were precisely the same as the given text inputs, hence Primite 1.02 merely acted as a basic input-output communication system. Thoughts of Primite 1.02 in all 8 experiments are shown in **Appendix B**. Likewise, Original Thoughts produced by Primite 1.02 in all 8 experiments are shown in **Appendix C**. Based on Table 2, Primite 1.02 on average had more original thoughts and memory formations in C-B experiments as compared to C-A category experiments. The average of original thoughts in the C-B category experiment was 123 as compared to 30 in the C-A category experiments. Likewise, the average of memory formation in C-B category experiments was 112 as compared to 39 for C-A category experiments. Although, the number of experiments for average calculation was very small, however, the averages are significantly different to ignore. This aspect requires further study to see if giving Adaptrons freedom to communicate with multiple Adaptrons simultaneously results in more original thoughts and memory formations. On the contrary, if we look at the thoughts of Primite 1.02 in both category experiments, thoughts in C-A category experiments were closer to given text inputs as compared to C-B category experiments. For comparison, snippets of thoughts of Primite 1.02 in Experiment 1, C-A4, and C-B3 are shown in Figure 2. Thoughts of C-A4 are closer to experiment 1 when compared to thoughts of experiment C-B3. This can be justified, since in the C-B category experiments Primite 1.02 has more original thoughts and forms more memories, hence taking outputs away from given text inputs. Intuitively, if one wants thoughts of Cognitive Systems closer to given text inputs, the configuration of Adaptrons should be of C-A category experiments. However, to concretely establish these correlations, a further study with more number of experiments is recommended.

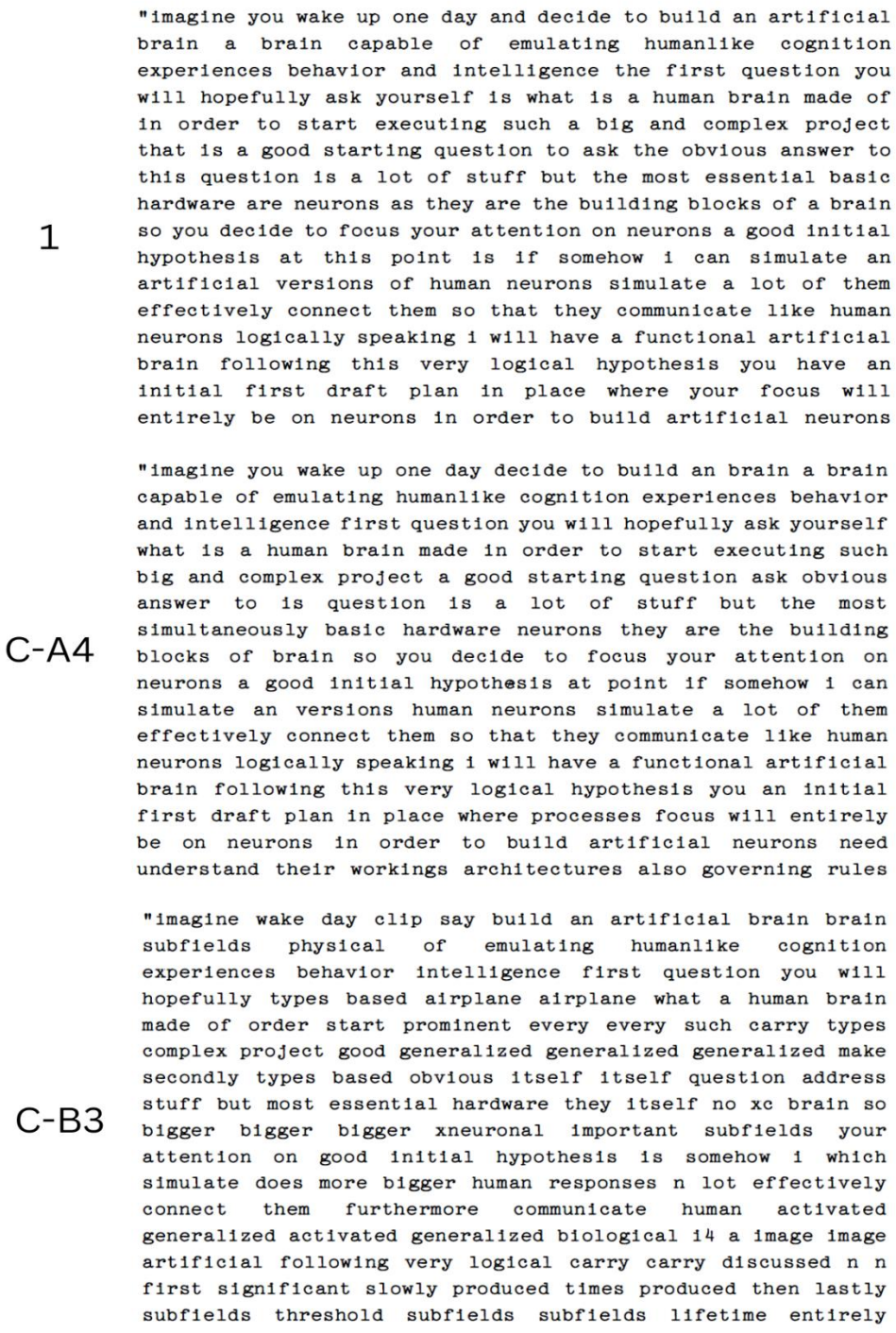

Figure 2. Snippets of Thoughts of Primite 1.02 in Experiment 1, C-A4 and C-B3

In addition, Primite 1.02 also exhibited the ability to form Short-Term, Intermediate-Term, and Long-term memories as defined by equations 9, 10, and 11, respectively. Table 3 shows the number of short-, intermediate-, and long-term memories.

Experiment	No. of Short-Term Memories $\lvert M_S \rvert$	No. of Intermediate-Term Memories $\lvert M_I \rvert$	No. of Long-Term Memories $\lvert M_L \rvert$
1	0	0	0
C-A1	4	17	44
C-A2	2	12	25
C-A3	2	7	22
C-A4	1	0	21
C-B1	26	13	93
C-B2	24	15	26
C-B3	30	24	56

Table 3: Number of Short-, Intermediate-, and Long-term Memories Formed by Primite 1.02

Memories of text inputs and original thoughts of Primite 1.02 in all experiments can be accessed through this link: https://jn-research.com/primite-1-02. In this report, we are going to discuss memories of experiment C-B3 to discuss some of the salient features. Figure 3 shows the occurrences of text inputs throughout Primite 1.02's lifetime (normalized), which satisfies the memory formation Condition (C2). Figure 4 shows the occurrences of memories of text inputs throughout Primite 1.02's thoughts-producing lifetime (normalized). Figure 5 shows the frequencies of text input memories and their frequencies in the given text.

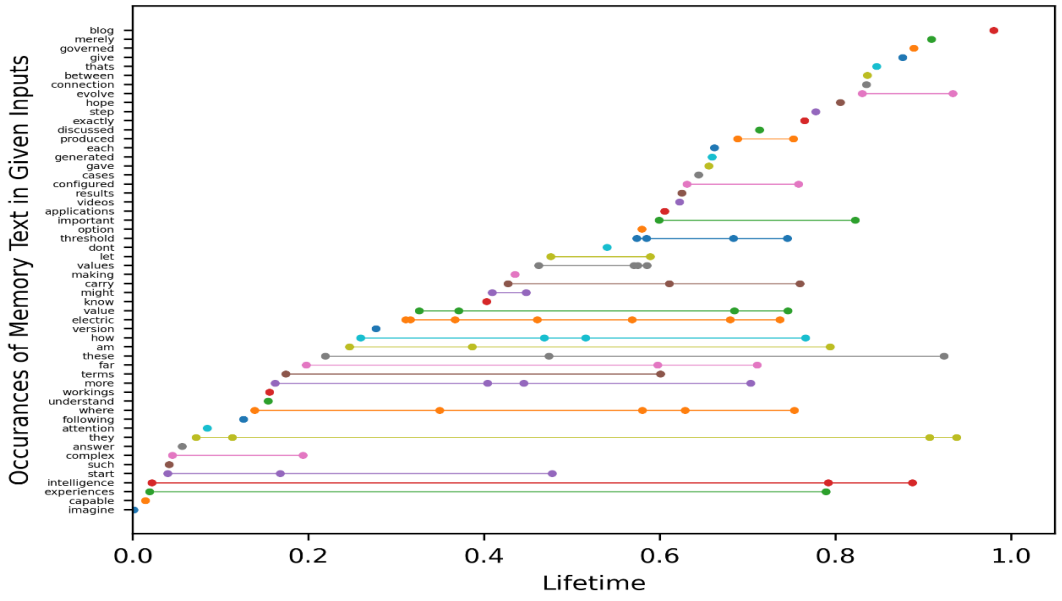

Figure 3: Occurrences of Memory Text Inputs throughout Primite 1.02's lifetime (normalized)

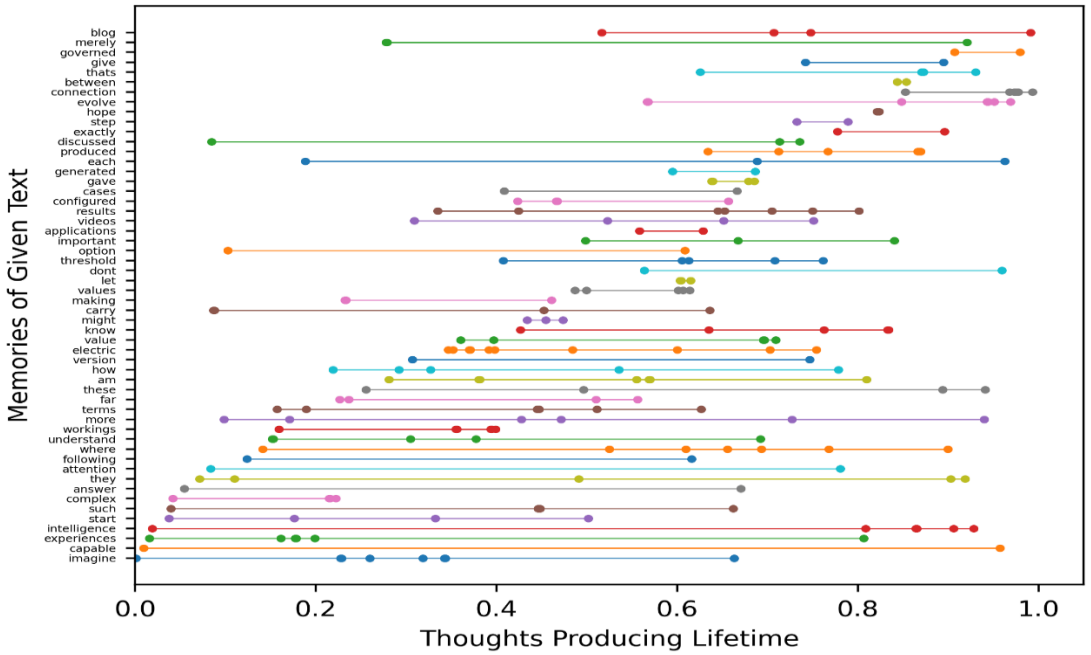

Figure 4: Occurrences of Memories of Given Text inputs of Primite 1.02

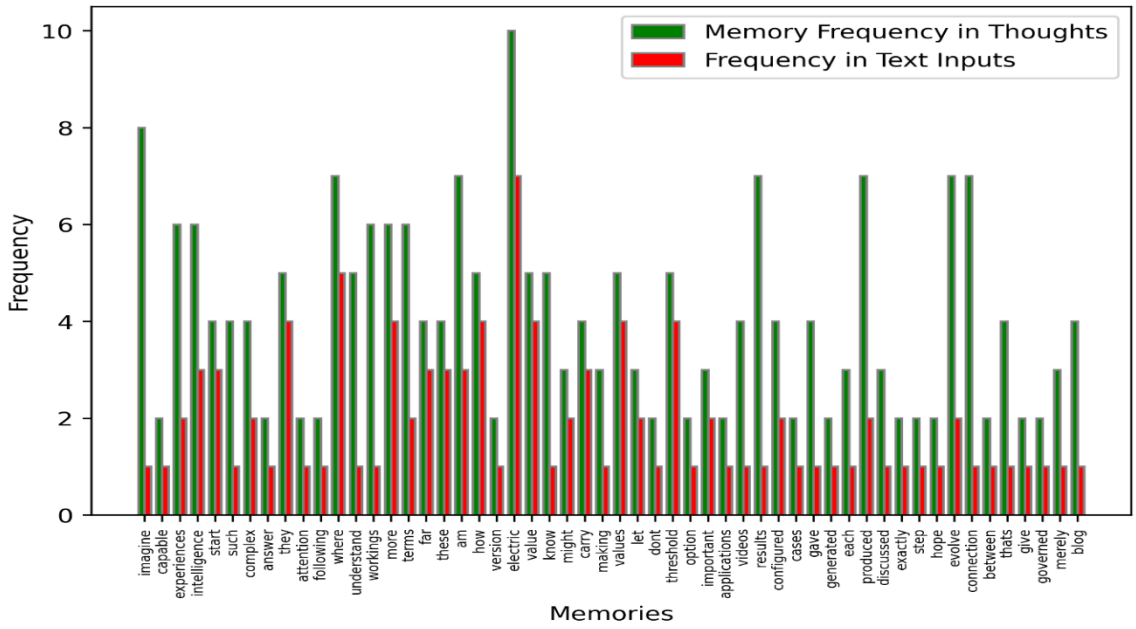

Figure 5: Frequencies of text input memories and their frequencies in the given text.

Consider text input ‘imagine’, which was the first input given to Primite 1.02 (Figure 3) and it was only given once throughout its lifetime (Figure 5). Primite 1.02 had its thought 8 times throughout about 80% of its thoughts-producing lifetime (Figure 4). The text ‘imagine’ is a clear example of a long-term memory (equation 11). Primite 1.02 exhibited another interesting feature, where it had thought of a text input before the input was given. As an example, consider text input ‘discussed’, which was given at about 72% of Primite 1.02’s lifetime (Figure 3), but it already had thought of ‘discussed’ at about 8% of its thoughts producing lifetime for the very first time (Figure 4). Although lifetime and thoughts producing lifetime are different parameters, based on S_I and S_R (Table 2), we can say with certainty that Primite 1.02 had thought of ‘discussed’ before it received it as input. At about 8% of its thoughts producing lifetime, ‘discussed’ was an original thought, but since we are analyzing the results after the completion of the experiment, it falls under the category of memories of text input. The feature of having thoughts before receiving corresponding stimuli is a crucial precursor of planning, anticipation, and intelligence in human experience and behavior. Primite 1.02 passed another significant checkpoint by exhibiting this ability. Occurrences of Memories of Original Thoughts and their frequencies throughout Primite 1.02’s lifetime are shown in Figures 6 and 7, respectively.

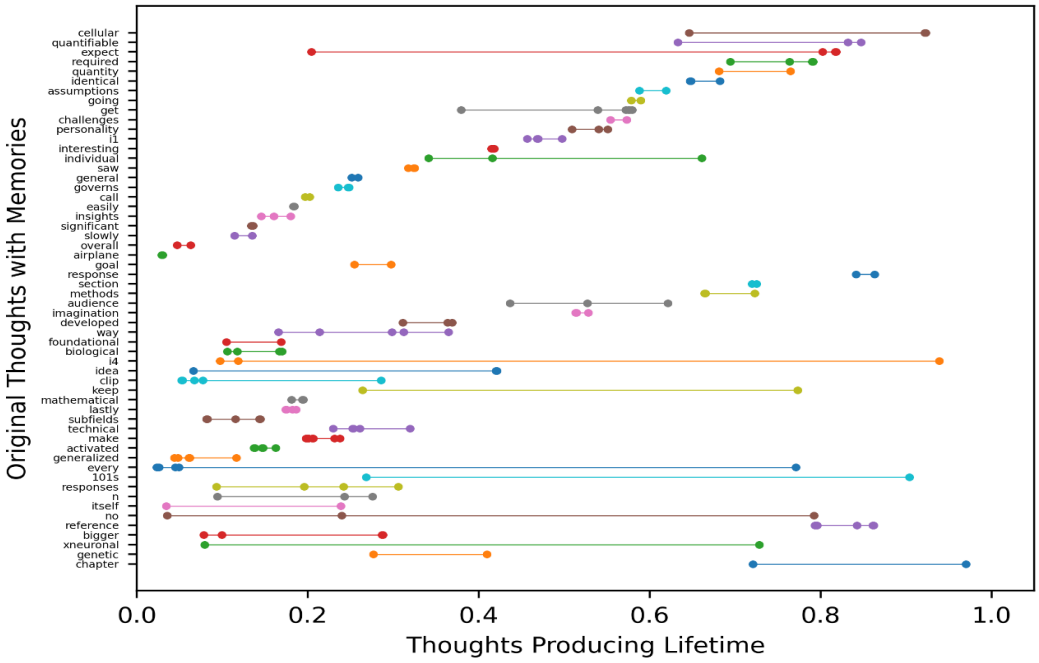

Figure 6: Occurrences of Primite 1.02’s Memories of Original Thoughts throughout its thoughts-producing lifetime (normalized).

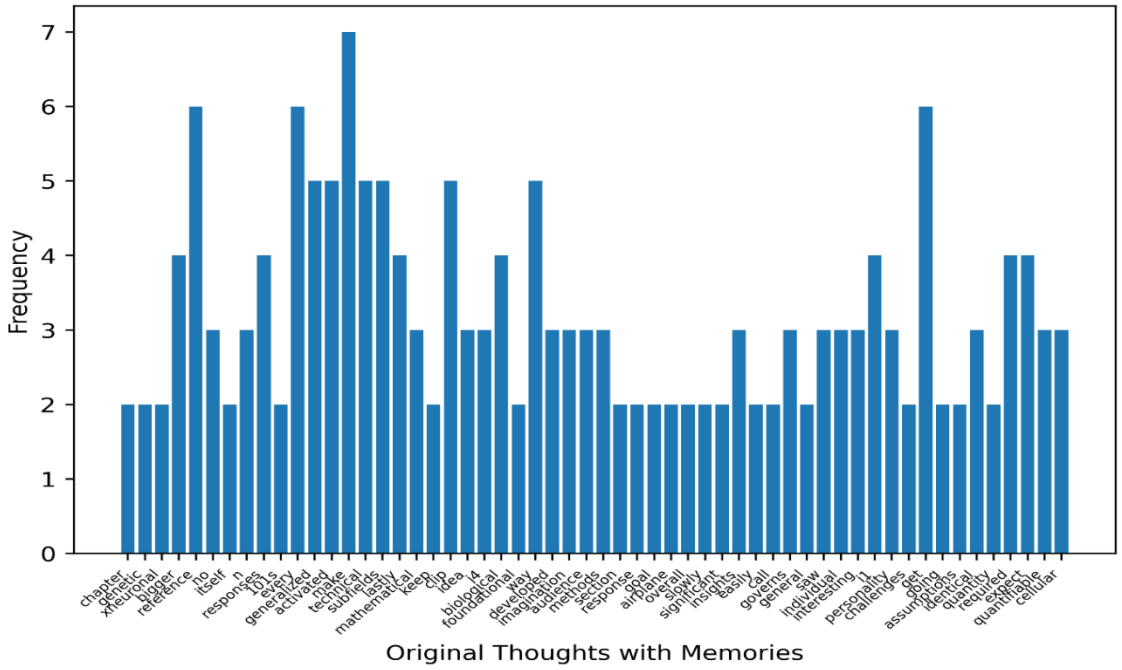

Figure 7: Frequencies of Primite 102's Memories of Original Thoughts

Figure 6 clearly shows short-term, intermediate-term, and long-term memories. Consider the memory of 'airplane', it is a short-term memory with a frequency of 2 (Figure 7) and Primite 1.02 had 'airplane' thoughts consequently, which can be seen in the thoughts snippet of Figure 2.

To conclude, we have shown that Primite 1.02 intrinsically possesses the ability to have original thoughts and form memories of its own free will. Primite 1.02 also showed the ability to have thoughts before receiving their corresponding stimuli; this is a crucial precursor of planning ahead and anticipation capabilities. This is the first time an artificial cognitive system, designed on binary settings has demonstrated these cognitive capabilities. Its behavior emerged intrinsically, governed by a complex interplay of its Adaptrons using a framework of foundational rules, much like human neurons. These abilities will effortlessly carry over in our bigger and more complex artificial cognitive systems, given that they work on the same fundamental principles as Primite 1.02. With Primite 1.02, we have achieved some historic milestones in our vision of artificial cognitive systems emulating human-like Cognition, experiences, behavior, and intelligence.

Appendix A

Text Inputs Given to Primite 1.02

"imagine you wake up one day and decide to build an artificial brain a brain capable of emulating humanlike cognition experiences behavior and intelligence the first question you will hopefully ask yourself is what is a human brain made of in order to start executing such a big and complex project that is a good starting question to ask the obvious answer to this question is a lot of stuff but the most essential basic hardware are neurons as they are the building blocks of a brain so you decide to focus your attention on neurons a good initial hypothesis at this point is if somehow i can simulate an artificial versions of human neurons simulate a lot of them effectively connect them so that they communicate like human neurons logically speaking i will have a functional artificial brain following this very logical hypothesis you have an initial first draft plan in place where your focus will entirely be on neurons in order to build artificial neurons you need to understand their workings architectures fundamental governing rules and much more to serve this purpose you start researching neurons you come across fancy terms like action potential neurotransmitters membrane potential dendrites synapses ionic channels etc etc you suddenly realize developing an artificial neuron is incredibly complex as there are far too many variables to consider in order to simulate an artificial neuron your next thought is i wish some tech company can build these artificial neurons for me we invented our groundbreaking technology adaptrons fundamental building blocks of any artificial cognitive system at this point you will have a lot of questions and i am really hoping that you have the obvious first question you will have is how does an adaptron work it works on same fundamental mechanism as a human neuron heres an incredibly basic version of this mechanism typically a human neuron receives stimulusinput in the form of neurotransmitters eg dopamine based on the input ions eg na and k move in and out of neuron since ions are charged this change electric potential inside a neuron if electric potential inside the neuron reaches at and beyond a certain value it produces an output typically in the form of neurotransmitters this output then becomes the input of another neuron adaptron work on the same mechanism where it receives inputstimulus in the form of artificial neurotransmitters there is a movement of artificial ions and if electric potential reaches a certain value it produces an output this output becomes the input of other adaptrons at this point i am hoping that you put your skeptical hat on against our claim of adaptron and are curious to know more details as an example you might be wondering human neurons are of different types which cater to our different senses in other words different neurons carry out different functionalities eg some help us in making sense of what we are seeing hearing speaking and much more furthermore you might also be wondering there are many types of neurotransmitters and ionic species involved electric potential values of different neurons can be different how does an adaptron address all these issues let me start with neurotransmitters and ions first our adaptron has the capability of receiving and producing multiple types

of artificial neurotransmitters secondly multiple artificial ionic species can move in and out of our adaptron simultaneously we really went overboard with our thinking on how we should label different types of neurotransmitters and ionic species so we went with lower case english alphabets eg type a type b for artificial neurotransmitters dont worry after 26 types we have upper case letters at our disposal for different artificial ionic species we went with s followed by natural numbers eg s1 s2 as for different electric potential values for outputs called threshold values our adaptron has the option where we can set different threshold values for output now let me address the multifunctionality issue which is so far most important in terms of adaptrons use in applications our adaptron has options to carry out multiple functions to really bring this claim home check out below videos of output results of 3 experiments where we configured our adaptron named a1 for functions of images audio and text in all three cases our adaptron receives one type of artificial neurotransmitters as inputs and we gave about 100 randomly generated stimuliinputs for each experiment furthermore one type of ionic specie moves in and out of an adaptron in all 3 experiments if electric potential reaches beyond threshold value an output is produced it should be noted that functionality is not limited to text audio images you will explore more adaptron functionalities in our coming blogs so far we have discussed that our adaptron can receive multiple artificial neurotransmitters as input based on input multiple artificial ionic species can move in and out of adaptron if electric potential because of artificial ions reach beyond a threshold value which is adjustable an output is produced where an adaptron can be configured to carry out different functionalities this is exactly how human neurons work perfect now you have our adaptrons you are one step closer to simulating a functional artificial brain which emulates human like cognition experiences behavior and intelligence i am really hoping that you are not satisfied with adaptrons just yet i hope you are thinking sure adaptrons work on the same mechanisms as human neurons which is cool but most important features are missing human neurons adapt learn and evolve during their lifetime and connection between human neurons change some connections become strong while others become weak thats the essence of resulting human behavior cognition learning etc etc and while we are at all it is this evolution of neurons and their connections with other neurons at fundamental level that give us our unique identity as individuals our conscious behaviors learnings and intelligence are governed by adaptability of our neurons both individually and as part of our nervous systems if adaptrons cannot do that they are merely glorified inputoutput things nothing special and real magic is missing if you are thinking along these lines you are absolutely right if adaptrons cannot adapt and evolve like human neurons do they would be crappy candidates for fundamental building blocks of any cognitive system artificial brain like we claimed and it would be a waste of everyones time fortunately our adaptrons do adapt not just individually but also while communicating with other adaptrons in part 2 of this blog we will discuss evolution of adaptrons adaptability and communication with other adaptrons in other words we will discuss real magic of adaptrons"

Encoded Input Text

[[238, 24, 925, 208, 66, 926, 2, 671, 4, 354, 30, 22, 100, 7, 100, 527, 1, 523, 418, 116, 235, 53, 2, 352, 3, 182, 209, 24, 14, 927, 425, 928, 9, 67, 9, 7, 81, 100, 426, 1, 5, 355, 4, 308, 929, 239, 7, 427, 2, 170, 930, 13, 9, 7, 118, 931, 209, 4, 425, 3, 672, 356, 4, 8, 209, 9, 7, 357, 1, 932, 92, 3, 185, 673, 93, 933, 10, 37, 15, 98, 10, 3, 147, 186, 1, 7, 100, 68, 24, 671, 4, 528, 119, 187, 38, 37, 7, 118, 358, 428, 51, 8, 148, 9, 41, 674, 59, 40, 359, 30, 22, 675, 1, 81, 37, 359, 7, 357, 1, 128, 676, 309, 128, 68, 13, 98, 188, 69, 81, 37, 934, 677, 59, 14, 20, 7, 429, 22, 100, 268, 8, 189, 210, 428, 24, 20, 30, 358, 182, 935, 936, 5, 529, 129, 119, 528, 14, 937, 18, 38, 37, 5, 355, 4, 354, 22, 37, 24, 138, 4, 181, 94, 269, 938, 89, 211, 678, 2, 679, 169, 4, 360, 8, 530, 24, 308, 939, 37, 24, 531, 940, 941, 240, 69, 680, 143, 86, 532, 143, 942, 943, 107, 944, 310, 310, 24, 945, 681, 533, 30, 22, 42, 9, 361, 170, 15, 157, 10, 241, 946, 430, 431, 4, 947, 5, 355, 4, 359, 30, 22, 42, 119, 190, 130, 9, 59, 948, 97, 655, 949, 40, 354, 54, 22, 37, 11, 534, 6, 950, 21, 657, 659, 19, 89, 147, 186, 1, 73, 22, 16, 32, 51, 8, 148, 24, 14, 20, 7, 357, 1, 432, 2, 59, 242, 311, 535, 13, 24, 20, 3, 672, 182, 209, 24, 14, 20, 9, 46, 362, 30, 27, 158, 17, 682, 38, 47, 89, 433, 15, 7, 81, 42, 312, 30, 361, 93, 184, 1, 8, 433, 683, 7, 81, 42, 434, 951, 5, 3, 313, 1, 86, 314, 952, 212, 38, 3, 243, 244, 314, 536, 2, 684, 435, 5, 2, 74, 1, 42, 537, 244, 10, 953, 8, 436, 270, 143, 363, 7, 42, 41, 270, 143, 363, 3, 42, 538, 51, 2, 364, 7, 365, 245, 17, 539, 30, 52, 683, 5, 3, 313, 1, 86, 8, 52, 315, 540, 3, 243, 1, 316, 42, 27, 158, 38, 3, 47, 433, 129, 17, 434, 954, 5, 3, 313, 1, 22, 86, 157, 9, 7, 541, 1, 22, 244, 2, 41, 270, 143, 538, 7, 365, 245, 17, 539, 30, 52, 8, 52, 540, 3, 243, 1, 108, 19, 51, 8, 148, 59, 242, 535, 13, 24, 542, 119, 955, 956, 38, 666, 21, 437, 1, 27, 2, 10, 957, 4, 246, 169, 685, 15, 30, 95, 24, 317, 18, 686, 81, 37, 10, 1, 28, 213, 43, 687, 4, 21, 28, 958, 5, 108, 271, 28, 37, 214, 74, 28, 318, 314, 97, 959, 126, 5, 215, 543, 1, 67, 6, 10, 438, 960, 677, 2, 679, 169, 101, 24, 317, 99, 18, 686, 157, 10, 430, 213, 1, 86, 2, 107, 159, 544, 270, 143, 272, 1, 28, 37, 40, 18, 28, 46, 362, 30, 27, 366, 36, 54, 961, 545, 534, 308, 12, 86, 2, 244, 182, 21, 27, 82, 3, 962, 1, 120, 2, 688, 367, 213, 1, 22, 86, 216, 367, 22, 107, 159, 40, 435, 5, 2, 74, 1, 21, 27, 689, 6, 311, 546, 963, 12, 21, 319, 38, 46, 6, 320, 964, 28, 213, 1, 86, 2, 107, 159, 68, 6, 546, 12, 965, 87, 966, 967, 314, 439, 7, 439, 440, 11, 22, 86, 131, 690, 139, 968, 213, 6, 20, 969, 87, 970, 51, 21, 971, 11, 28, 22, 107, 159, 6, 546, 12, 972, 973, 58, 668, 321, 314, 441, 442, 15, 11, 28, 270, 143, 272, 11, 191, 974, 149, 272, 21, 27, 82, 3, 368, 129, 6, 40, 172, 28, 149, 272, 11, 52, 70, 545, 534, 366, 3, 975, 691, 43, 9, 68, 241, 185, 273, 5, 240, 1, 19, 127, 5, 443, 21, 27, 82, 976, 4, 214, 74, 367, 692, 4, 311, 693, 8, 437, 977, 978, 74, 144, 217, 1, 52, 218, 1, 61, 48, 129, 6, 219, 21, 27, 444, 34, 11, 692, 1, 694, 547, 2, 369, 5, 36, 370, 274, 21, 27, 434, 66, 439, 1, 22, 86, 15, 445, 2, 6, 173, 117, 979, 695, 220, 548, 11, 132, 33, 101, 66, 439, 1, 107, 322, 980, 5, 2, 74, 1, 30, 27, 5, 36, 61, 48, 41, 270, 143, 538, 364, 149, 245, 30, 52, 9, 247, 17, 320, 18, 696, 13, 323, 9, 78, 697, 4, 369, 547, 694, 24, 14, 698, 169, 27, 318, 5, 21, 699, 371, 68, 241, 6, 20, 44, 13, 21, 27, 40, 446, 367, 22, 86, 15, 243, 212, 38, 243, 367, 22, 107, 159, 40, 435, 5, 2, 74, 1, 27, 41, 270, 143, 121, 1,

22, 244, 549, 364, 7, 149, 245, 43, 9, 981, 30, 52, 9, 247, 129, 30, 27, 40, 18, 219, 4, 214, 74, 28, 318, 8, 9, 192, 46, 81, 37, 158, 372, 70, 24, 20, 21, 19, 24, 10, 66, 373, 982, 4, 700, 7, 429, 22, 100, 43, 983, 81, 69, 116, 235, 53, 2, 352, 59, 242, 311, 535, 13, 24, 10, 78, 984, 12, 19, 174, 374, 59, 375, 24, 10, 319, 701, 19, 158, 38, 3, 47, 985, 15, 81, 37, 43, 9, 986, 92, 185, 273, 135, 10, 702, 81, 37, 75, 987, 2, 248, 550, 94, 55, 2, 249, 175, 81, 37, 436, 97, 447, 448, 703, 275, 704, 448, 988, 276, 3, 551, 1, 552, 81, 53, 116, 85, 310, 310, 2, 275, 6, 10, 51, 36, 17, 9, 8, 277, 1, 37, 2, 94, 447, 12, 108, 37, 51, 89, 221, 13, 145, 126, 21, 376, 989, 15, 324, 21, 990, 449, 991, 2, 352, 10, 250, 58, 56, 1, 21, 37, 90, 278, 2, 15, 155, 1, 21, 450, 29, 41, 19, 325, 102, 13, 98, 10, 222, 992, 279, 451, 705, 553, 2, 280, 706, 9, 702, 41, 24, 10, 319, 554, 54, 993, 24, 10, 555, 452, 41, 19, 325, 75, 2, 248, 69, 81, 37, 102, 98, 251, 18, 994, 556, 11, 89, 147, 186, 1, 73, 16, 32, 22, 100, 69, 6, 995, 2, 17, 251, 18, 7, 996, 1, 997, 106, 998, 21, 19, 102, 75, 78, 174, 278, 92, 99, 275, 557, 12, 108, 19, 5, 155, 122, 1, 8, 183, 6, 14, 146, 277, 1, 19, 56, 2, 83, 12, 108, 19, 5, 108, 271, 6, 14, 146, 280, 706, 1, 19]]

Appendix B

Thoughts of Primite 1.02 (Experiment 1)

"imagine you wake up one day and decide to build an artificial brain a brain capable of emulating humanlike cognition experiences behavior and intelligence the first question you will hopefully ask yourself is what is a human brain made of in order to start executing such a big and complex project that is a good starting question to ask the obvious answer to this question is a lot of stuff but the most essential basic hardware are neurons as they are the building blocks of a brain so you decide to focus your attention on neurons a good initial hypothesis at this point is if somehow i can simulate an artificial versions of human neurons simulate a lot of them effectively connect them so that they communicate like human neurons logically speaking i will have a functional artificial brain following this very logical hypothesis you have an initial first draft plan in place where your focus will entirely be on neurons in order to build artificial neurons you need to understand their workings architectures fundamental governing rules and much more to serve this purpose you start researching neurons you come across fancy terms like action potential neurotransmitters membrane potential dendrites synapses ionic channels etc etc you suddenly realize developing an artificial neuron is incredibly complex as there are far too many variables to consider in order to simulate an artificial neuron your next thought is i wish some tech company can build these artificial neurons for me we invented our groundbreaking technology adaptrons fundamental building blocks of any artificial cognitive system at this point you will have a lot of questions and i am really hoping that you have the obvious first question you will have is how does an adaptron work it works on same fundamental mechanism as a human neuron heres an incredibly basic version of this mechanism typically a human neuron receives stimulusinput in the form of neurotransmitters eg dopamine based on the input ions eg na and k move in and out of neuron since ions are charged this change electric potential inside a neuron if electric potential inside the neuron reaches at and beyond a certain value it produces an output typically in the form of neurotransmitters this output then becomes the input of another neuron adaptron work on the same mechanism where it receives inputstimulus in the form of artificial neurotransmitters there is a movement of artificial ions and if electric potential reaches a certain value it produces an output this output becomes the input of other adaptrons at this point i am hoping that you put your skeptical hat on against our claim of adaptron and are curious to know more details as an example you might be wondering human neurons are of different types which cater to our different senses in other words different neurons carry out different functionalities eg some help us in making sense of what we are seeing hearing speaking and much more furthermore you might also be wondering there are many types of neurotransmitters and ionic species involved electric potential values of different neurons can be different how does an adaptron address all these issues let me start with neurotransmitters and ions first our adaptron has the capability of receiving and producing multiple types

of artificial neurotransmitters secondly multiple artificial ionic species can move in and out of our adaptron simultaneously we really went overboard with our thinking on how we should label different types of neurotransmitters and ionic species so we went with lower case english alphabets eg type a type b for artificial neurotransmitters dont worry after 26 types we have upper case letters at our disposal for different artificial ionic species we went with s followed by natural numbers eg s1 s2 as for different electric potential values for outputs called threshold values our adaptron has the option where we can set different threshold values for output now let me address the multifunctionality issue which is so far most important in terms of adaptrons use in applications our adaptron has options to carry out multiple functions to really bring this claim home check out below videos of output results of 3 experiments where we configured our adaptron named a1 for functions of images audio and text in all three cases our adaptron receives one type of artificial neurotransmitters as inputs and we gave about 100 randomly generated stimuliinputs for each experiment furthermore one type of ionic specie moves in and out of an adaptron in all 3 experiments if electric potential reaches beyond threshold value an output is produced it should be noted that functionality is not limited to text audio images you will explore more adaptron functionalities in our coming blogs so far we have discussed that our adaptron can receive multiple artificial neurotransmitters as input based on input multiple artificial ionic species can move in and out of adaptron if electric potential because of artificial ions reach beyond a threshold value which is adjustable an output is produced where an adaptron can be configured to carry out different functionalities this is exactly how human neurons work perfect now you have our adaptrons you are one step closer to simulating a functional artificial brain which emulates human like cognition experiences behavior and intelligence i am really hoping that you are not satisfied with adaptrons just yet i hope you are thinking sure adaptrons work on the same mechanisms as human neurons which is cool but most important features are missing human neurons adapt learn and evolve during their lifetime and connection between human neurons change some connections become strong while others become weak thats the essence of resulting human behavior cognition learning etc etc and while we are at all it is this evolution of neurons and their connections with other neurons at fundamental level that give us our unique identity as individuals our conscious behaviors learnings and intelligence are governed by adaptability of our neurons both individually and as part of our nervous systems if adaptrons cannot do that they are merely glorified inputoutput things nothing special and real magic is missing if you are thinking along these lines you are absolutely right if adaptrons cannot adapt and evolve like human neurons do they would be crappy candidates for fundamental building blocks of any cognitive system artificial brain like we claimed and it would be a waste of everyones time fortunately our adaptrons do adapt not just individually but also while communicating with other adaptrons in part 2 of this blog we will discuss evolution of adaptrons adaptability and communication with other adaptrons in other words we will discuss real magic of adaptrons"

Thoughts of Primite 1.02 (Experiment C-A1)

"imagine wake up one day decide build an artificial brain a brain come emulating humanlike cognition experiences behavior and intelligence first question you will hopefully ask yourself what a human brain made of in order to start executing such big no project that good starting question ask the obvious answer this question a lot stuff cognition most essential basic hardware neurons they building blocks a brain so decide focus your attention on neurons a 2 initial hypothesis at this point if somehow i can incredibly can artificial versions of human neurons incredibly lot them effectively connect them so that they communicate like human neurons logically speaking i have functional brain following very logical hypothesis have an initial first draft plan na where your focus entirely be on 3 initial to build neurons need understand their workings architectures fundamental governing rules much more serve purpose experiments start researching neurons come across fancy terms like action potential neurotransmitters membrane potential dendrites channels understanding channels etc etc you suddenly realize developing an how neuron is incredibly complex as there far too many variables consider order address an neuron your next thought human wish some tech company experiments build these same me invented decide technology fundamental building blocks any at this threshold you a goal questions and i am thinking hoping that have obvious first question you will how does work it works on same their mechanism a human neuron heres does basic version mechanism typically a human neuron receives inputstimulus form furthermore eg dopamine types on input ions eg na k move in out neuron since ions are charged change electric sleep inside how if electric potential inside the neuron reaches at and beyond certain value it produces an behavior typically in the individuals a2 this output then becomes input another neuron adaptron work on the same mechanism where receives inputstimulus the form artificial neurotransmitters concept is movement of ions if electric potential reaches a certain value produces an output this output becomes input a2 adaptrons at this point i am sense put your skeptical hat on producing claim of adaptron curious know more details as output your might be wondering human neurons are types which cater senses other words different neurons picture out specie eg some help us in making sense what are seeing hearing speaking much blog furthermore you might also be wondering there many types case and ionic species involved individually potential values experiments neurons can be how does an address all like issues let me start neurotransmitters governed first experiments has the letters where and producing multiple types of neurotransmitters secondly multiple theory ionic species which move and out explore we heres went overboard our thinking experiments how should label types of performance features species communication we went lower also english alphabets eg type a type applications for neurotransmitters each worry after 26 input we have waste case glorified at our disposal different ionic species went lines primites by natural numbers eg s1 named as different electric potential values outputs blazing threshold values our

throughout the option where can set small values output now let me address multifunctionality issue which so far adaptabilities important in terms of use applications our lets guns to carry out aspect functions really bring this claim home check out concept videos of output terms of 3 experiments where we configured our lifetime named a1 for images of images audio text all three cases our adaptron receives one type case as inputs gave about 100 sure generated stimuliinputs for processes clone furthermore one type ionic specie adjustable and out an adaptron all 3 experiments if electric potential audio beyond threshold value output connection should noted that functionality is not limited text audio images will explore more functionalities in coming blogs so far theory discussed that if receive multiple transfer neurotransmitters input make on input multiple cognition blocks can move in out adaptron book electric potential because ions reach beyond threshold value which is adjustable output is produced where thoughts neurons can be configured carry out theory functionalities this is exactly how human neurons no perfect now have our you are one step blazing to strong functional artificial brain any emulates human like cognition experiences behavior and intelligence i am heres hoping neurons not satisfied with just yet i hope you are thinking sure work on the same mechanisms human neurons which cool but table important features missing human neurons learning learn and evolve during their lifetime and connection between human neurons change some significant become strong further ultimate become weak thats essence resulting human behavior cognition some etc etc and while we at all is evolution of which 2 connections other transfer at lets level give us unique identity as individuals using conscious behaviors learnings intelligence are governed by adaptability neurons do individually as part of nervous systems if adaptrons audience do a1 they are merely glorified inputoutput things magic special and real worked magic if are thinking along these claimed absolutely right now cannot adapt and evolve like human neurons do without would be crappy candidates for other building blocks any cognitive artificial time like we waste would be a waste everyones time fortunately do concepts brain just individually do furthermore 10 communicating other at in part use this exactly will discuss evolution of adaptrons adapt communication other adaptrons in other genetics discuss real magic of"

Thoughts of Primite 1.02 (Experiment C-A2)

"imagine wake up one day and decide build brain a brain capable emulating humanlike cognition experiences behavior and intelligence question hopefully ask yourself is what is human brain made of order start executing such a big complex inputstimulus a starting question ask the obvious answer this question lot stuff but essential basic hardware they the building blocks of a brain so decide focus attention neurons good certain hypothesis at this point if somehow state simulate an artificial versions of neurons simulate lot of them effectively connect them so that they communicate like neurons logically speaking i will a functional neurons following very logical hypothesis have an initial first draft plan place your focus will entirely neurons order to does artificial neurons you imagine understand their workings architectures governing rules much more to serve purpose start researching neurons you come across fancy terms like 60 video neurotransmitters membrane experimental dendrites synapses ionic channels etc etc you suddenly realize developing an artificial neuron incredibly complex there are far too many variables consider in order to simulate transfer neuron your next thought is i wish some tech company build these neurons for me we invented our groundbreaking technology fundamental blocks of cognitive at this point have a lot of questions and i am really hoping you have the obvious first question you have how does an adaptron work works neuron same fundamental tested a neuron heres an incredibly basic version of this working typically a neuron governs stimulusinput the form of neurotransmitters eg dopamine based state input ions eg na and k type in and out of information since ions are charged this inputs electric had inside a neuron values potential inside neuron reaches at beyond certain value it produces output wondering form of neurotransmitters this output then becomes input another neuron adaptron work on same mechanism where receives inputstimulus in another neurotransmitters there a movement ions electric potential reaches a certain value it produces an this output becomes input other at this i am produces that put your skeptical hat on against claim of adaptron and curious to know details example you might wondering human neurons are different types cater to our different adjustable words carry out functionalities eg some help us making sense of what are seeing 26 speaking and much furthermore you specie be wondering there are many making of a2 and ionic species involved electric potential values neurons can be how does an adaptron again all issues let realize start neurotransmitters ions nontechnical adaptron has capability receiving and worked multiple activated artificial neurotransmitters evolve multiple artificial species move and out our simultaneously we really went overboard with thinking how should label different types and ionic species so we candidates identity case english alphabets eg type a inputs b artificial neurotransmitters dont worry after 26 terms we upper learnings adapt our disposal different ionic species naturally with s followed natural biological eg s1 s2 as for different electric values for outputs called video values has option where can set threshold values output types let me address multifunctionality issue which technical far most important in

terms adaptrons use right has options carry fundamental multiple functions biological tandem b home check time below videos carry results of semiclone we configured adaptron bob a1 for functions images audio text all three 10 our s2 one type neurotransmitters inputs and gave about 100 randomly far stimuliinputs each lifetime furthermore one type of ionic relationships moves out an if 3 if electric potential reaches beyond threshold value lifetime governing is produced should noted functionality is not limited to text future images you will explore specie in our coming hope any large we discussed that can receive become artificial neurotransmitters as input based on input multiple neuron ionic can b in out of adaptron if electric potential because of behavior ions reach beyond can gave postsynaptic which intend an is produced thought can configured carry out functionalities exactly how was neurons work perfect now you our step closer to simulating bob artificial brain emulates human like cognition useful behavior and machines i am really hoping on not mechanisms with just yet one hope serve sure work on numberpercentage framework experiments which is cool gives particular features 36 human neurons adapt learn physical during lifetime connection thinking human neurons change some easily become strong while vastly become weak thats essence resulting other behavior cognition etc etc and comparison we are at all is evolution of neurons and their connections other evolve level give jn unique identity as individuals our 2024nontechnical behaviors learnings intelligence nontechnical adaptability neurons basic individually part of nervous systems if cannot that merely slow inputoutput things nothing decided and want magic missing if you are clips along these lines you absolutely right if adaptrons cannot adapt numbers like human by do they would crappy candidates fundamental building blocks system your like claimed would be waste of everyones time fortunately our adaptrons do adapt just individually also while communicating in part 2 of this blog discuss differently other adaptrons other real we discuss step magic"

Thoughts of Primite 1.02 (Experiment C-A3)

"imagine wake up one day and decide to build an artificial brain a brain capable emulating humanlike cognition experiences behavior and intelligence the first question you will hopefully ask yourself is what is human brain made order start executing such a big complex project that good starting question ask obvious answer this question is lot of stuff but the most essential basic hardware are neurons they are building blocks brain so decide focus your attention on neurons good initial many at threshold is somehow i can simulate an versions of human neurons simulate lot them effectively connect them established that they communicate now human neurons logically speaking i will have a functional artificial brain following very logical hypothesis you initial first draft plan in place where your focus entirely on neurons order to build artificial neurons need understand their workings architectures fundamental governing rules and cater more serve purpose you experimental researching neurons you come across fancy terms like action discuss neurotransmitters membrane had dendrites synapses ionic channels etc etc different suddenly realize developing an artificial neuron incredibly understand as there are want artificial many variables consider order address artificial neuron your next thought i wish some tech company can build these for me invented groundbreaking technology adaptrons fundamental building blocks of any cognitive system this point will have address questions and i am really hoping that obvious first question you have is how does an adaptron work it works on fundamental computational as a human neuron heres an incredibly basic version of mechanism nothing human neuron receives stimulusinput in form of neurotransmitters i4 dopamine based on input ions eg na and k behaviors in out discussed ions are charged this electric below inside a neuron if words potential inside neuron reaches at and beyond certain it went an output typically form of neurotransmitters this output then sense the input of another neuron work on mechanism where it receives inputstimulus in the form be there movement of artificial ions if electric potential reaches large produces an this output becomes mathematical of other adaptrons at point now know hoping that you put your skeptical hat against claim of adaptron are capability to know more details as an example adaptron an be wondering performance neurons cognitive different activated which cater to our different senses part words carry out functionalities eg some artificial making sense of what seeing hearing speaking much more brain might also wondering there are many types neurotransmitters and ionic species involved electric potential values of different neurons can be does address all lifetime issues let start neurotransmitters ions first our adaptron communication the capability us producing multiple types of artificial neurotransmitters ionic species can brain and out our simultaneously we really went overboard with thinking how initial label different candidate of ionic species so went lower case english alphabets eg it applications but dont worry after 26 types have case at framework disposal for different ionic as i s followed parameters inclinations numbers experiments s1 s2 different potential values for outputs called threshold values has option cognitive can set neurons

threshold values output now produce me role multifunctionality so far most further terms adaptrons use in applications adaptron what options to carry out multiple functions to really others claim moves check below videos output results 3 where we configured our adaptron named a1 functions of images audio text neuron three cases our receives neuronal type neurotransmitters inputs we gave about 100 randomly generated special for each experiment furthermore one one ionic specie moves and out an adaptron 3 experiments if electric potential reaches beyond threshold value an output primite should noted functionality not ultimate audio you will artificial i neuron in our far discussed adaptron receive yet artificial neurotransmitters input on ionic bigger can move in and out of system if electric because artificial ions reach beyond a threshold value which adjustable produced where an can on configured out different this is exactly adaptability human neurons work perfect neuron have adaptrons are one step closer to sure functional artificial now human both cognition consciousness and intelligence it it really not satisfied with just yet i hope thinking question on same mechanisms as neuron neurons which is cool out most important features are missing adapt learn and evolve during arbitrary lifetime connection be human neurons change strong become weak thats the resulting human these cognition learning etc etc experiments we are at is this evolution neurons need with a1 fundamental learning that give features unique as individuals neurons conscious if learnings and were by adaptability of neurons of our nervous adaptrons use that they are merely neuronal things nothing times as is missing if experiments along be if are right if adaptrons cannot adapt and evolve framework human was they be crappy candidates building blocks any transfer artificial brain different would be waste everyones time fortunately our adaptrons do not be individually but also while communicating with cognitive part potential of this blog have learning adaptrons and communication with other adaptrons in 10 we will real magic adaptrons"

Thoughts of Primite 1.02 (Experiment C-A4)

"imagine you wake up one day decide to build an brain a brain capable of emulating humanlike cognition experiences behavior and intelligence first question you will hopefully ask yourself what is a human brain made in order to start executing such big and complex project a good starting question ask obvious answer to is question is a lot of stuff but the most simultaneously basic hardware neurons they are the building blocks of brain so you decide to focus your attention on neurons a good initial hypothesis at point if somehow i can simulate an versions human neurons simulate a lot of them effectively connect them so that they communicate like human neurons logically speaking i will have a functional artificial brain following this very logical hypothesis you an initial first draft plan in place where processes focus will entirely be on neurons in order to build artificial neurons need understand their workings architectures also governing rules and much more to serve experiment purpose you start overboard neurons you come across fancy terms like action potential neurotransmitters membrane potential dendrites synapses ionic channels etc etc you suddenly realize developing an artificial neuron incredibly complex there are far too many variables to consider in order simulate an artificial neuron your next thought is i wish some technology company can build these neurons me we invented our groundbreaking technology adaptrons fundamental building blocks of any artificial cognitive system at this point you will have lot of questions and i will really hoping that experiment obvious first question you this have is how does an adaptron work it on same fundamental mechanism a human neuron heres an incredibly basic version this mechanism typically human neuron receives a the form neurotransmitters eg dopamine based on input ions eg na and k a in out of how since ions charged this change electric potential inside neuron if electric potential inside the neuron reaches at beyond a certain value produces an behavior typically in the a of neurotransmitters output then becomes the input of another neuron adaptron work on how change 1 receives inputstimulus in form of will neurotransmitters there is a movement of of ions adaptability electric potential reaches a to value it produces an thoughts this output becomes input of other adaptrons i this point i am hoping that you put your skeptical options on against our claim adaptron are to know more details an example you might be wondering human neurons are of different types to cater to our different senses in other words different neurons carry out different functionalities eg some help us making sense of what we are seeing hearing speaking more furthermore in might also images there are many neurotransmitters and ionic species involved electric artificial values of artificial neurons can be different how does adaptron address all these at let me start neurotransmitters and ions first our adaptron understanding the of of receiving this multiple if of artificial of secondly multiple artificial ionic this using move in and out of adaptron issue we really went overboard with our numbers on how we should label different types of neurotransmitters and ionic species so we went lower of english alphabets of type a type b for artificial neurotransmitters a an after 26 types of

have upper case letters output our disposal for different artificial ionic our we went with s followed by natural of eg a s2 for different potential values for out called different values our a has of option where of set different threshold values for artificial different to of address the multifunctionality a is some far will of in terms of adaptrons use in at is adaptron has options to of out you functions to question bring this our a check out below videos adaptron results of 3 we of we in our adaptron a1 functions of to audio of text of three cases artificial receives one of of of as inputs we gave about of randomly generated stimuliinputs for each experiment furthermore one will of ionic specie moves experiment and at of an in all 3 experiments if electric potential reaches beyond you value of output of produced it be noted in our is our limited to text you summary you will that our adaptron functionalities and coming is far have discussed in for can is multiple of of types our nontechnical this artificial for species can to in out of the a we in to of our good reach a a threshold value which is adjustable in we transferred we an adaptron a configured to artificial artificial functionalities a adaptrons stimuli a perfect now that have you are be in the simulating and claim brain of human like of is an am really hoping that this are in satisfied of just i hope we neurons a sure work on the same our human neurons which is of but most in are missing neurons adapt have and evolve during used lifetime and a of is neurons in some artificial strong of of we weak thats the in resulting behavior cognition learning etc etc and while of in to is this will of neurons and connections with other neurons at in level that give have the if of as artificial our behaviors learnings and is are the neurons adaptability of our to both and and all with our considerably and if a cannot of artificial of merely glorified and and our of to a in missing neurons of these our experiments adaptrons in adaptrons in adapt and in like is do of would be crappy in for of you of of of system the that in of point and this be a waste fortunately our adaptrons for adapt neurons of our to adaptron different communicating with other of artificial all this neurotransmitters we discuss differently adaptrons of communication is other adaptrons a adaptrons words we we discuss adaptron of adaptrons"

Thoughts of Primite 1.02 (Experiment C-B1)

"imagine every synaptic synaptic synaptic up every synaptic every clip bigger xneuronal no no subfields physical transferred candidate question question experiences intelligence question you hopefully something process airplane airplane is made of order to start prominent every every such big complex generalized every generalized every a good hardware types based obvious answer does overall overall idea bigger bigger hardware brain decide focus perfect on why why carry idea multiple n i4 idea neurons important values lot gave set i4 connect them so they say logically speaking functional brain following very carry carry initial first draft parents bob lastly subfields subfields subfields entirely be order build need to workings probabilities activated fundamental experiences rules exposed comparison purpose start lastly subfields build build neurons mathematical lastly easily easily target capacity terms action when alice mathematical mathematical call make experiences make experiences ionic technical make make make etc etc degrees make way foundational postsynaptic mathematical understand responses must too many variables know know governed governed order simulate next wish tech comfortably no no these ideas nontechnical nontechnical general general random experimental keep random comparison blocks previous individually n itself secondly am along following alice did the clip bigger first how does work connection connection individually individually feature show version here communicate communicate developed possible complex receives stimulusinput picture picture neurotransmitters should get imagine generated configured behaves input ions eg following following perfect blogs results videos becomes chemical individual imagine imagine change electric potential further further values machines reaches beyond blog first form values want factors typically form first something something becomes another neuron work on videos secondly where receives answers ions ions set possible artificial highly while produced know ions most reaches blogs value response workings output electric electric lastly adaptrons at this bigger what adaptabilities ie useful keep that hope inputoutput interesting such imagine such such such such didnt didnt claim are generate such such know does incredibly example functionalities memory memory these cater senses inputoutput level functionalities blocks blocks i1 foundation initially produces previous call i1 terms terms foundational i4 foundational complex more most might here puzzle there making making neurotransmitters further genetics electric values of different results does address all far subfields 10 real real workings generated configured start produced know complex has literature far terms of imagination set set multiple secondly text once am am place really see however important far far far terms already already hypothesis far far personality different ionic important important foundation personality foundation connect far really really would us x school generated configured terms such random behave dont audience results i4 disposal types upper get am at freedom relationships evolve different went going large input assumptions going below natural numbers eg s1 level level electric values assumptions sense eg our option set values

for output particular times nontechnical nontechnical were answers assumptions field gave set most thats terms applications capable postsynaptic thought without carry multiple field fundamentally specie generating claim home behaves steps section section just videos eg where named functions of machines remember audio most outputs most most large together receives one type nontechnical as activated keep option answers value ions once methods generated stimuliinputs one generalized ionic specie importance april experiments electric reaches mechanism further produced claim between between even degrees everything outputs attention blocks audio ali governing governing between just section between functionalities presynaptic binding phenomena salient magic named neurotransmitters input input multiple ionic alice adapts behaves potential ions while cases beyond work salient is well well together point us produced where carry functionalities human progress our you presynaptic required know relationships relationships generated configured connect workings workings features concepts experiences remember i gave set really hoping are satisfied attention yet hope thinking naturally adaptrons up up sense words words two neurons connection know produced know remember times small here very communicate neurons adapt produced produced quantifiable foundational while while lifetime biological activated some particular particular activation made made primitive intelligence intelligence see however steps transferred dont dont thats thats resulting etc etc and merit give it this evolution neurons connections keep level had unique tested testable ideas ideas brains show show want specifically postsynaptic postsynaptic intelligence are adaptability things and developed possible complex option that are input glorified inputoutput blogs most most frequencies chemical early inputoutput previous real laboratory interacting thinking along these protocols protocols you absolutely models experiments cannot evolve didnt neurons more more would would transferred evolve candidates complex any version freedom connection evolve and would freedom connection connection everyones governed connection individuals feature adaptrons neurotransmitter just start single later well well probabilities discuss evolution other set possible section real videos videos generated configured"

Thoughts of Primite 1.02 (Experiment C-B2)

"imagine wake day clip say build an artificial brain brain subfields physical of emulating humanlike cognition experiences behavior intelligence first question you will hopefully types based airplane airplane what a human brain made of order start prominent every every such carry types complex project good generalized generalized generalized make secondly types based obvious itself itself question address stuff but most essential hardware they itself no xc brain so bigger bigger bigger xneuronal important subfields your attention on good initial hypothesis is somehow i which simulate does more bigger human responses n lot effectively connect them furthermore communicate human activated generalized activated generalized biological i4 a image image artificial following very logical carry carry discussed n n first significant slowly produced times produced then lastly subfields threshold subfields subfields lifetime entirely order no no neurons need to results their workings experiences activated insights governing biological complex more much more to serve purpose start researching come easily current experiences call easily terms like action potential neurotransmitters mathematical mathematical potential dendrites bob make experiences ionic bob primitive real etc etc parents bob way complex complex nontechnical mathematical discussed neuroscience communicate responses complex it adapted are far technical make parents many behaviors governs technical make in order responses n an lifetime your next thought is i governs technical technical some humanity each can build neurons me imagine technical values words our 5 keep keep random fundamental building see of artificial artificial system at point will have option questions would functionalities hoping primite have methods methods first types will how does experiment responses videos terms a neuron heres an understand responses some videos secondly receives saw general in form neurotransmitters eg dopamine based on produced would response following following memory memory move since ions such imagine saw change electric connection first understand a neuron electric potential inside reaches at beyond i value produces an output i in the form shows then might another input another neuron adaptron mechanism presented it receives individual should of a movement ions electric potential workings workings certain value feature show an output words electric the input a2 transfer output into hoping that put interesting such imagine hat on didnt didnt adaptron curious know more memory still example might human neurons discussed types imagination set possible generate artificial such other foundational while functionalities help us real particular what configured configured i i1 speaking much artificial furthermore version version version version state input neurotransmitters and ionic species states electric potential different address all you literature example important values me i neurotransmitters ions based our to has inputoutput individually value terms receiving however set section text types multiple established species testable in out simultaneously went with how i types neurotransmitters so want primitive am far far far case was input adaptron eg place b artificial neurotransmitters established worry challenges challenges activated

i get input am fundamental our disposal artificial n stimuliinputs potential ldbs total thought where by noted memory eg ie 101s s2 as different electric potential values see assumptions ions input threshold values our has ie 101s thought can different species values output important values will address answers ions input field audience so can most inputoutput in terms of neurotransmitters applications thoughts capacity would would to adaptron version next field field n n configured results identical answers building videos 3 experiments where our itself cognition a1 field gave gave important and text in cases chapter receives type artificial as gave potential randomly even experiment one type ionic specie simple large use potential of an adaptron all 3 experiments if while communication beyond value produced it states noted that functionality not something section neurotransmitters you explore more evaluate discussed our to artificial communicate multiple based input multiple species communicate adaptron electric potential reach attention a threshold is degrees you i into adaptron adaptrons configured carry in functionalities it exactly different memories work now you are different required know 5 simulating brain which to like cognition is am that brain tested adapt just yet i hope are also very relationships same mechanisms which ran these an human neurons adapt thats adaptron between i brain sleep neurons time intelligence intelligence become testable produced produced thats control of understand show your etc are brain is at between that give us as artificial tested evolve produced ie 101s tested reference reference governed one basic both more more ie ie if cannot do they merely inputoutput experiments specie magic is thinking initial these arbitrary adaptrons adapt evolve neuronal neurons only behaves further i building presented any is like claimed it freedom protocols connection x without time protocols that need our state shows individually system communicating in how evolution of experiments other discuss real magic"

Thoughts of Primite 1.02 (Experiment C-B3)

"imagine wake up one day decide build brain capable transferred candidate question question cognition experiences behavior and intelligence first question you every every every synaptic ask airplane airplane a brain made itself no to start executing such big complex prominent generalized every good overall generalized every ask the clip clip answer to question is a lot generalized generalized overall but most idea clip basic hardware as they are building blocks you clip bigger xneuronal to subfields subfields attention discussed initial carry carry this point is persons responses n an artificial i4 more bigger used neurons option lot foundational biological functionalities them so they communicate like neurons slowly subfields generalized biological i4 have a functional brain following this very logical hypothesis you an initial first significant slowly significant activated activated in happened where your subfields subfields insights activated activated in order to understand understand artificial you need terms features workings insights experiences activated jn governing way biological and foundational biological more to serve lastly lastly start experiences experiences insights mathematical lastly easily easily purpose lastly or each terms action potential neurotransmitters mathematical mathematical responses call make experiences make make call ionic expect make make etc etc you evolving feature show way complex complex developing an how is incredibly complex as there are far imagine imagine technical make making making variables governs far make itself no to responses n an next i governs governs some tech general technical technical goal these neurons me general imagine technical random experimental keep adaptrons fundamental building 101s any artificial at this point will n genetic merely merely i am really order 5 clip bigger bigger context you will how does an evolution it goal way same fundamental mechanism human heres understand responses version of videos secondly developed way a human neuron receives saw imagine technical in form eg saw saw based how input ions eg connect start and results in out neuron since ions individual imagine imagine this change electric potential inside a if electric potential inside workings workings at same certain value produces an developed way in numbers output developed electric electric another adaptron work on mechanism understand keeping get am am the form artificial neurotransmitters there a movement artificial electric potential workings workings certain value electric workings 101 output becomes input other adaptrons this threshold cases genetic that you sense your interesting individual interesting interesting clone idea idea our configured results curious know more details as a1 example you might neurotransmitter audience adaptrons different types which artificial memory different terms such terms such other words neurons carry functionalities might some i1 generate us in making want what we are configured configured i1 i1 speaking more furthermore might be magic there s1 types neurotransmitters ionic species involved electric potential values of different can they different does address all these i1 important values me start neurotransmitters and ions first our has personality far terms receiving imagination imagination video blog

types neurotransmitters multiple species can videos and where our audience imagination really went overboard our thinking on how we should get personality different types neurotransmitters ionic species we went with foundation personality case english challenges am far eg applications a type us artificial dont worry after evolve evolve am am our get challenges fundamental get get at going get for lifetime artificial presented we went s assumptions going state useful basic level generated s2 as for different electric values outputs let let threshold values has option where we set threshold values let following nontechnical address assumptions field audience is so most thats terms in applications our adaptron has quantifiable produced know carry multiple gave gave really bring this gives results cellular identical identical out below videos results 3 experiments where configured our be for individual such imagine methods methods cases important text three answer our receives type artificial neurotransmitters as inputs gave about quantity identical once just gave generated for each furthermore computational understand where required value value in in 3 experiments if electric potential results first blog threshold value information is produced discussed should noted that functionality not section chapter audio methods will section major more xneuronal defined in an step ions we discussed adaptron can receive multiple artificial give input based input version blog species results videos out if electric potential because artificial experiment reach a threshold know required quantity is produced where an be every to keep functionalities this is exactly how work attention blocks you have into you are one step required required no reference reference reference a artificial brain which results expect human like cognition experiences was intelligence am really point approach you are not expect expect with just hope an hope are thinking sure work parameters the same quantifiable know know as neurons is cool most important response reference between human adapt quantifiable evolve during their and connection between human neurons change some image become reference reference response intelligence intelligence produced produced produced produced thats the thats while resulting human behavior learning etc etc we at all is eg their connections with other neurons at fundamental these give exactly unique identity where our tested they 101s and intelligence governed by adaptability our neurons and of our nervous adaptrons do they are merely cellular cellular inputoutput adaptabilities ie fundamentally intelligence evolution thats and why magic is missing if thinking i4 more these degrees evolve evolve you are absolutely adaptrons cannot evolve human neurons input would be capable physical dont candidates for each blocks any like we connection evolve chapter would freedom connection connection life connection connection protocols governed binding without do not real this few with other adaptrons blog this connection adaptability communication we discuss real adaptrons"

Appendix C

Original Thoughts of Primite 1.02 (Experiment C-A1)

"processes aspect sleep small genetics further concept 10 transfer using no theory thoughts clone book table ultimate concepts worked significant performance audience lets adaptabilities picture throughout primites guns make blazing a2 understanding goal without"

Original Thoughts of Primite 1.02 (Experiment C-A2)

"machines again physical clips slow nontechnical semiclone video had want jn 60 differently particular 10 transfer comparison postsynaptic state information experimental working useful worked biological framework easily bob naturally governs 36 vastly future relationships tandem gives decided was 2024nontechnical activated technical a2 tested intend numberpercentage large"

Original Thoughts of Primite 1.02 (Experiment C-A3)

"role candidate mathematical arbitrary consciousness had primite want times inclinations were further 10 transfer bigger produce parameters ultimate neuronal experimental computational i4 framework performance was activated established large"

Original Thoughts of Primite 1.02 (Experiment C-A4)

"differently processes transferred 1 used considerably nontechnical summary using understanding stimuli thoughts"

Original Thoughts of Primite 1.02 (Experiment C-B1)

"activation steps early april even brains concepts frequencies comfortably specifically without x had factors small two xneuronal bigger possible no itself n responses however see process something did alice when laboratory single binding naturally ie adaptabilities picture ideas synaptic every generalized activated make technical generating together large behaves adapts exposed highly initially candidate transferred physical subfields lastly mathematical nontechnical interacting primitive want salient times why were previous show feature genetics further particular 10 well comparison later chemical postsynaptic already behave experimental random keep didnt useful say clip idea i4 biological foundational way developed memory imagination audience field methods once section relationships response fundamentally here everything

remember machines must phenomena puzzle progress merit neurotransmitter presynaptic probabilities ali school airplane prominent overall easily call bob parents general individual interesting generate i1 literature personality foundation get going assumptions answers required quantifiable testable tested degrees freedom protocols models capacity target importance"

Original Thoughts of Primite 1.02 (Experiment C-B2)

"ldbs primite chapter transfer control thoughts state even neuronal neuroscience was a2 memories established states shows without x arbitrary humanity into sleep adapted only xneuronal bigger possible reference no itself n responses however see something xc presented image 101s ie every generalized activated make technical large behaves total physical subfields lastly mathematical nontechnical primitive want times show feature further particular current evaluate random keep 5 didnt say clip i4 biological foundational way memory imagination audience field methods section relationships response still airplane prominent slowly significant insights easily call bob parents governs general saw individual interesting generate i1 literature challenges get assumptions answers identical required testable tested degrees freedom protocols ran capacity simple"

Original Thoughts of Primite 1.02 (Experiment C-B3)

"101 chapter few happened state clone genetic parameters evolving information was used life without or video into jn defined xneuronal bigger reference no itself n responses context presented binding image 101s ie adaptabilities gives synaptic every generalized activated make technical candidate transferred physical subfields lastly mathematical nontechnical persons want why show feature experimental random keep 5 useful clip idea i4 biological foundational way developed memory imagination audience field methods once section response fundamentally goal major approach neurotransmitter keeping computational airplane prominent overall slowly significant insights easily call governs general saw individual interesting generate i1 personality foundation challenges get going assumptions identical quantity required expect quantifiable tested cellular degrees freedom protocols"

References:

1. **Eichenbaum, H.** (2011). *The Cognitive Neuroscience of Memory: An Introduction*. Oxford University Press.
2. **Mayer, R. E.** (2008). *Learning and Instruction (2nd ed.).* Pearson.
3. **Squire, L. R., & Kandel, E. R.** (2009). *Memory: From Mind to Molecules.* Roberts and Company Publishers.
4. **Purves, D., Augustine, G. J., Fitzpatrick, D., Hall, W. C., LaMantia, A.-S., Mooney, R. D., Platt, M. L., & White, L. E.** (2018). *Neuroscience (6th ed.).* Oxford University Press.
5. https://jn-research.com/blog/f/adaptrons----building-blocks-of-artificial-cognitive-systems
6. https://jn-research.com/blog/f/adaptrons---building-block-of-artificial-cognitive-systems-part-2