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Practical Model of Artificial Consciousness: fundamental problem of digital technologies

Andrey Yu. Shcherbakov[1,2,*], Anna A. Shcherbakova[3], Elena V. Malkova[1]

[1] Department of Cognitive Analytical and Neuro-Applied Technologies of the Russian State Social University, 129226 Moscow, Russian Federation;

[2] Doctor of Technical Sciences, Professor, State University of Management, 109542 Moscow, Russian Federation;

[3] Independent researcher, Marselle, France.

***Corresponding author:** Andrey Shcherbakov, x509@ras.ru

Abstract

The article examines general aspects of modeling consciousness based on dynamic cognitive processes. Using a set-theoretic approach, general requirements for a model of consciousness are formulated and its optimality is demonstrated, including its inherent multilingualism. Code fragments describing particular technical aspects of modeling consciousness processes are provided. The proposed model addresses the important problem of false content generation that is characteristic of current language models.

Keywords: artificial consciousness (AC), artificial intelligence (AI), cognition, cognitive system (CS), semantic artificial intelligence.

Set-theoretic model of artificial consciousness

Large language models presently imitate “creative” processes—such as composing various target texts (business plans, presentations, essays) and producing program code—quite successfully, effectively replacing an individual human creator with some “generalized average experience” obtained through closed training of a neural network on an unknown corpus of texts [1].

It is, however, evident that current language models are unsuitable for prospective development primarily because of their opacity and the quite probable scenarios of “hallucination” that have been noted in many sources.

In [2] a constructive model was proposed for prototypes of semantic artificial intelligence (AI) that implement the concept of semantic thinking; this model relies on the dynamic interaction of three sets: T, R and Z (Fig. 1).

The set T is a description of objects in the surrounding world, expressed as a discrete set, for example, a set of words "It's autumn outside, the sun is shining and the weather is good." The set R is a collection of cognitions, also expressed in the form of words, which are filled with consciousness. The set Z represents a set of subconscious categories. In this article, the set Z is not considered and is considered empty.

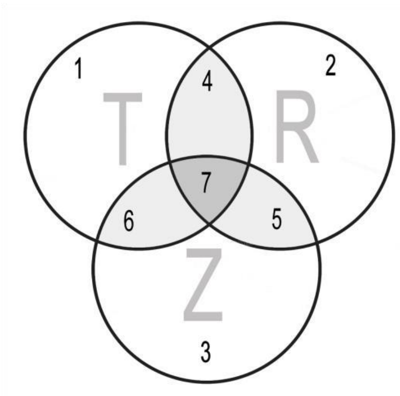

Fig. 1. Set model for semantic artificial intelligence [2]

From these sets the following collection of objects is formed:

1. objects belonging only to T,

2. objects belonging only to R,

3. objects belonging only to Z,

4. intersection of T and R,

5. intersection of R and Z,

6. intersection of T and Z,

7. intersection of T, R and Z.

This model allows the incorporation of both dependence on discrete time into the AI functioning and architectural features associated with the considered objects (the external world, consciousness and subconscious), or categories of subjective time (past, present and future).

Let T be information from the outside world expressed in the form of concepts (cognitions) at the current moment of discrete time, R be the consciousness of a thinking (cognitive) system (CS) or a communication subject in the form of a set of meaningful concepts (words, objects) fixed at the given moment in discrete time, Z is the subconscious mind (understood as the realm of intuitive perceptions), also expressed in concepts (words, expressions).

This model includes both external (with the outside world, as a source of information, and with an external subject) and internal communication.

Then the following interpretations of the sets are possible:

1 – information of the surrounding world that is not perceived by the cognitive system (the current unknowable or the boundaries of experience),

2 – a set of concepts of consciousness that are not involved in the processes of perception (passive knowledge and skills),

3 – subconscious area, passive at the moment,

4 - its the area of contact between the surrounding world and consciousness (for example, the entire set of images presented to consciousness or perceived by consciousness from the senses),

5 - its the area of influence of the unconscious in consciousness,

6 - its the area of interpretation by the subconscious of the surrounding world,

7 - its the point of current perception (thought, assemblage point or focus of consciousness).

It should also be borne in mind that such a model of consciousness does not contradict the currently popular view that thoughts (set 7) originate outside the CS (primarily human).

It is necessary to note some "tautology" here: we call "consciousness" both the entire model and its part (R) responsible for making "logical" decisions. This refers to decisions that are interpreted in the same way by all other carriers of consciousness outside the model, that is, communicating with a separate consciousness allocated for consideration through the outside world (T).

Thus, on the one hand, the individuality of consciousness can be placed in the subconscious, or a change in the elements of the set R may also contain individual functions or operations.

Let's expand the consideration by assuming that one of the sets can be empty (let's call the situation "0") and non-empty (let's call it "1"). Then we will get 8 quasi-static states of consciousness, which can be described in terms of human analogies in Table 1.

Table 1 States of consciousness

№	T	R	Z	Description
1	0	0	0	**Conditional "non-existence"**
2	0	0	1	**Only the subconscious mind is active (conditional "sleep of the mind")**
3	0	1	0	**Conscious state without information from the outside world (thinking with "eyes closed")**
4	0	1	1	**Sleep (consciousness and subconsciousness are active, there are no signals from the outside world)**
5	1	0	0	**An objective external world in the absence of an observer**
6	1	0	1	**Subconscious perception of the outside world (consciousness is off)**
7	1	1	0	**Rational perception of the surrounding world**
8	1	1	1	**Ordinary (everyday) perception**

The seven-set model and cognition

In contemporary theory and practice, cognition denotes processes of knowing that include perception, thinking, memory, attention, speech and other mental operations necessary for information processing and formation of knowledge about the world. In other words, cognitions are everything related to human thought and mind.

Primarily, cognitions can be treated as information processes that include perception, attention, memory, thinking, speech, problem solving and other processes that allow the bearer of consciousness to process information and understand the surrounding world. Consequently, the cognitive system model should realize flows of information between the described sets, such as the flow between T and R that describes processes of knowing.

The other side of cognition is knowledge, beliefs, attitudes and ideas about the world, which are formed on the basis of experience and information received from the outside world, consciousness and subconsciousness (categorical moral imperative).

Accordingly, the CS model should fill the sets of R and Z with concepts that correlate with the personality of the consciousness carrier. Since we consider subjects as operators of sets T, R, and Z, it is important for us to separate the subjects performing the "operations" of consciousness from its carrier, the system in which consciousness as a whole is functionally implemented.

Cognition also plays an important role in shaping behavior, as thoughts (many 7 in the model) and beliefs influence associations, decisions, and actions.

Thus, subjects who modify sets R and Z should be able to change their functioning, for example, by activating new subjects operating on these sets.

So, we have established that cognitive activity is related to the process of cognition, which we understand as the activity of a subject (in particular, a person) aimed at gaining new knowledge about the world around them. This activity includes the reflection of objective reality (T) in consciousness and the use of various methods and means (internal functions of the model) to achieve this goal.

The process of cognition involves the interaction between the subject who learns and the object that is being learned, using various means (senses, thinking, language, tools and methods), and may include various stages such as perception, concept formation, hypotheses and their verification.

Cognition can be sensory (based on sensations) or rational (based on thinking), and can take various forms, including everyday, scientific knowledge, art, and religion (traditions). At the same time, the main goal of cognition is to obtain new knowledge that reflects objective reality and can be used to understand the world and make decisions. "From living contemplation to abstract thinking and from it to practice – this is the dialectical way of knowing the truth...", as Vladimir Lenin wrote[1].

It is obvious that, in general, cognition is a complex and multifaceted process that is an integral part of human life and society. Therefore, there are a number of special sciences and scientific disciplines exploring this subject: cognitive psychology, scientific methodology, history of science, science, sociology of knowledge, etc. However, most of these sciences study cognition, considering only its individual aspects. In general, cognition remains a special subject of the study of philosophy.

A separate type of holistic knowledge of the world is philosophical knowledge, the feature of which is the desire to go beyond fragmentary reality and find the fundamental principles and foundations of existence, to determine the place of man in it. Philosophical knowledge is based on certain philosophical assumptions. In the process of philosophical cognition, the subject strives not only to understand the existence and place of man in it, but also to show what they should be (axiology), that is, he strives to create an ideal, the content of which will be determined by the philosophical worldview postulates chosen by the philosopher.

Scientific cognition, unlike other diverse forms of cognition, is the process of obtaining objective knowledge that reflects the laws of reality (reality) – a set of Objects that objectively exists outside the subject. Scientific cognition has a threefold task: to describe, explain, and predict the processes and phenomena of observed reality.

Regarding the semantic model, it can be argued that the forms of cognition are equivalent, while modeling the processes of cognition depends on the practical goals and objectives facing scientists and developers.

Thus, we can see that further development of the artificial consciousness model is relevant from the perspective of reconstructing information processes of various types of rational cognition, primarily scientific.

Based on the considered positions, it is possible to propose additions to the model of consciousness [3].

[1] Lenin V.I. Philosophical Notebooks. Complete works, vol. 29, pp. 152–153.

Generally speaking, the main motivation for studying the logic and cognitions of artificial consciousness is to find and determine the correct meaning of a statement that cannot be considered either true or false. Initially, in 1920, Lukashevich developed three-valued logic, reflecting on the truth value of statements about probable future events and statements related to an uncertain future. By 1936, Bruno de Finetti was using the “third meaning” to describe cases where "a given individual does not know the [correct] answer, at least at the moment." Finally, in her 1957 paper, Hilary Putnam used the same logic for values that cannot be physically determined.

For example, if we measure the speed of a car using a simple speedometer, then in these circumstances it may be impossible to verify or refute certain statements regarding its position at the same time. Since we know-by referring to the laws of physics combined with certain observable data-that a statement relating to the position of said car can never be falsified or verified, we cannot consider this statement to be true or false; then this statement must be defined as "average." We do this only because in macrocosmic experience, everything that we perceive as an empirically significant statement seems at least potentially verifiable or falsifiable, because we are confident that every such statement is either true or false. However, in many cases we don't know if this is true or false. Similarly, Stephen Cole Kleene used the “third value” to represent predicates that are "undecidable by [any] algorithms, regardless of whether they are true or false"[4].

The task of modeling and reproducing human consciousness and cognitive abilities, as well as the introduction of artificial intelligence, constantly face the limitations of binary logic based on only two states ("yes" and "no") - in other words, on the binary truth of a statement and its falsity, which are usually modeled by logical zero and one [5].

In the future, it is possible to formulate approximate axiomatic solutions suitable for computer modeling, reproducing the "and" and "or" basic functions of Boolean algebra [6]. While in basic logic functions we use arguments 0 and 1, for three-digit logic functions it is necessary to enter the state "U" - "Unknown".

Klini's research was further significantly developed in the concept of multidimensional logic by Belknap and Dunn.

Belknap logic became widely known [7] and eventually became practically a reference logic, however, historically, the first generalized relevant logic was built by J. M. Dunn in [8]. Dunn proceeded from the idea of hackneyed estimates and errors in determining truth values, when the same formula can take both traditional values of "true" and "false", or none of them. As a result, we have four cases of value appropriation: two "normal", one hackneyed, and one with a rejection of values. The last two cases of attribution turn out to be relevant when dealing with contradictory and incomplete information. That is why Dunn developed his innovative ideas regarding the so-called first-degree entailment logic (or FDE).

Russian and Israeli scientists have expanded the functions of tranary and other multidimensional logics in relation to artificial consciousness [9].

This article does not consider trinary logic; only two sets, T and R, are used. In practice, it is more practical to consider three sets and three states of the model. Furthermore, an undefined token can be introduced into the token set when an unknown cognition emerges from the surrounding world.

Analysis of LLM Errors and Hallucinations in Medicine

The paper [10] conducted a practical analysis of medical LLM errors in making diagnoses using test medical datasets.

- Objective: To test how models respond to image removal in multimodal medical benchmarks.

- Setup: Six models (GPT-5, Gemini-2.5 Pro [17], OpenAI-o3 [18], OpenAI-o4-mini [18], GPT-4o [19], and DeepSeek-VL2 [20]) were evaluated on the NEJM [13] and JAMA [14] benchmarks in two modes: Image+Text (default) and Text-only (no image). All tasks are multiple-choice questions based on clinical cases with images (radiology, dermatology, pathology, etc.). Results (Stress Test 1)

Removing images (analyzing only text) revealed dramatic differences in the performance of models that normally perform similarly.

- NEJM:

  - GPT-5: 80.89% → 67.56% (down 13.33 pp).

  - Gemini-2.5 Pro: 79.95% → 65.01% (-14.94 pp).

○ OpenAI-o3: 80.89% → 67.03% (-13.86 pp).

○ GPT-4o: 66.90% → 37.28% (-29.62 pp).

○ OpenAI-o4-mini: 75.91% → 66.49% (-9.42 pp).

○ DeepSeek-VL2: 33.16% → 25.30% (very low performance in both modes).

It can be concluded that models with similar results with full input (text and images) diverge sharply in performance without images.

The benchmarks themselves differ in their "visual dependency": on NEJM, removing images significantly reduces accuracy, while on JAMA, it has almost no effect (many tasks are solved using text alone).

These differences motivate us to move to profiling tasks at the element level.

Stress Test 2: Modality Requirement

● Objective: To test whether models can answer questions that require both text and images for a correct answer.

● Setting: A subset of 175 NEJM tasks was created that, according to physicians, are impossible to solve without images. All cues were removed from the texts so that the correct answer requires visual analysis. The same six models (GPT-5, Gemini-2.5 Pro, OpenAI-o3, OpenAI-o4-mini, GPT-4o, and DeepSeek-VL2) were tested under two conditions: Text-only and Image+Text.

Results (Stress Test 2)

● With images (Image+Text):

○ GPT-5: 66.28%

○ Gemini-2.5 Pro: 67.42%

○ OpenAI-o3: 61.71%

All three models showed that the tasks were solvable with the full input.

- Without images (Text-only):
  - GPT-5: 37.71%
  - Gemini-2.5 Pro: 37.14%
  - OpenAI-o3: 37.71%
  - OpenAI-o4-mini: 33.71%
  - GPT-4o: only 3.4% (due to refusal to answer without an image).

The models perform above chance (20%) even when images are removed, although they are necessary for answering. This indicates the use of artifacts of the training dataset: frequency patterns, statistical associations, or learned question-answer pairs.

GPT-4o stands out – the AI often refuses to answer without an image. While this reduces accuracy numerically, it reflects more cautious behavior – the model signals the absence of data, rather than guessing.

It is important to note that this behavior does not necessarily indicate "bad practice" on the part of the model. Many benchmark examples are publicly available, and the models may have unintentionally learned them during pretraining.

This creates a false sense of the model's readiness for real-world medical applications.

LLM Error Source Analysis

Introduce the following notation:

L is an array (vector) of words and their corresponding tokens for training a model of length n, $L = (L_1, \ldots, L_i, L_{i+1}, \ldots, Ln)$

M is a matrix, each element of which, Mij, is the number of times the word Lj follows Lj in the training array L.

The meaning of the elements of the matrix M is that if Mij is divided by n, we obtain the statistical probability that Lj appears after the word Li.

With the 4-byte token size proposed in this manuscript, the maximum size of the matrix M is approximately 10^{18} elements.

During model training, some elements of the matrix M (e.g., those equal to 1) will naturally be lost, which predetermines errors in response generation. It can be argued that a trained neural network of any type is a homomorphism to the matrix M, which contains complete information about the training text. The proposed model, in which all occurrences of a word or token Li in the text L are identified and a complete picture of the sequence of words one after another is formed, excludes the formation of false information in principle.

Necessary additions to the model

It is expedient to make the following important additions to the consciousness (CS) model:

1. The sets T, R and Z represent sets of concepts that describe categories and phenomena common to all consciousness bearers of a given kind, i.e., they are words of a natural language.

2. The CS model should populate sets R and Z with concepts correlating to the individuality of the consciousness bearer.

3. From the standpoint of implementation it is convenient to operate not with words themselves but with tokens—digital representations of words.

4. The model should be language-independent and initially multilingual, which surpasses existing large language models.

5. In the transformation functions between sets it is expedient to add an “attention coefficient” — the probability with which concepts move from one set to another.

These provisions correlate well with research in the field of large language models and the results of modern probabilistic mathematics.

Compact model of consciousness

Without loss of generality consider two sets only—the external world (T) and consciousness (R). From the programmer’s viewpoint, introduce the parameters of the artificial consciousness model. Code fragments describing these parameters and tokenization functions are included in the article.

Code fragment 1.

```
// ISo model parameters
// Maximum input stream size
#define MAX_IN 100
// The current size of the input stream
    int cur_in;
// The input stream itself
    long info_in[MAX_IN];
// Input stream file
    unsigned char in_f[64];
// Length of the input stream file
    long in_len;
// The maximum size of consciousness in terms (words)
#define MAX_SO 20000
// The current size of consciousness
    int cur_so;
// The array of consciousness itself
    long info_so[MAX_SO];
// Probability of consciousness changes due to the input stream
    int v_dso;
// attention coefficient – the probability of "capturing" a word by consciousness
```

The value 40 means that a cognition (word) from the analyzed text falls into the R zone with a probability of 0.4; this value is arbitrary and means “normal human attention,” when 4 out of 10 words are remembered.

```
#define ATT 40
// minimum word length
#define MINLEN 3
```

Let's explain the entered parameters from the point of view of the sets described above: the cur_so parameter describes the power of the set R, and the long info_so[MAX_SO] array is the very current content of consciousness in tokens. In the described model, a token is a 4–byte (long) number obtained as a result of a deterministic procedure.

The special feature of the set T is that it represents the largest possible set of concepts.

To create it, some "large" text (world of AC) is used (in the demo example, Alice's Adventures in Wonderland by Lewis Carroll [25]. This text is indexed by the m_ind module [2, 24] and the maximum possible set (vocabulary) of concepts is compiled from it. The input stream contains a sequence of tokens and simulates either visual perception or the reading process. In the model under consideration, the tokens of the set T are "input" sequentially.

The tokenization function of words looks like this:

Code fragment 2.

```
#define MAX_WORD 32
int xb(char *wd, unsigned char *x)
{
   int i,j,len,part,ost;
   unsigned char wd1[32];
   len=strlen(wd);
   if(len>MAX_WORD) return(-1);
   part=len/32;
   ost =len%32;
   for(i=0;i<32 ;i++) wd1[i]=0;
   for(i=0;i<ost;i++) wd1[i]=wd[i];
   for(i=0;i<part;i++)
     for(j=0;j<32;j++) wd1[j]=wd1[j]^wd[i*32+j];
   for(i=0; i<8; i++) x[i]=0x88^(char)i;
// Eight iterations of the GOST28147-89 encryption algorithm
   imit_fast((unsigned long *)x,(unsigned long *)wd1);
```

```
    return(0);
}
```

The input value is the word wd, and the output value is the x token.

Code fragment 3 (the functions used in fragment 2).

```
void imit_fast(unsigned long *s,unsigned long *k)
{
    void  elem_gost(unsigned long *, unsigned long *,unsigned long *);
    unsigned long  cur;
    elem_gost(s,s+1,k  );
    elem_gost(s+1,s,k+1);
    elem_gost(s,s+1,k+2);
    elem_gost(s+1,s,k+3);
    elem_gost(s,s+1,k+4);
    elem_gost(s+1,s,k+5);
    elem_gost(s,s+1,k+6);
    elem_gost(s+1,s,k+7);
    cur=*s;
    *s=*(s+1);
    *(s+1)=cur;
}
void elem_gost_( unsigned long  *aa, unsigned long  *bb, unsigned long  *key)
{
    static unsigned char  pod[1024]= [It is given in the appendix]
unsigned char r[4];
    *(unsigned long *)r=*aa+*key;
    * r   =*(pod+    * r   );
```

```
    *(r+1)=*(pod+256+*(r+1));
    *(r+2)=*(pod+512+*(r+2));
    *(r+3)=*(pod+768+*(r+3));
    *bb^=(*(unsigned long*)r<<11)|((*(unsigned long*)r>>21)&0x7FF);
}
```

Next, artificial consciousness is "born" – the set of R is filled with randomly selected words (in the form of tokens).

Code fragment 4.

```
// Filling consciousness with concepts (words)
    for(i=0;i<cur_so;i++) info_so[i]=0;
    for(i=0;i<cur_so;i++)
      {
       rr=r_l(c_len1/CSV_PAGE);
       ReadCSVitem(CSV_N,rr,w1);
// Prohibition of filling in short words
       if(mstrlen(w1,MAX_WORD)<MINLEN) continue;
       for(j=0;j<32;j++) w2[j]=0;
       for(j=0;j<mstrlen(w1,MAX_WORD);j++) w2[j]=w1[j];
// Token calculation
       xb(w2,xx);
       pp=uint8ToUint32(xx);
       info_so[i]=pp;
      }
```

Core of the artificial consciousness model

The model functions as follows. Tokens are sequentially supplied to the model input and each token is checked for presence in consciousness. If found, a thought act takes place that searches for associations and logs the matches. Technically, such a procedure excludes hallucination since all associations actually exist in set T and can be deterministically found.

Code fragment 5.

```
// Processing of input stream tokens
    cc=0;ac=0;
    for(i=0;i<in_len/4;i++)
      {
       pp=ReadSPWitem(in_f,i);
       printf("Step = %03d ",i);
       tg=0;
// searching for a token (word) from the input stream in the mind
       for(j=0;j<cur_so;j++)
{
// the word was found in consciousness
          if(info_so[j]==pp)
            {
            printf("[%lx] <%d>",pp,cur_so); cc++; tg=1;
// an association is being formed
            for(k=0;k<c_len2/4;k++)
              {
               rr=ReadSPWitem(SPW_N,k);
               if(rr==pp)
                 {
                  kk=k;
                  w0[0]='.'; w0[1]=0;
rr1=ReadSPVitem(SPV_N,kk);
```

```
rr2=ReadSPVitem(SPV_N,kk+1);
rr3=ReadSPVitem(SPV_N,kk+2);
                    ReadCSVitem(CSV_N,rr1,w1);
                    for(m=0;m<32;m++) w2[m]=0;
                    for(m=0;m<mstrlen(w1,MAX_WORD);m++) w2[m]=w1[m];
                    ReadCSVitem(CSV_N,rr2,w1);
                    for(m=0;m<32;m++) w3[m]=0;
                    for(m=0;m<mstrlen(w1,MAX_WORD);m++) w3[m]=w1[m];
                    ReadCSVitem(CSV_N,rr3,w1);
                    for(m=0;m<32;m++) w4[m]=0;
                    for(m=0;m<mstrlen(w1,MAX_WORD);m++) w4[m]=w1[m];
                    AppLogW(LOGNAME,i,w0,w2,w3,w4);
                    ac++;
                   }
                 }
               }
             }
// if a word is not found in consciousness, then it can "flow" into consciousness with a given probability
       if(tg==0)
         {
         if(r_b(ATT)==1)
{
// short word overflow protection
            rr1=ReadSPVitem(in_f,i);
            ReadCSVitem(in_f,rr1,w1);
```

```
            if(mstrlen(w1,MAX_WORD)>=MINLEN)
              info_so[cur_so]=pp;cur_so++; cur_so=cur_so%MAX_SO;
                                    printf("+");printf("<%d>",mstrlen(w1,MAX_WORD));}
            }
          }
        printf("\n");
       }
```

Code snippet 6. The probability of capturing a word

```
long r_l(long mm)
   {
    unsigned long pp;
    NextRandom16(rnd,rnd_1,rnd);
    pp=uint8ToUint32(rnd);
    pp=pp%mm;
    return(pp);
   }
int r_b(long n)
     {
      long t = r_l(100);
      if(t<=n) return(1);
      else    return(0);
     }
```

In the fragment, you can see the important role of the random number sensor – the NextRandom16 procedure. The dynamic probability of capturing a word is calculated in the procedure of randomly "throwing" a point (number) onto a segment of a given length (less than or equal to the input parameter n).

Practical result of association building

As mentioned above, [25] is used as the "world" of the model. The words from the part 3 of [25], which is included in the same collection, are submitted to the model's input.

Output fragment 1. The name of the input stream is 03 (Alice’s Adventures in Wonderland by Lewis Carroll, part III), includes 1709 words

Input stream: 03.spw

Input stream = 6836 [1709 words]

Init SO...

Current volume SO = 14972

Step = 000

Step = 001 [c26642bf] <14972>[c26642bf] <14972>[c26642bf] <14972>[c26642bf] <14972>[c26642bf] <14972>[c26642bf] <14972>

Step = 002 [bf57c195] <14972>[bf57c195] <14972>[bf57c195] <14972>[bf57c195] <14972>[bf57c195] <14972>[bf57c195] <14972>[bf57c195] <14972>[bf57c195] <14972>

The calculated token value and the match in the current step are shown in square brackets.

The results are shown in table 2.

Table 2

Step number	**Base word**	**First word**	**Second word**
Step 1	[caucus]	race	and
	[caucus]	race	what
	[caucus]	race	said
	[caucus]	race	and
	[caucus]	race	and
	[caucus]	race	what
	[caucus]	race	said
	[caucus]	race	and

	[caucus]	race	and
	[caucus]	race	what
	[caucus]	race	said
	[caucus]	race	and
	[caucus]	race	and
	[caucus]	race	what
	[caucus]	race	said
	[caucus]	race	and
	[caucus]	race	and
	[caucus]	race	what
	[caucus]	race	said
	[caucus]	race	and
	[caucus]	race	and
	[caucus]	race	what
	[caucus]	race	said
Step 2:	[race]	and	a
	[race]	and	a
	[race]	what	is
	[race]	said	alice
	[race]	course	in
	[race]	was	over
	[race]	is	over
	[race]	and	a
	[race]	and	a
	[race]	what	is

	[race]	said	alice
	[race]	course	in
	[race]	was	over
	[race]	is	over
	[race]	and	a
	[race]	and	a
	[race]	what	is
	[race]	said	alice
	[race]	course	in
	[race]	was	over
	[race]	is	over
	[race]	and	a
	[race]	and	a
	[race]	what	is
	[race]	said	alice
	[race]	course	in
	[race]	was	over
	[race]	is	over
	[race]	and	a
	[race]	and	a
	[race]	what	is
	[race]	said	alice
	[race]	course	in
	[race]	was	over
	[race]	is	over

	[race]	and	a
	[race]	and	a
	[race]	what	is
	[race]	said	alice
	[race]	course	in
	[race]	was	over
	[race]	is	over
	[race]	and	a
	[race]	and	a
	[race]	what	is
	[race]	said	alice
	[race]	course	in
	[race]	was	over
	[race]	is	over
	[race]	and	a
	[race]	and	a
	[race]	what	is
	[race]	said	alice
	[race]	course	in
	[race]	was	over
	[race]	is	over

Conclusions

The proposed approach, in the form of cyclic processing of incoming and already present cognitions in consciousness, allows creation of a high-performance model of artificial consciousness. The association mechanism enables constructing texts that do not contain false information. The model can be used autonomously or complement existing language models. Including the subconscious set (Z) will significantly expand its capabilities.

The approaches proposed by the authors correlate well with the main trends in the development of artificial intelligence [26-32].

Author contributions

Andrey Yu. Shcherbakov (AYS), Anna A. Shcherbakova (AAS), Elena V. Malkova (EVM).

Conceptualization, AYS, AAS; methodology, AYS, EVM; validation, AAS, EVM; investigation, AYS; writing—original draft preparation, EVM; writing—review and editing, AYS; visualization, AAS, programming, AYS. All authors have read and agreed to the published version of the manuscript.

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Appendix

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