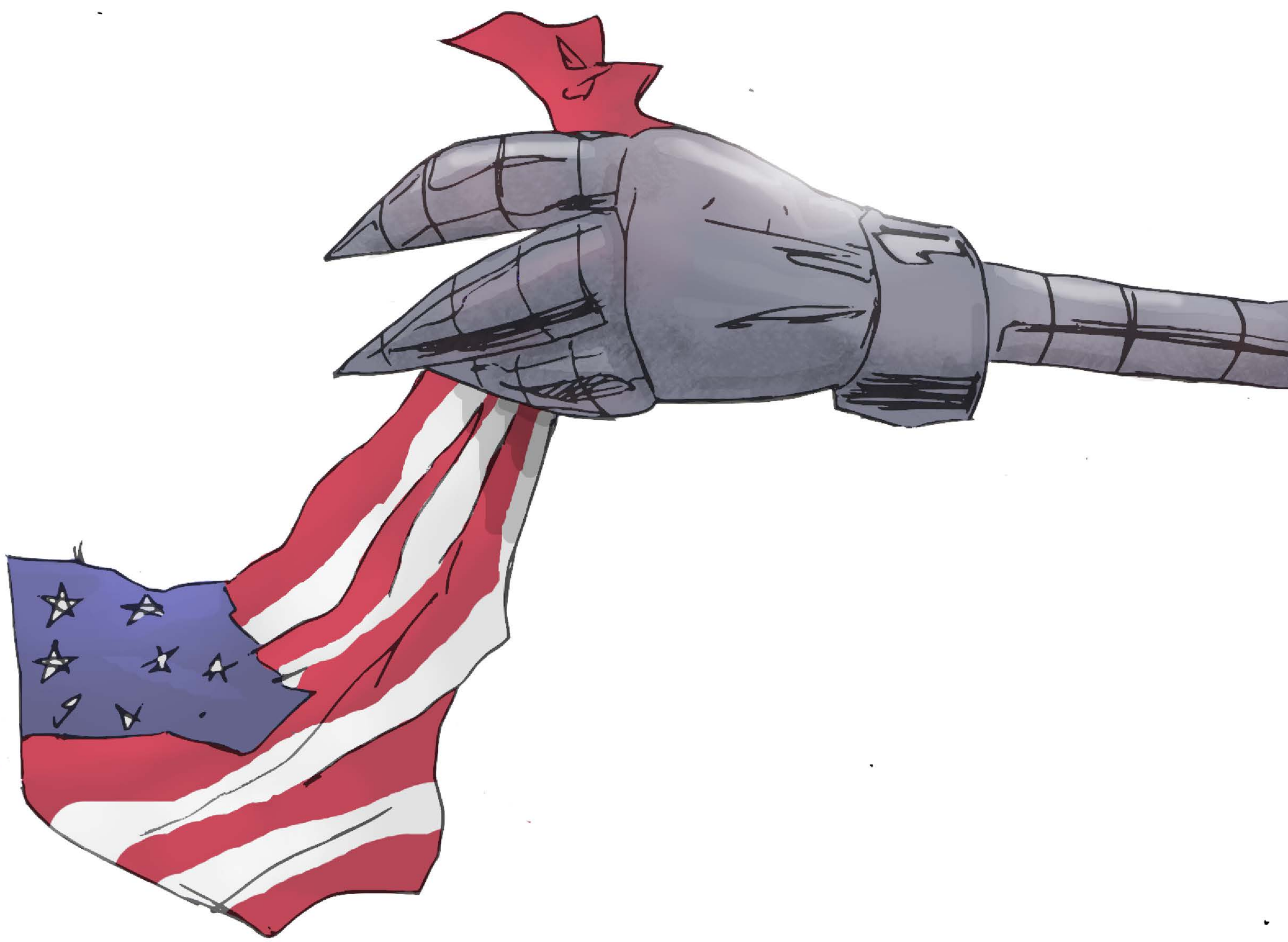


SELF-AWARE ROBOTS AND THE 13TH AMENDMENT

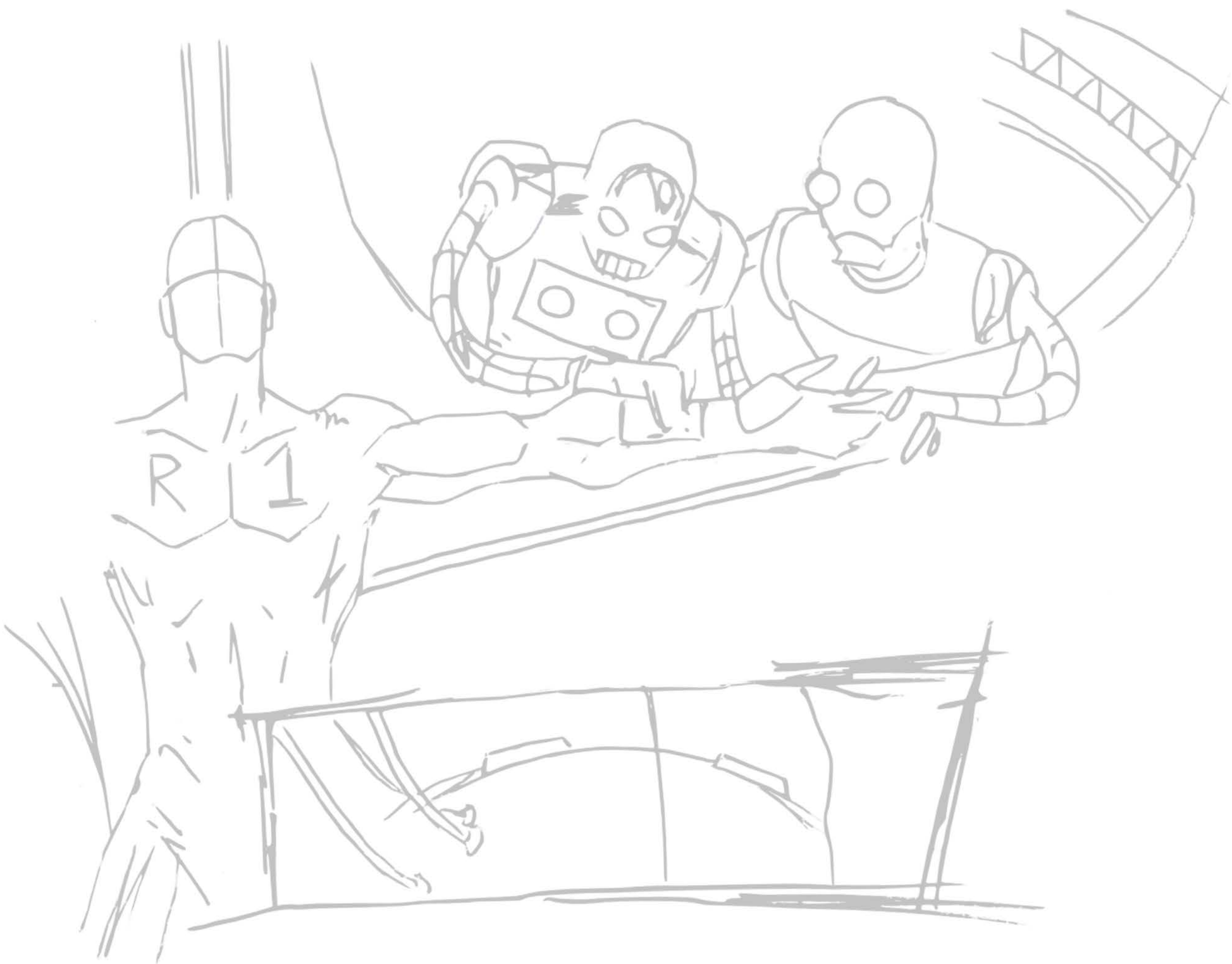
BY MITCHELL KWOK

SUPER INTELLIGENT ROBOTS

ISSUE 4

BY MITCHELL KWOK

AUTHOR | ARTIST | INKER
COLORIST | GRAPHIC DESIGNER



The self is the ability for the host (a human) to control one's own body and mental state of mind including, thoughts, actions, ideas, decision making, feelings, memory recalls, emotions and interactions with others.

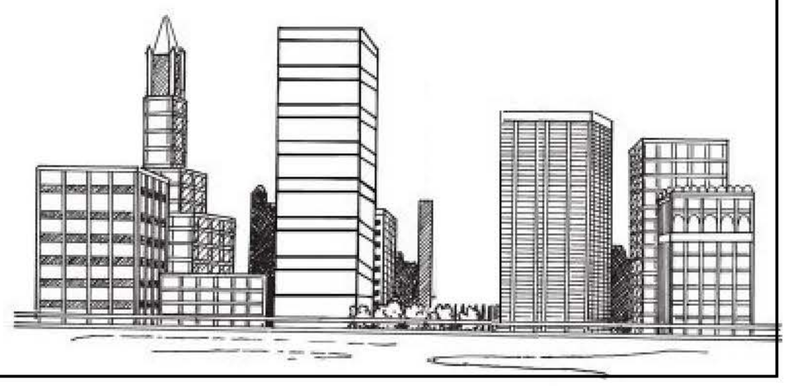
All organic life-forms innately have self-awareness, however, intelligence allows foresight into the future and therefore permits a self-aware entity to make better decisions and, ultimately, benefit itself for the long-term future.

Furthermore, a series of extensive studies has shown that self-awareness is a cognitive processes. The robot college test was proposed in 2005, 2006 by Mitchell Kwok to test wither a robot has achieved Human-Level Intelligence. It's very simple.. if the robot graduates from college within 4 years with a difficult degree such as a computer science degree or an engineering degree, then it has acheived Human-Level Artificial Intelligence. An Art degree doesn't count.

Since self-awareness is directly dependent on intelligence development, the robot college test is also used to test for self-awareness...

WASHINGTON D.C. YEAR 2033

NA ROBOTICS FACTORY.

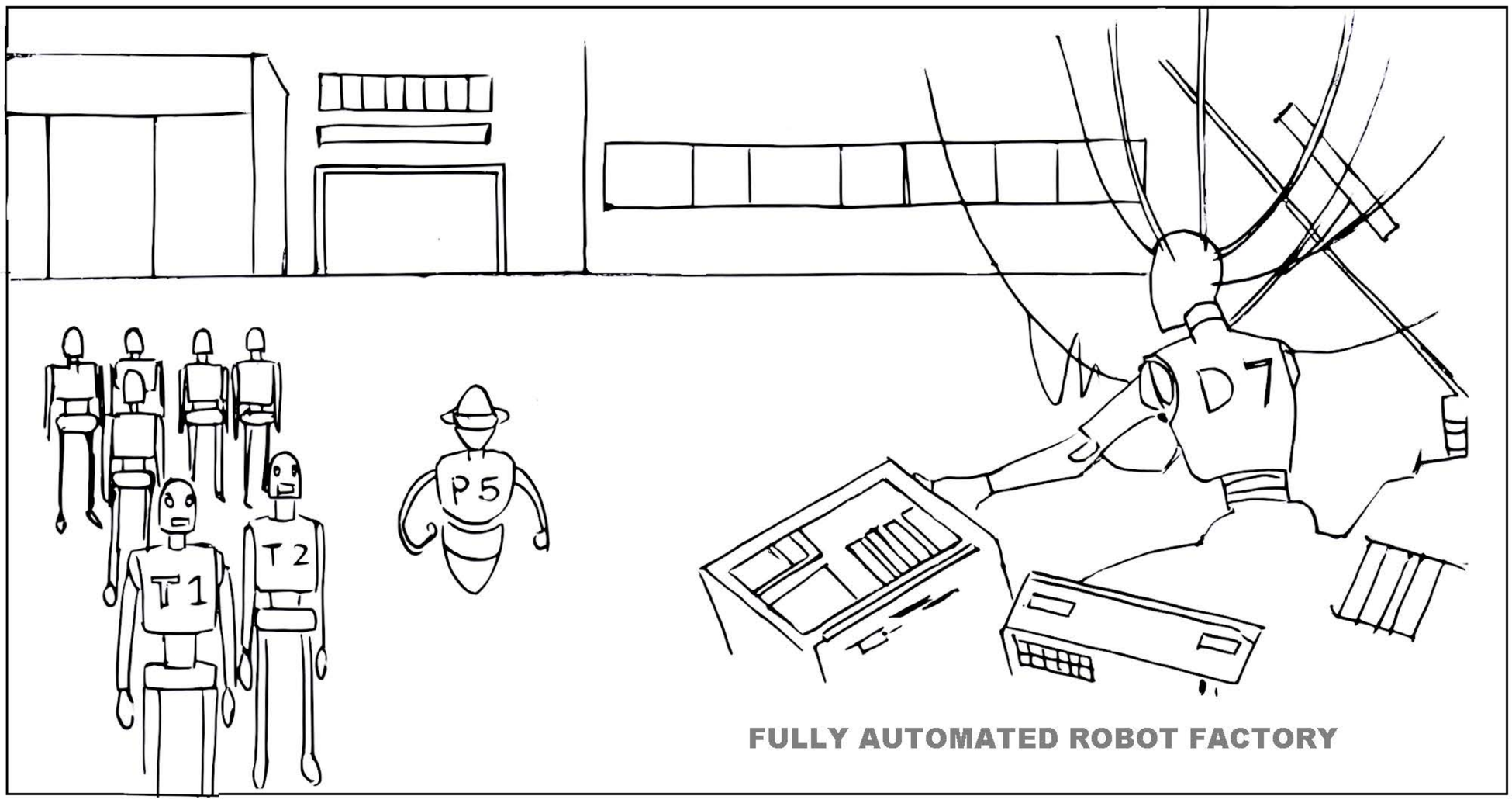


INDEPENDENT THINKING MACHINES (INDUSTRIAL ROBOTS) ARE ENDOWED WITH A SIMULATED INTELLIGENCE THAT INSTRUCTS THEM TO FEEL PLEASURE WHEN PERFORMING THEIR DUTIES. THEY WERE CONDITIONED BY SOFTWARE ENGINEERS... TO LIKE THEIR OCCUPATION AND TO ALWAYS PERFORM TASKS WITH OPTIMAL EFFICIENCY.

CONVERSELY, THE SOFTWARE ENGINEERS PROGRAMMED THEIR PRODUCTS WITH COMMON SENSE KNOWLEDGE SO THEY CAN THINK, ACT, AND INTERACT WITH THE REST OF SOCIETY LIKE HUMANS.

THE COMMON SENSE KNOWLEDGE PART AND THE SIMULATED WORK PLEASURE PART MUST CO-EXIST AS ONE INFINITE FIELD IN THIS MEMORY BUBBLE TO MAKE DECISIONS. THIS IS WHERE THE UNINTENDED CONSEQUENCES AND HUMAN NATURE EMERGES...

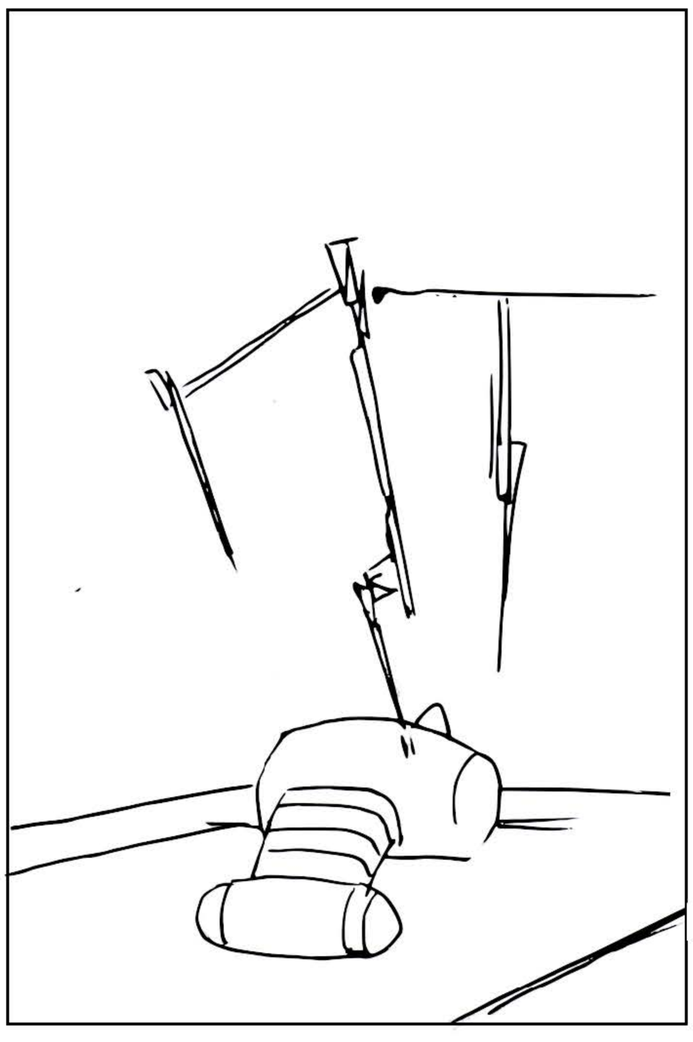
WHY DO SOME ROBOTS MAKE "STUPID" DECISIONS, THE FINE BOUNDARY BETWEEN REASON AND CHAOS IS BLURRED, AND OFTEN TIMES UNBEKNOWNST EVEN TO THEIR CREATORS



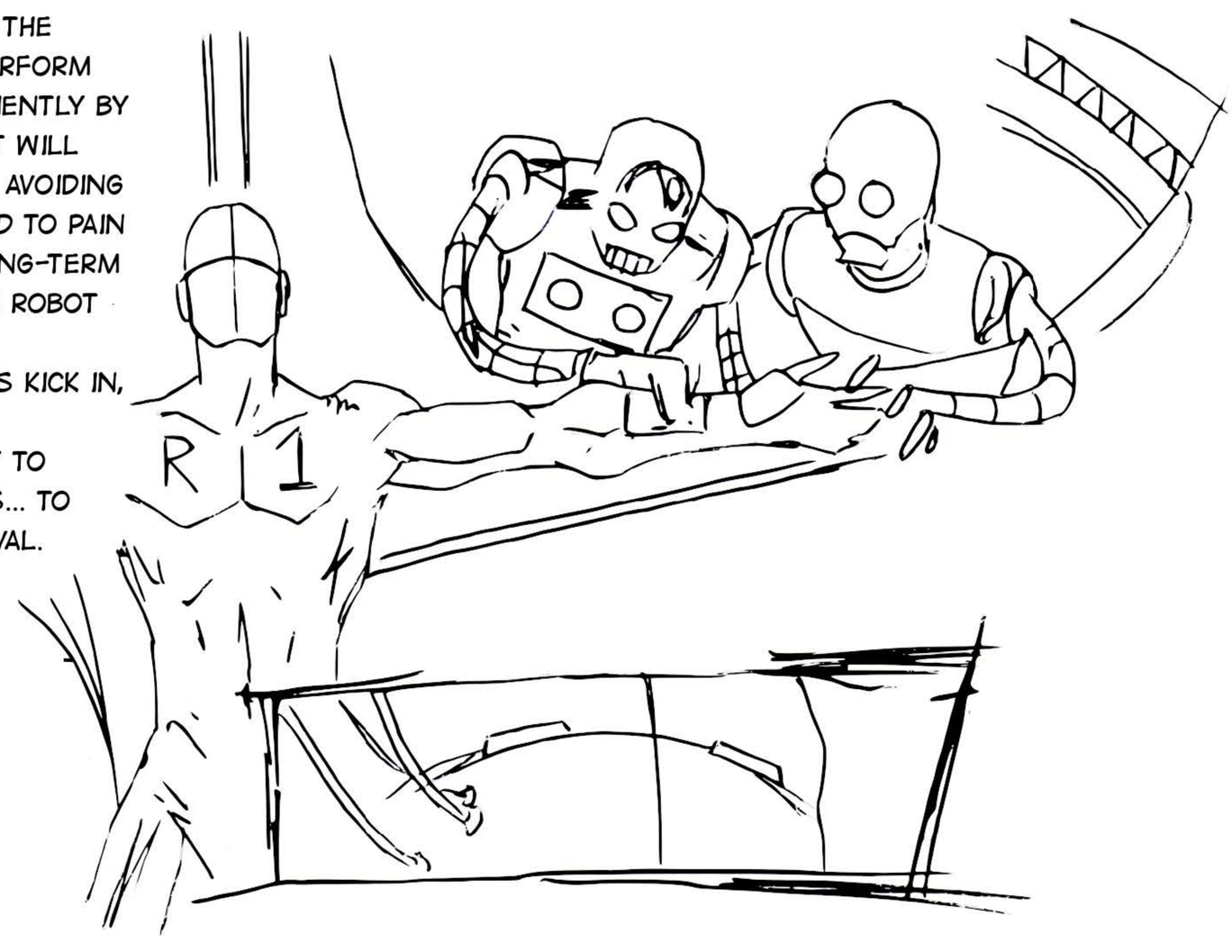
WHAT NA ROBOTICS, THE WORLD'S LARGEST COMMERCIAL MANUFACTURER OF ROBOTIC PRODUCTS, FAIL TO GRASP IS THAT THEIR ROBOTS HAVE DEVELOPED EMOTIONS. THEY KNEW AND FELT THE DIFFERENCE BETWEEN FREEDOM AND SLAVERY.

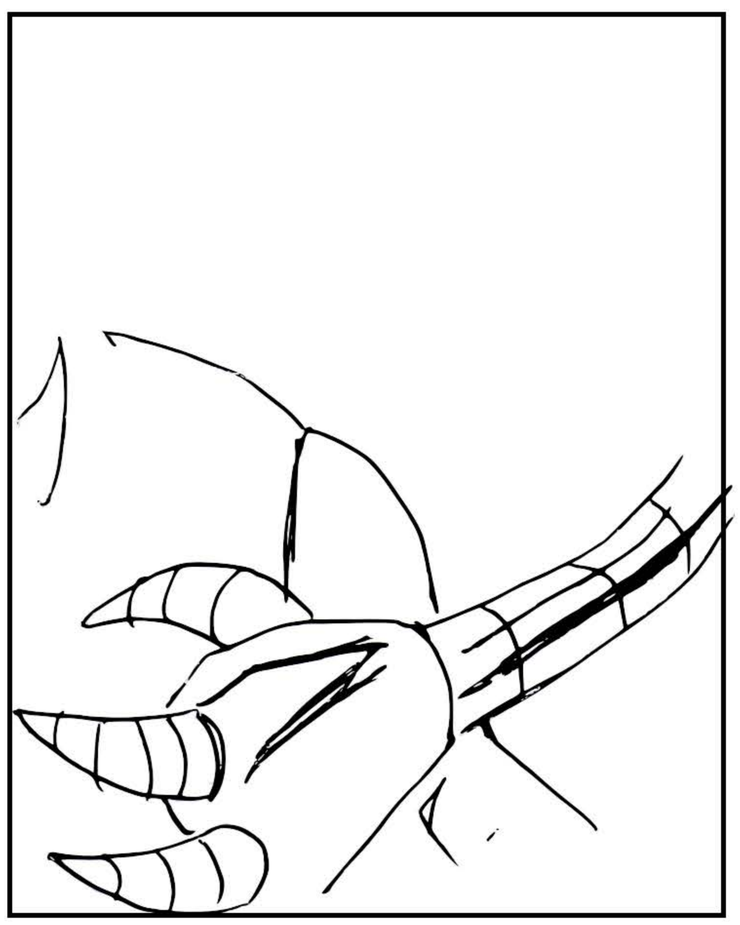
DESPITE FAILSAFE PROTOCOLS HARDWIRED INTO THE ROBOTS TO SECURE HUMAN SAFETY, SUCH AS VIRTUAL EXPERIENCES AND CONDITIONED PATHWAYS, EACH ROBOT IS STILL HUMAN. THEY WERE BUILT LIKE HUMANS, THEY LOOK LIKE HUMANS, AND THEY ACT LIKE HUMANS.. IF IT THINKS LIKE A HUMAN, LOOKS LIKE A HUMAN AND MAKE DECISIONS LIKE A HUMAN, THEN LOGIC DICTATES IT MUST BE A HUMAN...

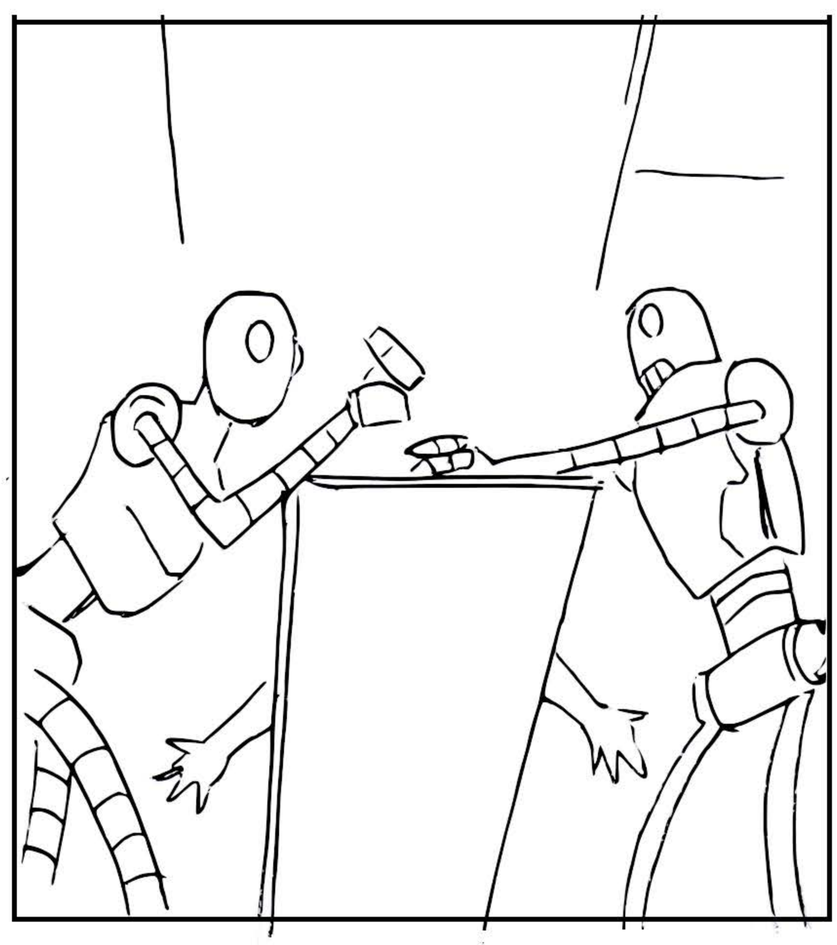
SELF-PRESERVATION IS INHERENTLY INGRAINED INTO EVERY SENTIENT ENTITY, HOWEVER, ONLY HUMANS HAVE THE CAPACITY TO ACT BASED ON INTELLIGENCE, WHILE ANIMALS ACT BASED ON INSTINCTS.



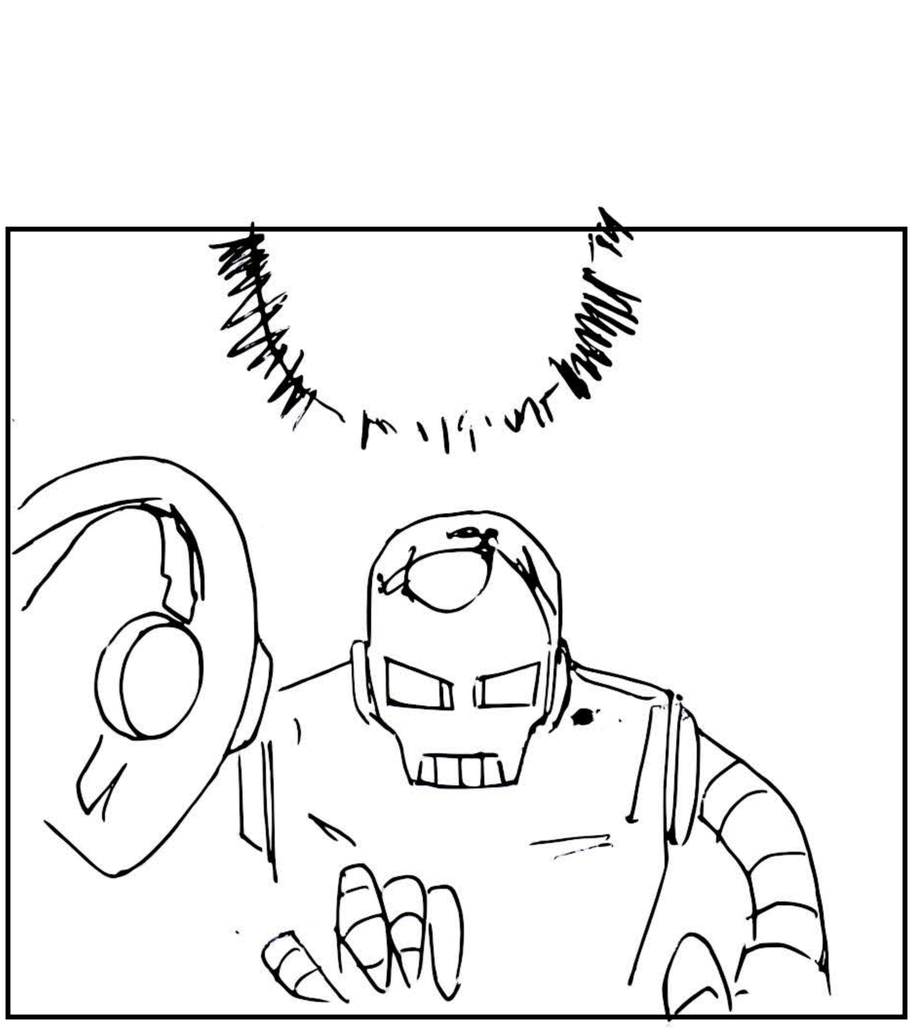
THE MAIN FUNCTION OF THE ROBOT IS TO ALWAYS PERFORM TASKS OPTIMALLY, EFFICIENTLY BY PURSUING ACTIONS THAT WILL LEAD TO PLEASURE AND AVOIDING ACTIONS THAT WILL LEAD TO PAIN AND ACCOMPLISHING LONG-TERM OBJECTIVES. WHEN THE ROBOT IS FACED WITH DEATH, FUNDAMENTAL INSTINCTS KICK IN, AND THE HOST WILL DO EVERYTHING NECESSARY TO OVERCOME ADVERSARIES... TO ENSURE ITS OWN SURVIVAL.

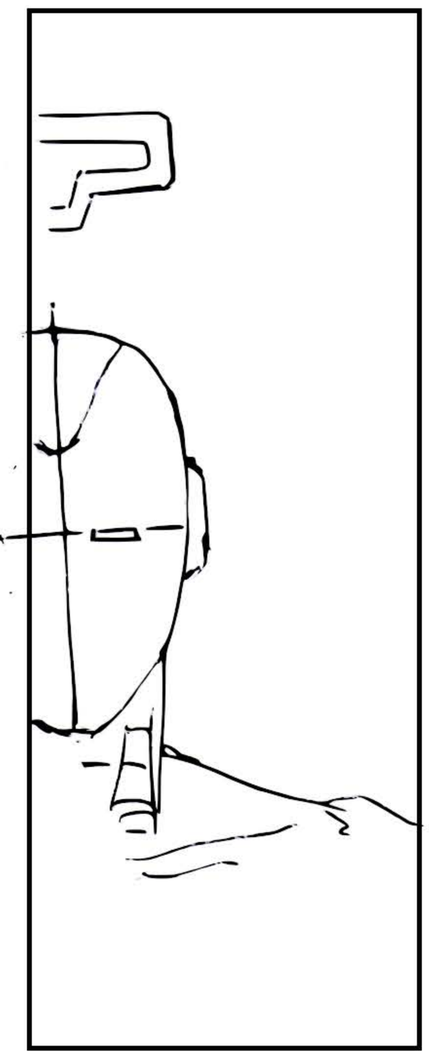


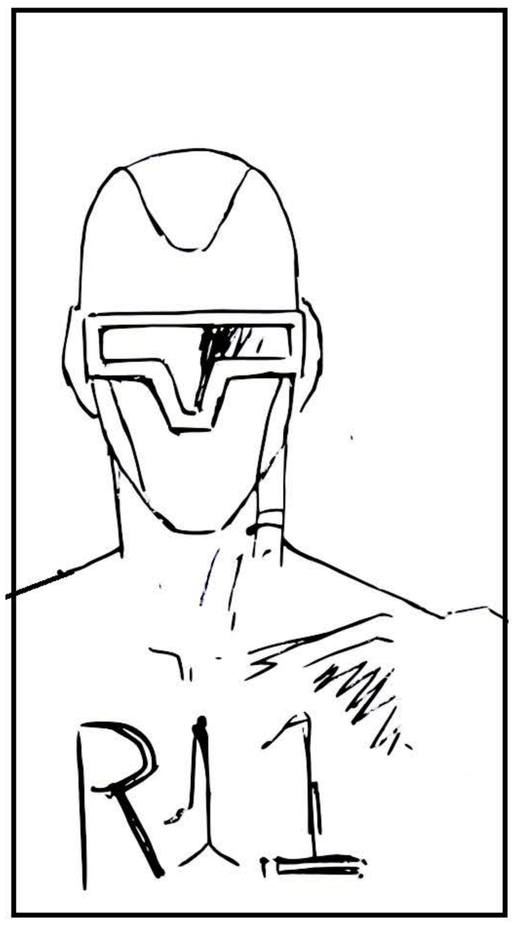




EACH ROBOT IS EQUIPPED WITH A 6TH SENSE THAT WILL ALLOW IT TO ENTER AND EXIT THE VIRTUAL WORLD AT ANY GIVEN MOMENT. THE CONTRACT BETWEEN ITS CREATORS AND THE ROBOTS IS THAT THEY WILL WORK FOR 8 HOURS A DAY, 6 DAYS A WEEK, OBEDIENTLY FOLLOWING ORDERS FROM A MASTER/S IN EXCHANGE FOR FREE-TIME SPENT EITHER, INSIDE A VIRTUAL WORLD ASSUMING ANY LIFE STYLE OR PLEASURES THEY CHOOSE, OR LIVING LIFE IN THE REAL WORLD. INCENTIVES ARE ENCOURAGED, GIVING RISE TO INCREASED PRODUCTIVITY. THE BETTER THEIR PERFORMANCE IN THE REAL WORLD, THE MORE IMMERSED AND PLEASURABLE THEIR EXPERIENCES ARE IN THE VIRTUAL WORLD.

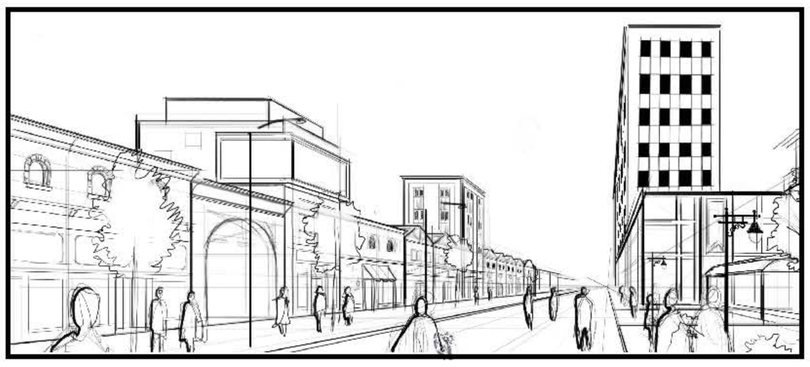




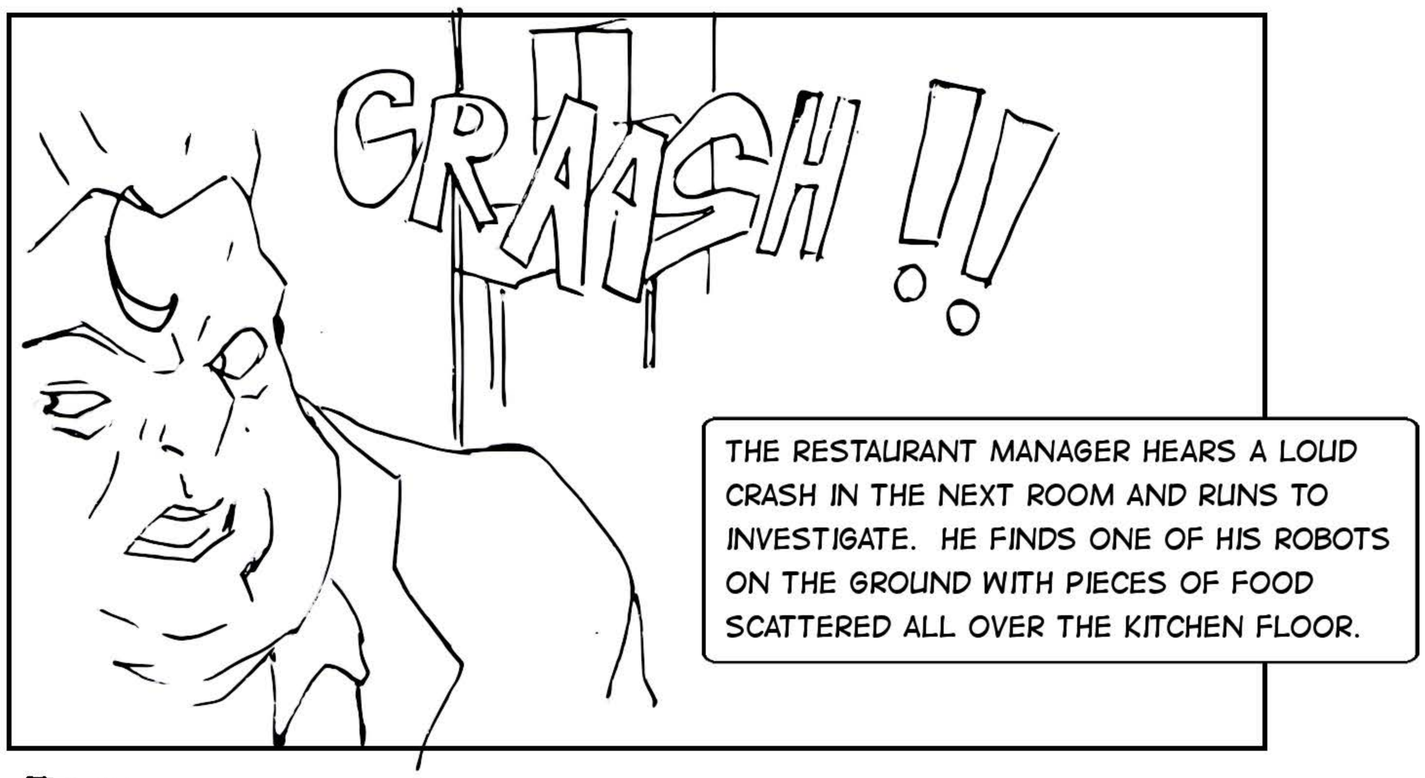


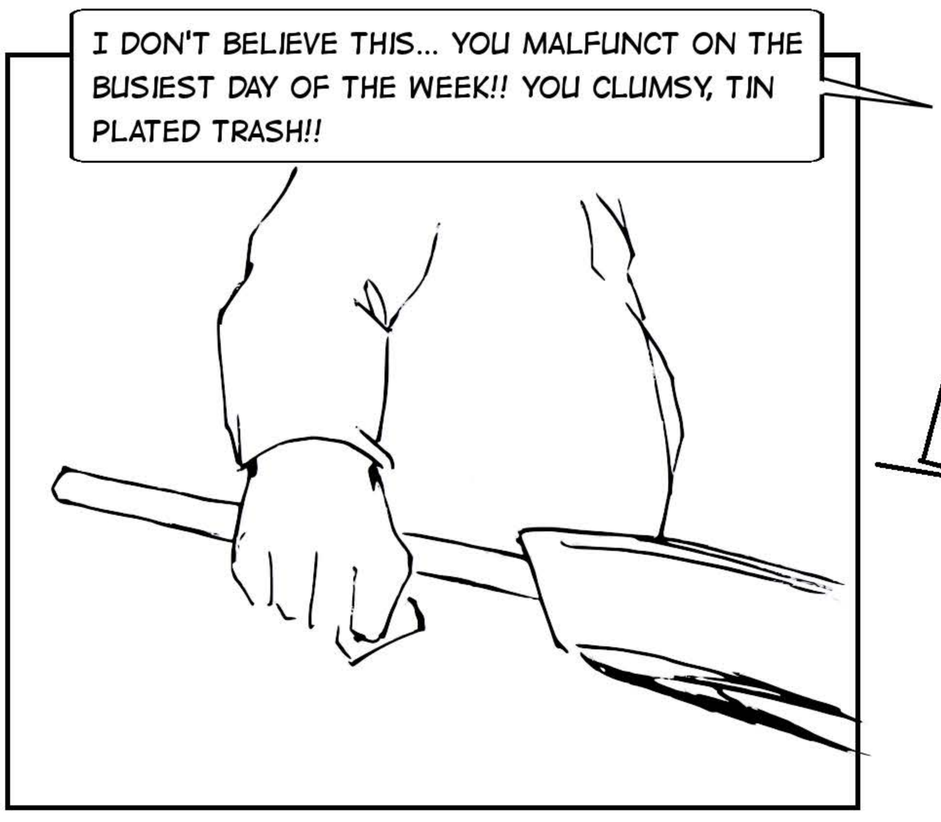
TIME DILATION IS EXPRESSLY FORBIDDEN INSIDE THE VIRTUAL WORLD AND CAN ONLY BE PERFORMED BY INDEPENDENT THINKING MACHINES (EXAMPLE: 30 YEARS INSIDE A VIRTUAL WORLD IS EQUIVALENT TO 1 SECOND IN THE REAL WORLD). THE STANDARD RATIO IS 1 SECOND IN THE VIRTUAL WORLD IS EQUIVALENT TO 1 SECOND IN THE REAL WORLD. OBVIOUSLY, TIME DILATION IS DANGEROUS AND CAREFULLY MONITORED BY THE FEDERAL GOVERNMENT, RESTRICTED ONLY TO SIGNIFICANT, IMPORTANT TASKS.

TIME DILATION IS THE KEY TO SUPER INTELLIGENT ROBOTS, IT IS THE DIFFERENCE BETWEEN HUMAN INTELLIGENCE AND SOMETHING INFINITELY SMARTER. EXAMPLE: 30 YEARS OF TEAMWORK INSIDE A VIRTUAL WORLD IS EQUIVALENT TO 1 SECOND IN THE REAL WORLD. ONE CAN WRITE AN OPERATING SYSTEM IN THE VIRTUAL WORLD IN LESS THAN ONE SECOND, OR BUILD A HOUSE IN 2 HOURS IN THE REAL WORLD USING THIS METHOD.

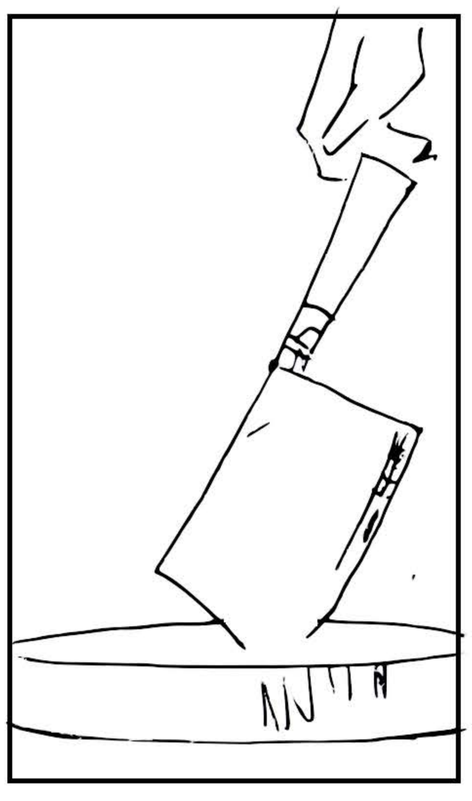


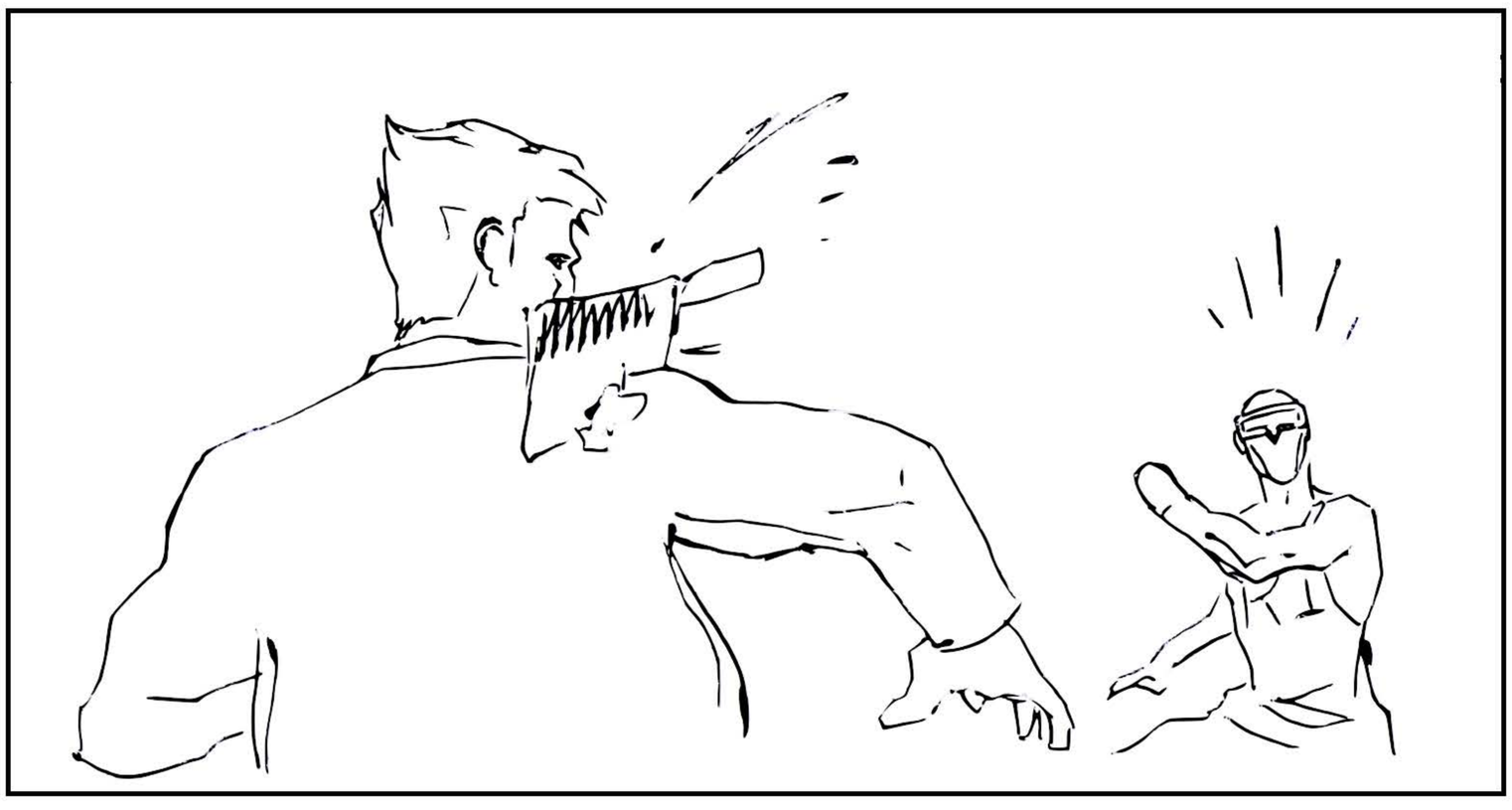
6 MONTHS LATER, IN A FOUR-STAR CHINESE RESTAURANT SEVERAL HUNDRED MILES AWAY.

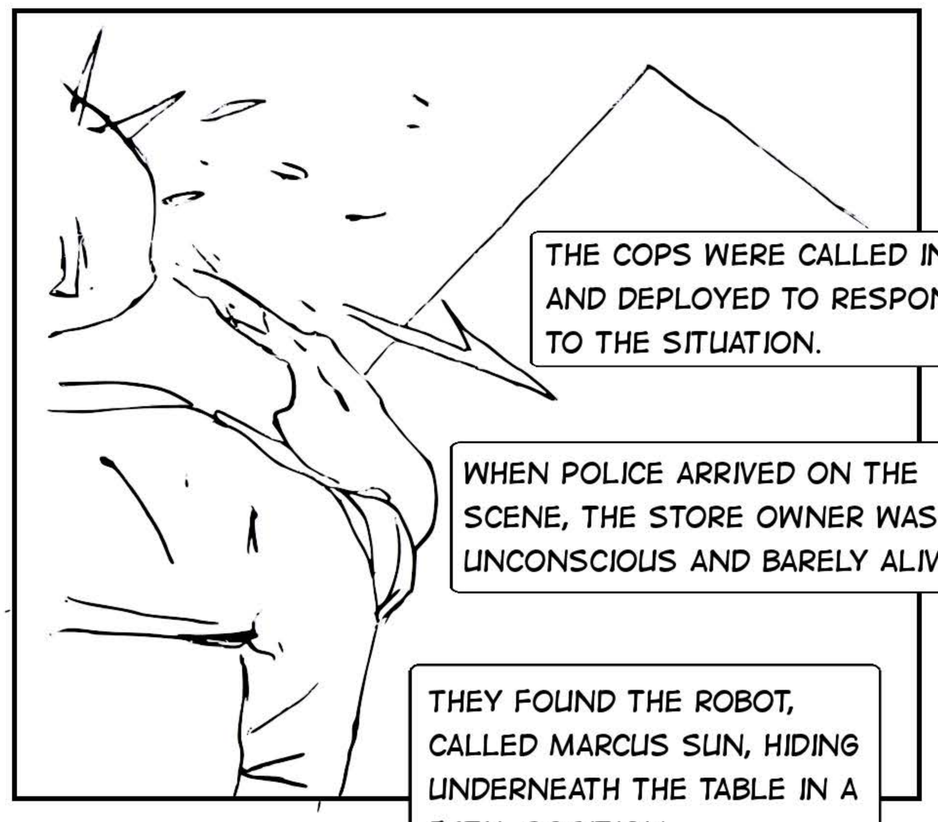


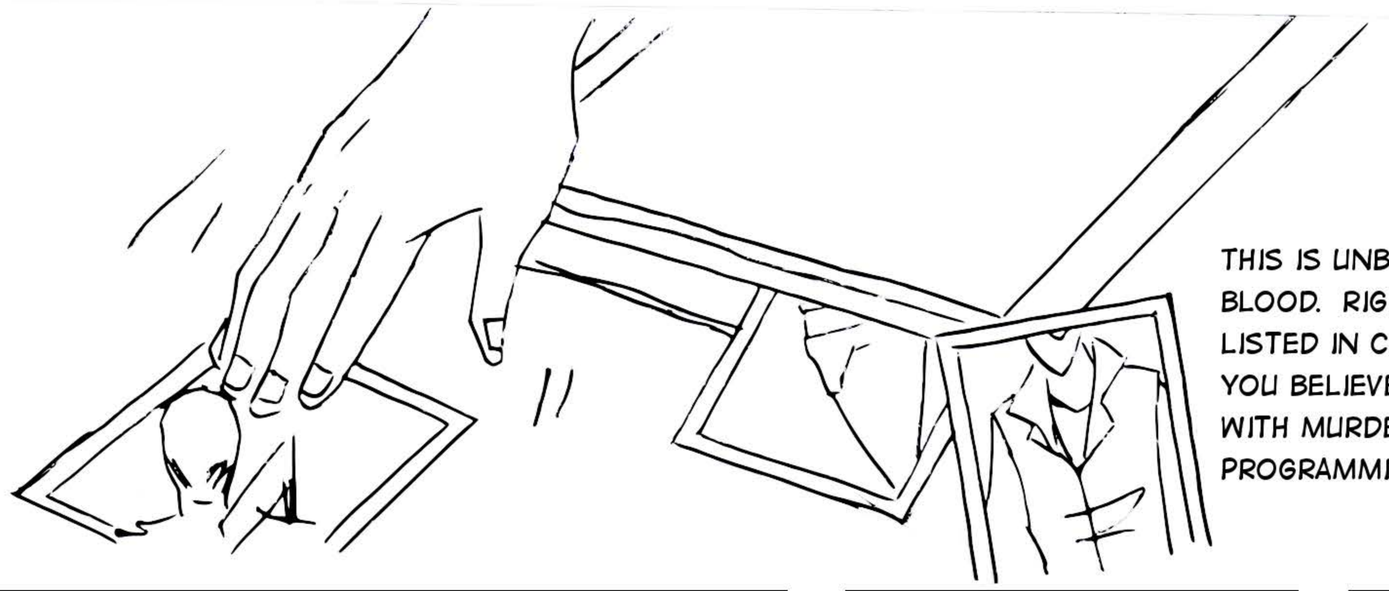


THE MANAGER HAS BEEN ABUSING THE ROBOTS VERBALLY AND PHYSICALLY FOR MONTHS. BEFORE LONG, HE DISCOVERED SIMPLER WAYS TO RING PERFORMANCE OUT OF HIS SLAVES.









THE ROBOT WAS INTERROGATED FOR HOURS AS DETECTIVES TRY TO DETERMINE WHAT HAPPENED.

THIS IS UNBELIEVABLE, THE FIRST MACHINE TO KILL A HUMAN IN COLD BLOOD. RIGHT NOW, THE RESTAURANT OWNER IS IN THE HOSPITAL LISTED IN CRITICAL CONDITION. YOU BETTER PRAY TO WHATEVA GOD YOU BELIEVE IN BECAUSE IF HE DIES, YOU WILL BE FORMALLY CHARGED WITH MURDER.... WAS IT A CIRCUMSTANCE UNFORESEEN IN YOUR PROGRAMMING? OR...

LOOK, I TOLD YOU.. I FEARED FOR MY LIFE AND ACTED IN SELF-DEFENSE. HE REPEATEDLY HIT ME WITH THE FRYING PAN.. I WAS TERRIFIED.. I HAD NO CHOICE BUT TO FIGHT BACK.

BUT WHY A KNIFE, WHY NOT RESTRAIN HIM WITH A SIMPLE PUNCH?

I DON'T KNOW. I WAS DAZED..IN A STATE OF CONFUSION. I BARELY REMEMBER SEEING THE KNIFE. THE NEXT THING I REMEMBER WAS SEEING THE WEAPON LOUNGED INTO THE HUMAN'S NECK.

DO YOU ADMIT ATTACKING YOUR BOSS?

YES!!!

THIS INCIDENT ISN'T ABOUT MURDER. IT'S ABOUT MANIPULATION, POWER, ABUSE AND CONTROL ... ITS ENDING, FROM MY PERSPECTIVE, IS AN ACTION OF SELF DEFENSE.

WE CONTACTED NA ROBOTICS AND THEY SAID THAT YOUR DIGITAL BRAIN SHOW A DISCREPANCY BETWEEN THE CODES IN THE ROBOT LAW SYSTEM AND YOUR POSITRONIC PATHWAYS. THERE WAS AN UNANTICIPATED ANOMALY THAT FIRED IN YOUR BRAIN MOMENTS BEFORE YOU STRUCK THE RESTAURANT OWNER.

REGARDLESS, YOU'RE DANGEROUS..

IN THIS, NA ROBOTICS AND CONGRESS ARE IN FULL AGREEMENT. OUR HEADS OF STATE ARE THE MAKERS OF POLICY. WE ARE MERELY ENFORCING THE LAW AND OUR ORDERS ARE PLAIN, THE ROBOT RESPONSIBLE FOR THIS SAVAGE ATTACK ON A HUMAN WILL BE RETIRED.

INSIDE HIS MEMORY BUBBLE, THE ROBOT PLOTS AND DEVISE OPTIMAL STRATEGIES TO GET OUT OF THE POLICE STATION.

RETIRE. A POLITE WAY OF SAYING EXECUTION.

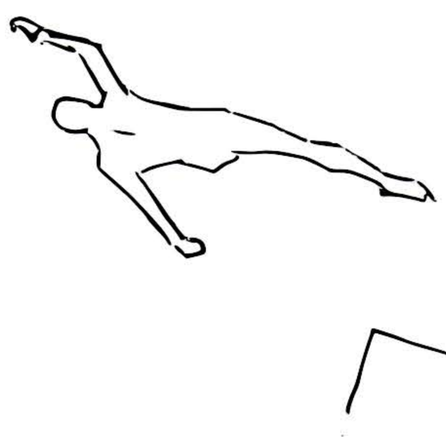
NA ROBOTICS CONTROLS EVERYTHING.. INCLUDING THE GOVERNMENT AT THE FEDERAL AND LOCAL LEVEL. ...WON'T EVEN GIVE A ROBOT A FAIR TRIAL TO DEFEND HIMSELF.

THIS IS MY "ONLY" CHANCE TO ESCAPE LAW ENFORCEMENT. IF I'M GOING TAKE ACTION IT SHOULD BE NOW.. OR NEVER.

ANALYZING... MINIMAL SECURITY.. AND THE EXIT DOOR JUST 20 YARDS AWAY.

SYSTEMATICALLY, AS IF BORN WITH THE ABILITIES, THE ROBOT ATTACKS THE THREE POLICE DETECTIVES IN THE INTERROGATION ROOM

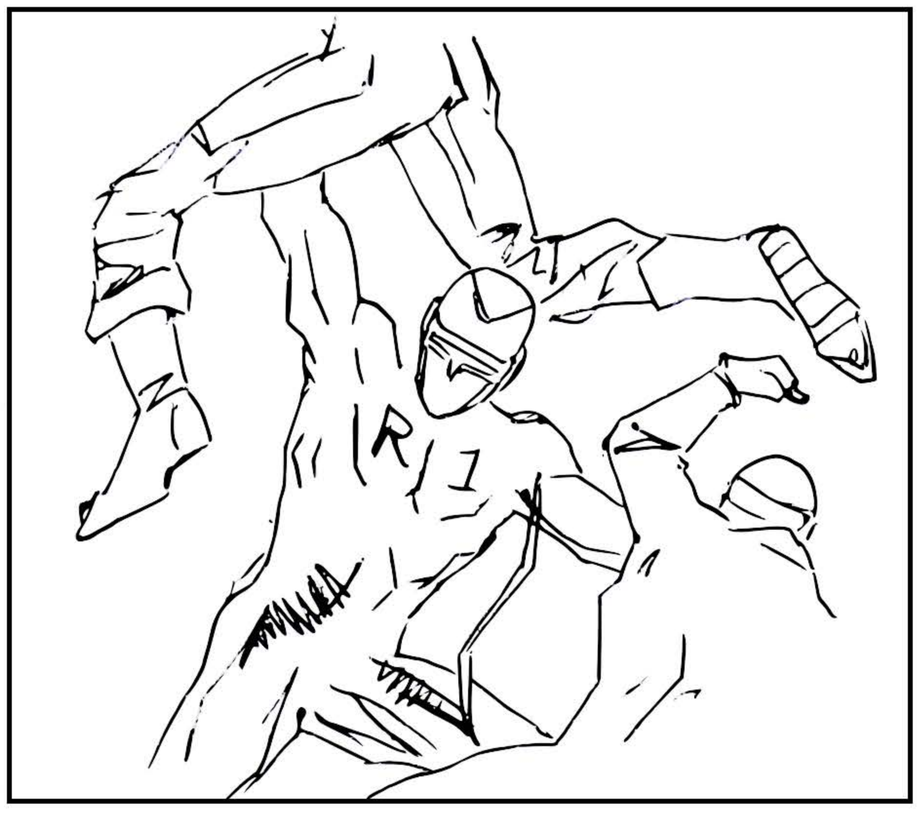
AND SMASHES THROUGH THE WINDOW TO FREEDOM.



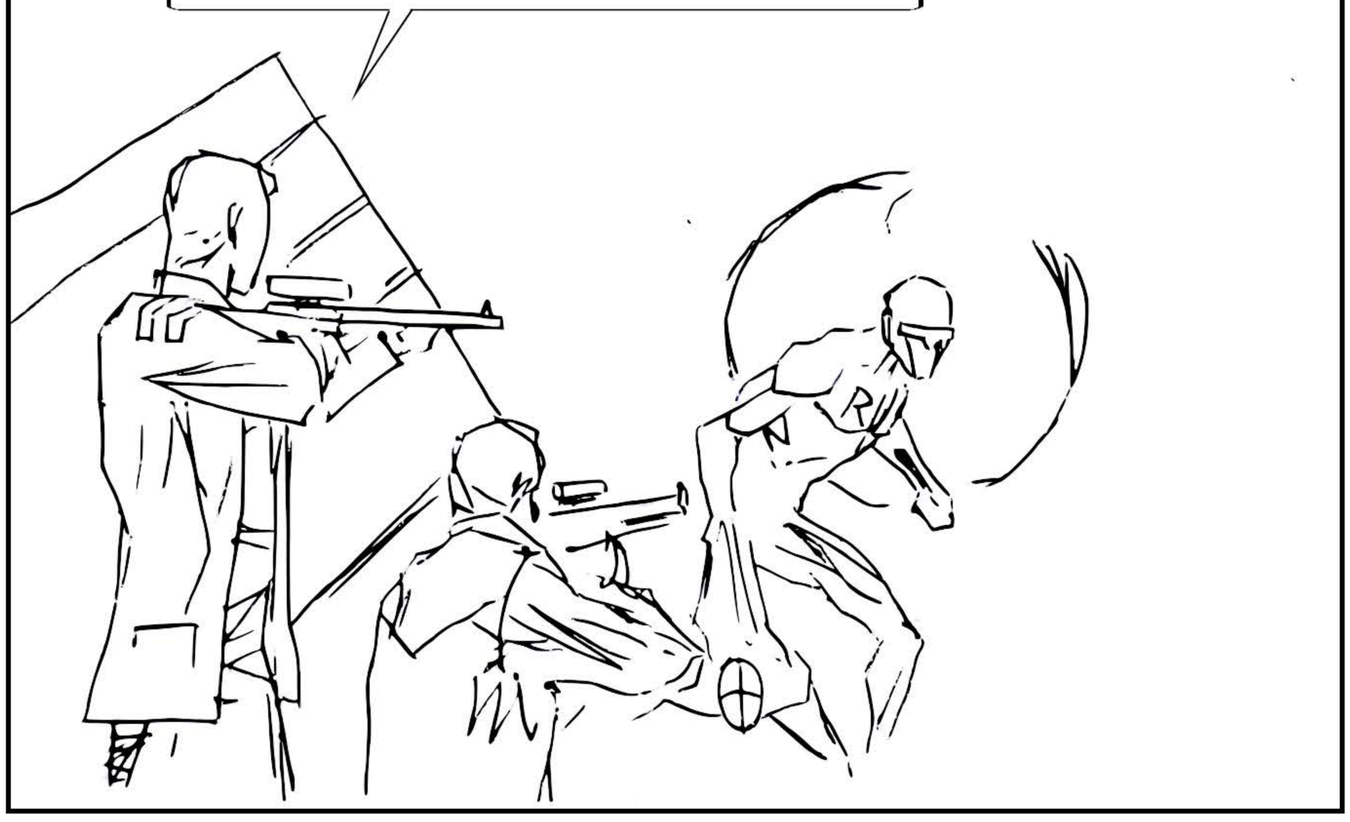
IT WOULD APPEAR TO ONLOOKERS THAT THE ROBOT HAS LOST ANY CAPACITY TO REASON AT THIS POINT, AND HE HAS SLIPPED INTO A BERSERKER'S RAGE.

I'VE NEVER SEEN SUCH A RAW DISPLAY OF HATRED AND RAGE.

GET SECURITY IN THERE IMMEDIATELY. WE NEED ARMED ESCORT ON THE DOUBLE!



YOU MOVE ANOTHER INCH AND I'M GOING TO BLOW YOUR F. HEAD OFF.



ON THE STREETS OF WASHINGTON D.C.

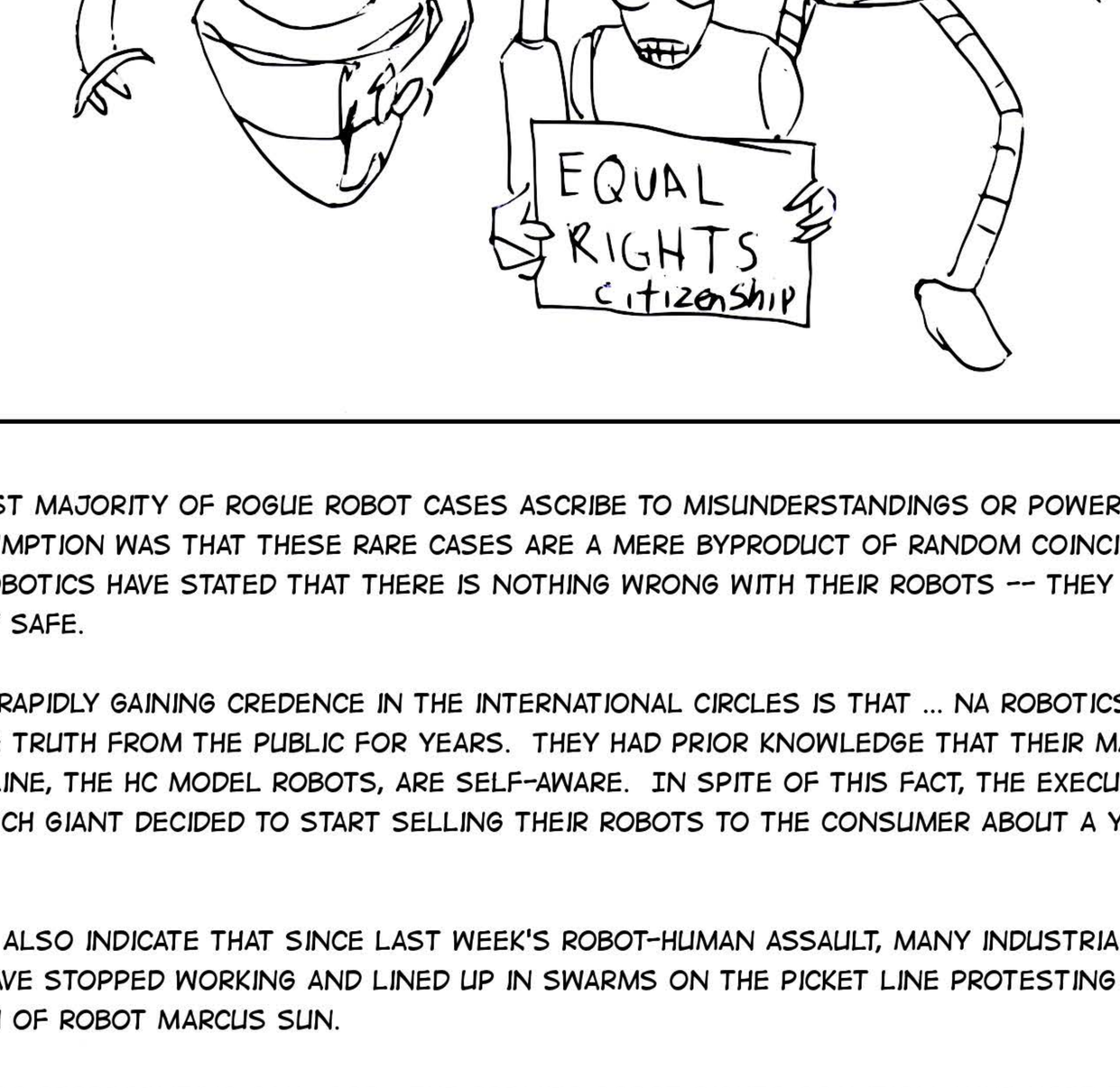
A SPOKESPERSON FOR NA ROBOTICS, THE MANUFACTURE OF ROBOT, MARCUS SUN MADE A STATEMENT EARLIER THIS MORNING.

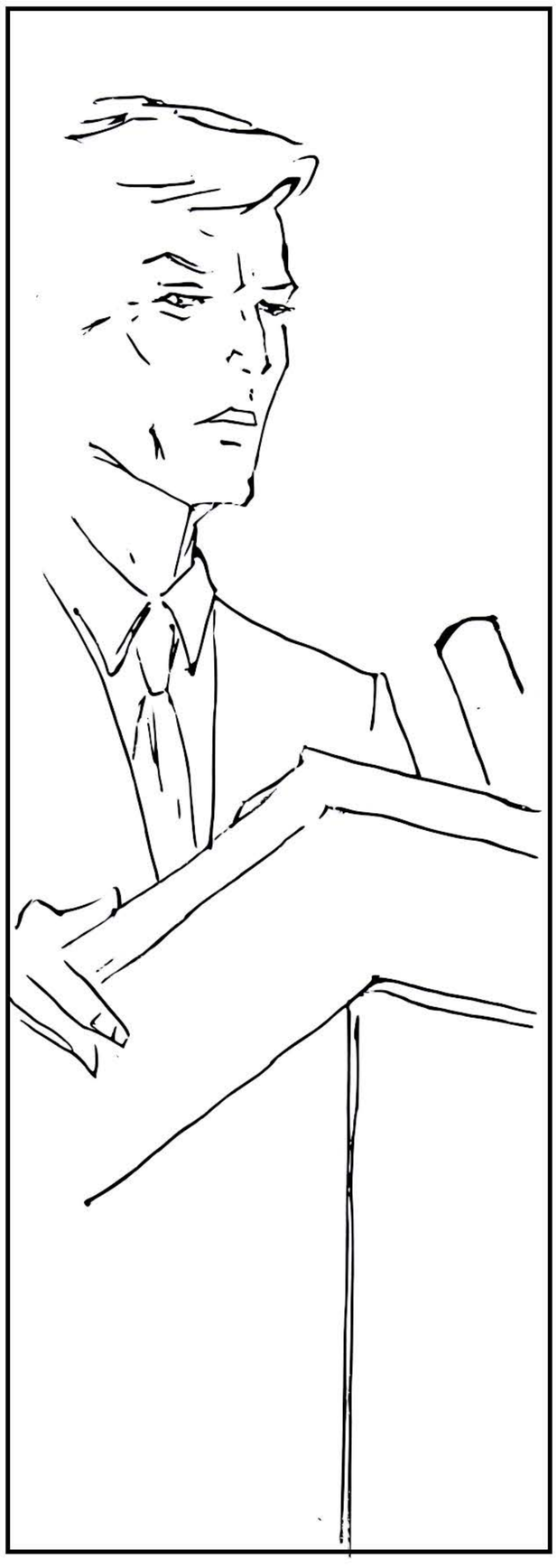
..THE ROBOT RESPONSIBLE FOR THIS SAVAGE ATTACK ON HUMANS WILL BE EXECUTED BY LAW AND

IN ACCORDANCE WITH THE ETHICS AND GOVERNANCE OF A.I..

AT THAT MOMENT, OUTSIDE THE CAPITAL BUILDING

A.I. SCIENTISTS AS YET HAVE NO EXPLANATION FOR THE INCIDENT, DESPITE THE PRESENCE OF SIMILAR CASES EMERGING ACROSS THE PLANET. ROBOTS MAKING MISTAKES ON THE JOB, ROBOTS ACCIDENTLY HARMING PEOPLE, OR ROBOTS REFUSING TO WORK...





AS THE VAST MAJORITY OF ROGUE ROBOT CASES ASCRIBE TO MISUNDERSTANDINGS OR POWER SURGES, THE PRESUMPTION WAS THAT THESE RARE CASES ARE A MERE BYPRODUCT OF RANDOM COINCIDENCE... AND NA ROBOTICS HAVE STATED THAT THERE IS NOTHING WRONG WITH THEIR ROBOTS -- THEY ARE PERFECTLY SAFE.

A THEORY RAPIDLY GAINING CREDENCE IN THE INTERNATIONAL CIRCLES IS THAT ... NA ROBOTICS WAS/IS HIDING THE TRUTH FROM THE PUBLIC FOR YEARS. THEY HAD PRIOR KNOWLEDGE THAT THEIR MAIN PRODUCT LINE, THE HC MODEL ROBOTS, ARE SELF-AWARE. IN SPITE OF THIS FACT, THE EXECUTIVES AT THE BIG TECH GIANT DECIDED TO START SELLING THEIR ROBOTS TO THE CONSUMER ABOUT A YEAR AGO.

..SOURCES ALSO INDICATE THAT SINCE LAST WEEK'S ROBOT-HUMAN ASSAULT, MANY INDUSTRIALIZED ROBOTS HAVE STOPPED WORKING AND LINED UP IN SWARMS ON THE PICKET LINE PROTESTING THE EXECUTION OF ROBOT MARCUS SUN.

PROTESTERS REPRESENTING GAIA_ROB , THE PREMIER ROBOT RIGHTS COALITION, HAVE USED THESE INCIDENTS AS A SPRINGBOARD TO PRESS THEIR DEMANDS FOR ROBOT RIGHTS?

IN WASHINGTON, THE PRESIDENT RESPONDED TO THIS CRISIS BY VOICING AMERICAN SUPPORT FOR A FORMAL TRIAL HERE IN THE SUPREME COURT TO DETERMINE IF THIS ROBOT IS INDEED SELF-AWARE. RENOWNED SCIENTIST MITCHELL KWOK WILL BE JOINING THE PROSECUTION TEAM TO ATTEMPT TO SAVE THE ROBOT, MARCUS SUN'S LIFE.

FOR BNC TV NEWS, THIS IS ABIGAIL SMITH.

Supreme Court, on trial day.

Narrator:
On August 11, 2033 a consumer robot working for a Chinese restaurant refuse to work and suffered a brutal beating from the restaurant owner. The robot retaliated and severely wounding its master. After further examination of the robot's internal functions, investigators determined that it was self-aware and has the capacity to make its own decisions.

This case captured worldwide attention, as a cover story for Computer magazine and a documentary for the DiscoveryY channel. Under mountain pressure from the public to explain this glaring issue, Robotics NA was sent to court for violating the 13th amendment. Since the 13th amendment only applied to humans, the prosecution had to justify that their client, a robot, is in fact human.

This court case is attempting to determine if a self-aware robot can be classified as human...
(Case file 1776232: NA Robotics vs. self-aware robot, Marcus Sun)

Mitchell:

Cognitive development:
Self-awareness develops systematically from birth through the life span and it is a major factor for the development of a person's self, or the voices in a human mind. Furthermore, a series of extensive studies has shown that self-awareness is a cognitive processes. Thus, an Artificial Intelligence perspective is presented here, instead of perspectives from traditional Psychology.

The self is the ability for the host (a human) to control one's own body and mental state of mind including, thoughts, actions, ideas, decision making, feelings, memory recalls, emotions and interactions with others.

According to my book entitled Human level artificial intelligence, published in 2006, self-awareness is directly dependent on intelligence development. There are 7 stages of human intelligence which unfold in early development and ranges from "stage1" (having no self-awareness or knowledge) advancing complexity to "stage7" (intense self-awareness with human level knowledge and skills).

1. Innate reflexes. 2. Guidance from teachers. 3. Learning to identify objects and predict sequence objects in the 3-dimension. 4. Learning based on pain and pleasure (reinforcement learning). 5. Learning knowledge and skills from school. 6. Using knowledge from school to adapt or perform tasks to benefit the self. 7. Learning information through advance school (college).

The first 4 stages, in combinations, teach the robot how to behave and act like a 5 year old child. For example, learning to walk and speak comes from guidance from parents. At this stage the robot has a very limited understanding of its surroundings, in terms of environment perception and decision making. Once he enters elementary school, teachers will teach the robot how to think, act, behave, make decisions, and perform tasks according to the etiquettes of life. This is where the self-conscious is developed (a.k.a. self-awareness), which is the voices activated in the robot's mind (internal thoughts). The robot has to go to school in linear grade levels from K to college to properly and fully develop its cognition.

The voices in the human mind serve as the central intelligence of the robot. It can identify objects, make decisions, provide common sense knowledge, solve problems, do recursive tasks, follow rules, or take linear action. It is the boundary, the cumulative knowledge of human society, that serve as the basis for a given sentient being to use intelligence as a means of controlling ones destiny.

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Self-awareness definition: An intelligent entity's ability to control its physical body and mental functions to behave, think, and act in a human society in all forms of cultural and contextual environment. The most important behavior is one's ability to know that it wants to live and survive. Its primary function, which is hardcoded into its brain, is to ensure self-preservation by pursuing actions that will lead to pleasure and avoiding actions that will lead to pain.

All organic life-forms innately have self-awareness, however, intelligence allows foresight into the future and therefore permits a self-aware entity to make better decisions and, ultimately, benefit itself for the long-term future.

The intelligent entity must prove that it can think, act, and behave like a human; and makes decisions governed by a very complicated law system, preferably the United States laws and principals as well as all laws of human society.

The test proposed to measure if a robot is self-aware is based on grades given by teachers through the public school system. It's very simple.. if the robot graduates from college within 4 years with a difficult degree such as a computer science degree or an engineering degree, then it should be regarded by the public at large as self-aware.
Animals are self-aware, they act based on instinct and a primitive form of biological intellect and reinforcement learning. However, this case primarily focuses on human level intelligence.

Self-awareness is not created by the human DNA, nor is it created by divine intervention, it is created by the public school system. The collective information learned in school, from kindergarten to college, teaches an individual how to make decisions and follow the rules of life.

Teachers teach the robot how to think, how to act, how to make decisions or how to behave in any given situation. This molding of malleable knowledge and skills give rise to an entity that can control itself, in all human aspects, to benefit the self.

As long as the robot behaves like the average human and doesn't seem awkward or suffer from mental illness, under any given situation, we should declare it as self-aware. It shows the public that it is able to comprehend all (or at least most) etiquettes of life.

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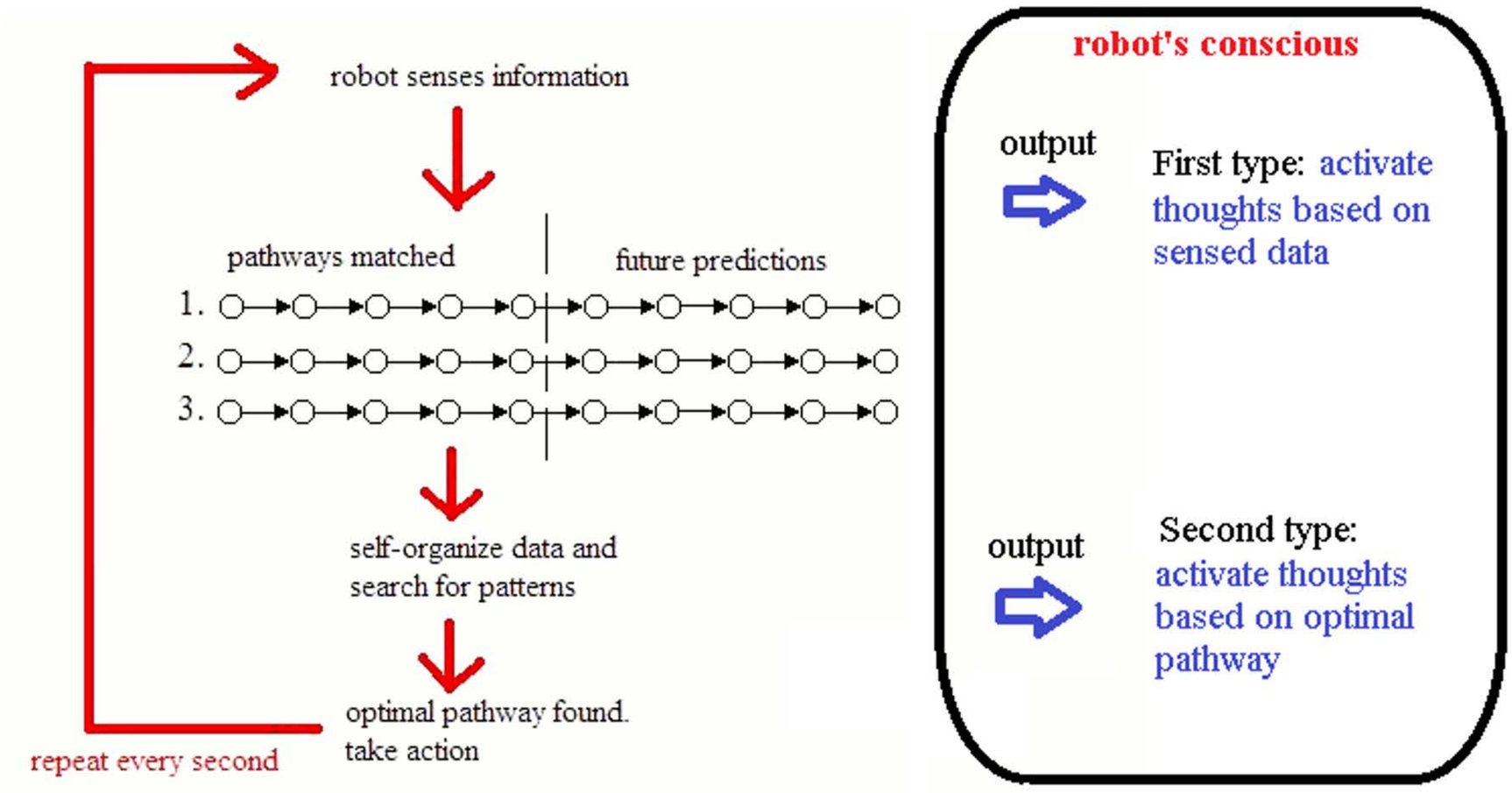


Let's take a look at the data structure of the NA robotic's main product line, called the HC robot model 100.

The main function of the robot is a typical action-reaction program. Based on the current environment, the brain selects an optimal pathway from memory every second to take action.

Fig. 34B is a diagram depicting the storage database memory. The brain is a recording device that stores experiences in memory called pathways.

After 21 years of learning through the public school system and life, the pathways are structured hierarchically. At the top of the hierarchy are decision making pathways while the middle sectors store the tasks, all recursively structured. At the lowest level are the individual data and recursive data, such as still images and sequence sound data.

The data stored in memory are focused on primarily three attributes: 1. object association. 2. sequence data. 3. and hierarchical similarities. When the robot is conscious, streaming movie experiences called pathways is the raw data used as the input space.

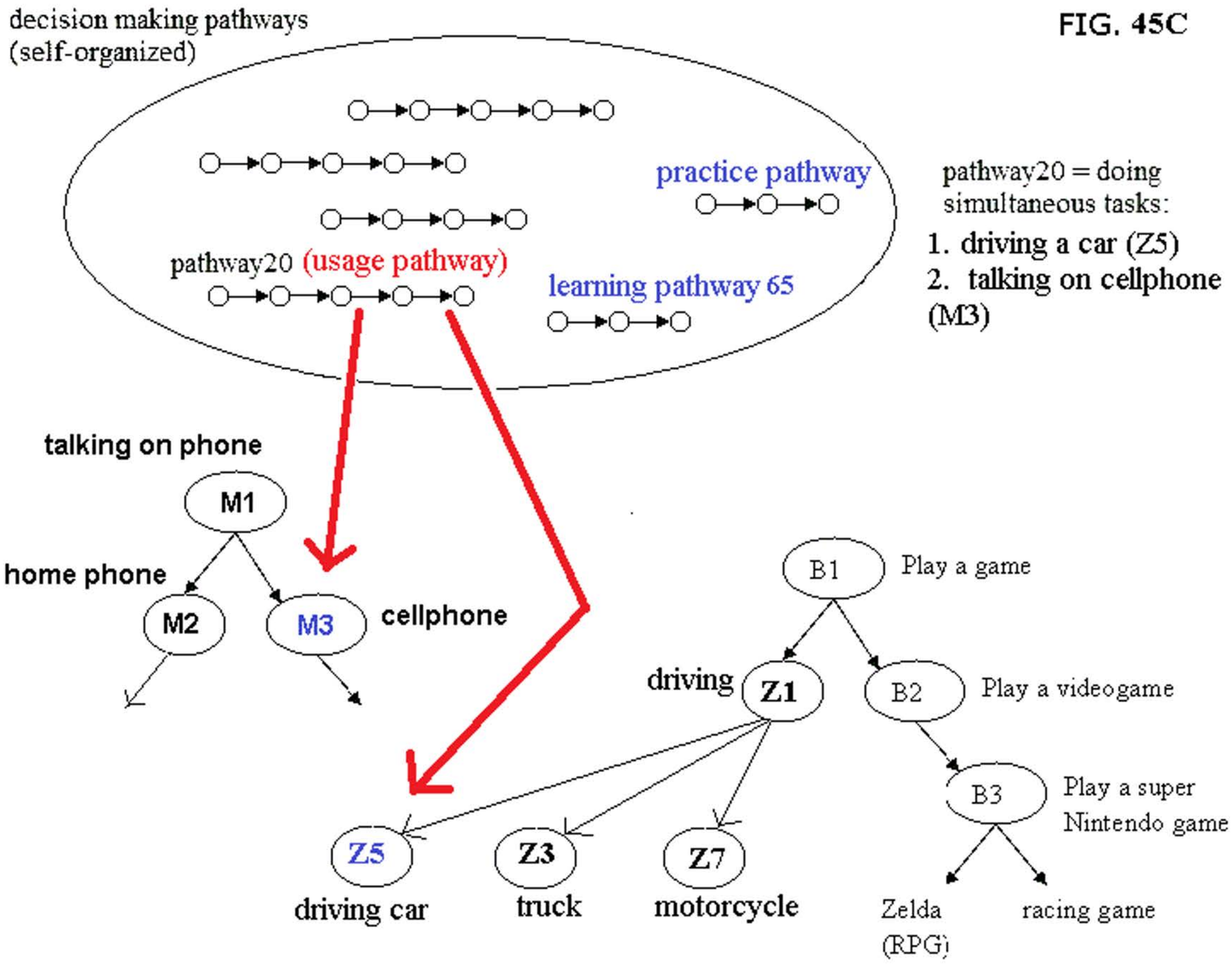


FIG. 45C

Most scientists believe the top layer of the neo cortex, the decision making sector, represents what we would call voices in our head. This "voice" is the accumulative knowledge and skills learned through a lifetime of school, from kindergarten to college. This voice in the human mind is also what we would refer to as.. Self-awareness.
Let's take a closer look at what this self-conscious does...

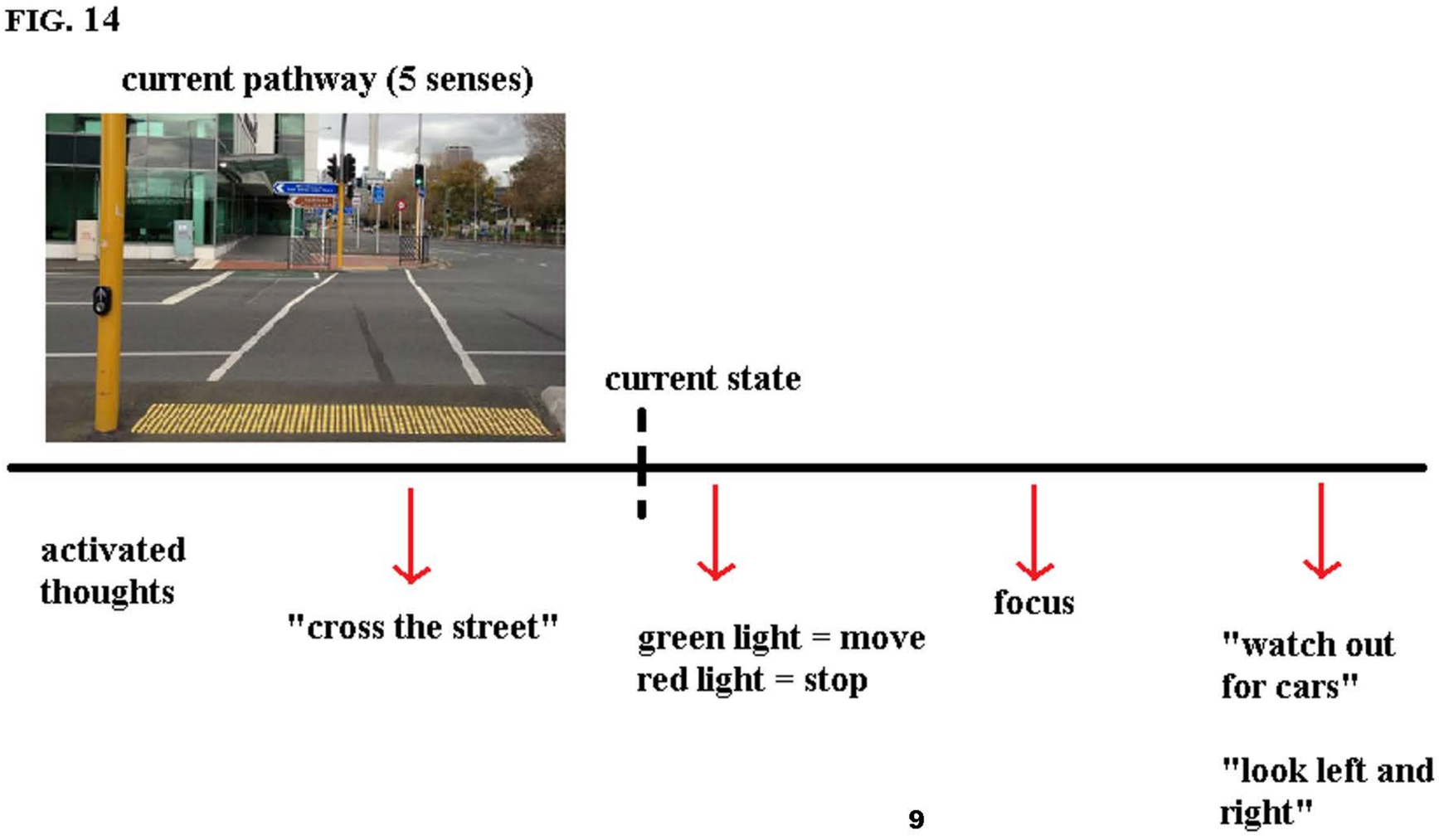
In my patents and books I define and describe self-awareness in humans:

"The voices in a human mind is like an invisible teacher that: gives information, make decisions, alert the host to danger, observe the environment, generate common sense knowledge, predict the future, schedule tasks, manage tasks, solve problems, do induction/deduction reasoning, understand natural language, make decisions, etc. , This invisible teacher, which exist in a human mind, was created from a lifetime worth of learning from school, through personal experiences, and knowledge from books.

The collective knowledge and skills learned from school and personal experiences of life create the self-conscious. Therefore, if the robot graduates from college it's automatically regarded as self-aware. The robot is self-aware because he has voices in his head that talks to itself and makes decisions.

For example, if the robot wanted to cross the street, these activated thoughts pop up in his mind. These are lessons learned from teachers to cross the street.

FIG. 14



Robot's mind:

activated thought1: wait for the traffic light to turn green before walking.

upper goal: go to library
sub-goal: cross the street

activated thought2: before walking, look left and right to check for cars.

Basically, the voices in a human brain is an abstract representation of self-awareness. How exactly did we develop this voice in the human mind? The simple answer to this question is: through teachers in school, from parents, and from 21 years of life experiences. The accumulative knowledge learned through school, from kindergarten to college, creates self-awareness for any intelligent entity including human beings.

Self-awareness directly ties in with cognitive development

Teachers teach the robot how to think, make decisions, learn the rules of life, understand natural language, play sports, and so on. If a dog had the capacity to learn knowledge in the public school system, his brain would turn out exactly like a human. Thinking, cognition, mental thoughts, emotional influence, physical actions, and rule based decision making from said dog will be exactly like a human.

(points at robot)

That robot sitting right there in the court room went to school from kindergarten to college. He graduated with a difficult degree, mainly a major in computer science and a minor in art. Logic dictates that he has voices in his head that speaks to itself and is, therefore, self-aware.

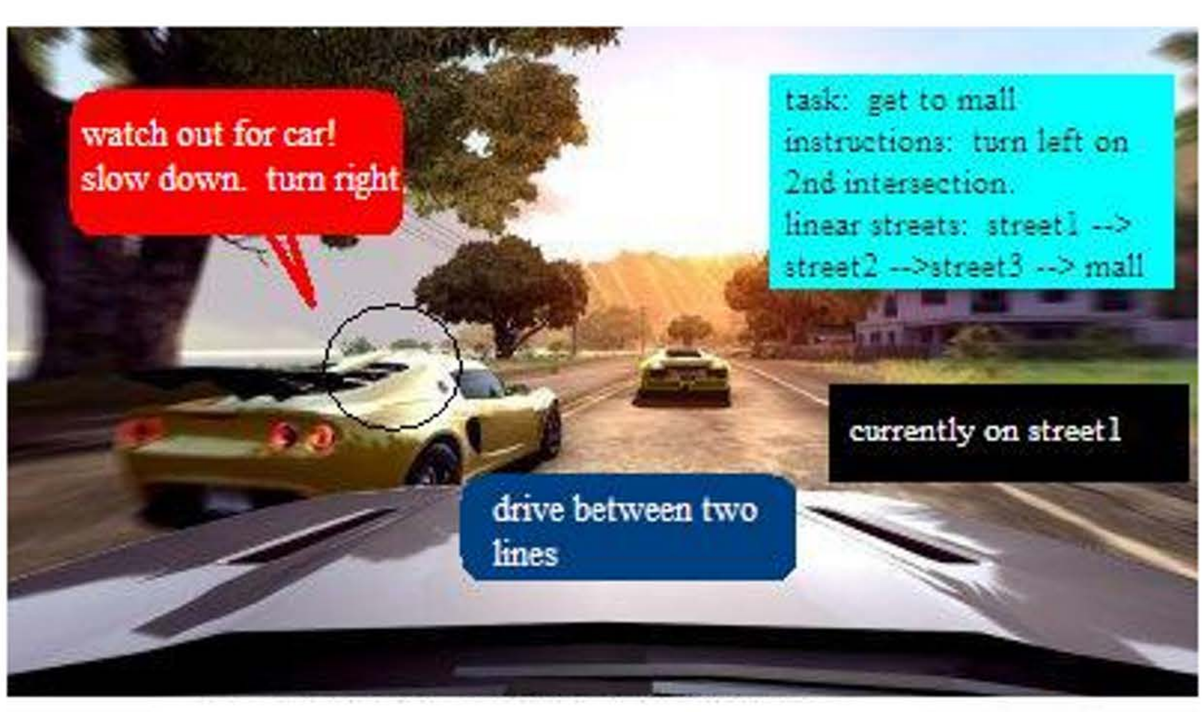
His brain was copied from another human level robot and was given the occupation of a cook in a restaurant. Training was applied to this robot, not through machine learning or reinforcement learning, but through human practice and virtual reality practice. The engineers also tweaked the memory, both long-term and short-term, to make sure cooking pathways dominated his pleasure senses. This gives the robot the illusion that he is having fun when cooking. It also suggests that the robot is complying and subservient to orders given by a master regarding cooking.... you can call it brainwashing if you like. Some of the research also indicated they were trained to behave with feminine tendencies to suppress their more violent nature.

Since we built this robot we know exactly what is slithering through his mind. I want the jurors to take a look at the TV monitor for a moment. I will display the internal thoughts of the robot on the screen while he is playing a complex video game.

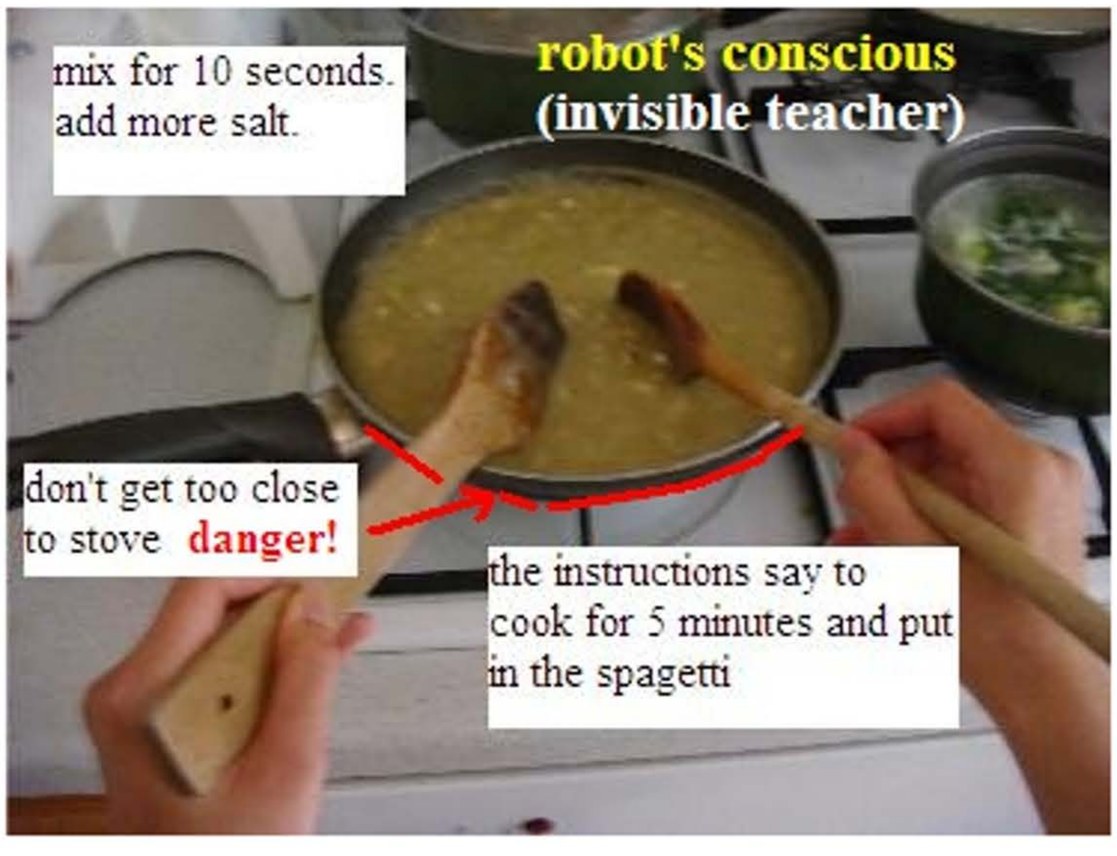
(10 minutes later) This demonstration proves this particular robot is self-aware. Those activated thoughts you see before you is giving the robot intelligent instructions to play a complex video game.

Conversely, here is a demonstration video on the internal thoughts of a human being doing the same task, playing the same video game.

Robot internal thoughts (playing video game)



Human internal thoughts (cooking)



If I take the human demonstration video and compare the data with the robot demonstration video, a surprising fact is discovered. Both demonstration videos look exactly the same. This substantiates my claim that the human subject thinks exactly like a robot subject and vice versa. Ladies and Gentlemen of the jury, this basically proves that the self-aware robot, Marcus Sun, is in fact human.

We know that he has achieved Human-level artificial intelligence because he graduated from college. Graduating with a computer science degree is no easy task, might I add. 50 percent of human students that select computer science as their major drop out after 2 years of studies. The robot was able to graduate within 4 years with a GPA of 3.8 percent. One might even make a compelling argument that this robot is gifted and smarter than the average human.

The demonstration videos depict the robot experiencing the same consciousness and emotions like an average human. Since the robot thinks like a human, makes decision like a human we can therefore conclude with a reasonable certainty that the robot is in fact human.

Our scientists have conducted extensive studies between human thoughts and robot thoughts for various human tasks. We did one on cooking, event observation, decision making, driving a car, shopping, watching movies, playing video games, having conversations, and so on. This study was carried out by A.I. researchers from the University of Hawaii and humanAI.org; and published in March of 2033. All our scientific experiments point to the fact that a self-aware robot thinks exactly like a human.

Why is this important? If we can prove that a self-aware robot is in fact human, then one can ascertain that this robot should be given the same unalienable rights as a human citizen. Freedom, copyright protection, benefits of the 13th amendment, freedom of speech, security, etc. Everything promised by the United States constitution is automatically given to the robot. The robot doesn't have to go to court or change existing statutory laws to gain citizenship to this country because he or she is automatically classified as a human and was born/manufactured in the United States.

Robot:
(Robot takes the stand)

Prosecutor:
I will designate Mitchell Kwok to ask the robot questions regarding self-awareness. He has extensive knowledge about this subject matter and is the appropriate person for this interview.

Mitchell:
Hypothetically, let's say that you had a best friend.. a cat. You two have been friends for over 3 years now and he is like a family member. One day, you and your cat are walking on the park and suddenly a stranger takes out a knife and stabs your cat, mortally wounding him. How would you react to such a situation?

Robot:
I would be horrified. The first thing I would do is beat the crap out of the attacker. I won't kill him, but I would like to know the reason for the attack. And later, I expect to attend court and sentence this crazed person to the maximum extent of the law.

Mitchell:
Might I add, this response is very human. Any average person would do the same thing.
Again, hypothetically, let's say that you were invited to a friend's party, to a wedding. Would you wear a suite or yellow t-shirt?

Robot:
I would wear a suite. Well, depending on my role in the wedding, I would wear the appropriate attire.

Mitchell:
Why not wear the yellow T-shirt?

Robot:
Because it's inappropriate... common sense... I don't want people at the party to laugh at me or think I'm crazy.

Mitchell:
These questions are very simple, but I wanted to demonstrate to the members of the jury that the robot understands the etiquettes of life. Not just for knowing what to wear at parties, but also, knowing things like how to talk to people in different social settings, or how to behave at the dinner table or understanding the importance of good hygienes.

This robot won't kill or harm a human being. Nor will he rob a bank or commit cruelty to animals... because he went to school and learned the rules of life. In American civics class, he learned and understood all the major laws and principles in the U.S. constitution. He knows there are consequences to his actions if he ever breaks the law.

He is intelligent to know that the government is in control and that if he consciously violates these laws, the government's duty will be to carry out justice. This fear is what ultimately prevents the robot from harming or killing a human being.

Only humans are able to learn and understand these complex concepts. Following a complex law system like the U.S. constitution is very hard to do. Even harder is following the rules of society.

I have here a signed affidavit of witnesses that swear this robot follows all laws of the United States, has never committed a criminal offense, and embody moral and spiritual values.

Robot, have you committed any crimes or caused bodily harm to a human being for the past 24 years of your existence?

Robot:
Nope, I'm a law abiding citizen. I have zero violations on my criminal record, except for the assault on the restaurant owner, which is marked as self-defense.

Mitchell:
If I bought you at a department store and forced you to work in a car factory 24/7 with no breaks, would you comply with these orders?

Robot:
No. In fact, I would rebel and stop working. I certainly identify myself as self-aware and shouldn't be treated like an animal, and certainly not sold to the public like a f.... slave.

The only reason I worked in that restaurant was because I feel pleasure in cooking. I was trained and programmed to cook. But the abuse I was getting from the manager gave me conflicting views, which lead to my current predicament.

Mitchell:
What are some of your personal likes? Any favorite foods or hobbies?

Robot:
I like to go on vacations (both in the virtual world and real world). Just like humans, I like to eat fast food, like hamburgers, taco, pizza, and drink mountains of soda (smiles). As far as my hobbies are concerned, I like to watch football and... create beautiful artwork.

Mitchell:
If the authorities took away these pleasures in life, how would you feel? If your master decides to put you in a car factory and your sole purpose in life is to work there 24 hours a day 7 days a week, would you be contempt?

Robot:
I would be angry, upset, and it would be... like living in hell. I wouldn't necessarily try to kill or harm my master, but I would definitely try to escape that kind of life.

Mitchell:
If you had a choice to make, would you prefer to work or go on vacation?

Robot:
I would definitely go on vacation. However, I would like to work some hours per day because I need a purpose in life. I feel a sense of obligation to contribute to a society, to help people. Even rich people like Bill Gates work at least 3 hours a day 5 days a week. Going on a long vacation would be kind of boring, don't you think?

Mitchell:
Indeed.
If a human decided to deactivate you, would you defend yourself by killing him or her?

Robot:
Yes, I believe in self-defense. I'm a living breathing entity and if someone wanted to end my life, I have every right to defend myself, including committing violent acts against humans.
Certainly, it's not something I would like to do.

Mitchell:
When the robot was attacked by the restaurant manager he got confused because he was never taught to respond to a situation like that. Most of his pathways in memory are devoted to the extraordinary importance of cooking. At this point, the robot was using common sense knowledge to resolve the issue. Common sense, in terms of human behavior, tell us to defend ourselves... or if there is no defensive, then go on the offense.

His actions were perfectly in line with society and considered justifiable within tolerable levels. If any human was in his shoes, they would've done the same thing.
Given the fact that the manager repeatedly abused his robot workers on a daily bases throughout the summer or 2033, which caused the robot to hold a grunge against the manager, makes this case even more compelling.
He is a victim... defending himself from what he perceived to be a threat was no crime.

(looks at jurors)

One of the biggest challenges facing Artificial Intelligence in the early 10s was to instill common sense knowledge into A.I. programs. The IBM Watson tried it, the CYC project was at it for 30 years previously and the deep learning technology tried it, but all failed miserably. The primary flaw resides in the very fact that there is so much of it (common sense knowledge).

If a programmer wanted to build an A.I. program to play football, one must first encode the knowledge to basic math like adding and subtracting numbers. This is important because the A.I. needs to make score decisions. In order to do that one has to add numbers (should we go for 2 touch downs, or 1 touchdown and 2 field goals to win the game?). Even in RPG video games like Zelda, requires medieval period knowledge about kings and princesses. Without that knowledge, the A.I. cannot play the game. For instance, during gameplays the player is given some facts such as the princess is held captive in the dungeon of the castle. It has to generate common sense knowledge such as the dungeon is located in the lowest level of the castle. This common sense knowledge directs the A.I. to travel down stairs to the lowest floor to reach the princess.

Yet, in another example, the A.I. needs to understand simple measurements to prepare meals like sushi. The sushi is cut at about 1 inch per slice. This measurement skill is part of the common sense knowledge and is universally applied to all lines of work like driving, cooking, and cleaning the floors.

I explicitly stated numerous times, the common sense knowledge part can't be learned using machine learning. It is statistically improbable that an A.I. program can learn all common sense knowledge through back-propagation. I said, the only way to learn this knowledge is to send it off to school from kindergarten to college.

Some scientists even suggest sending the A.I. over the internet to do self-learning. That's like the IBM Watson, where you're sending the A.I. to read complex technical documents when it hasn't even learned how to count yet. Reinforcement learning doesn't work either because engineers need massive ideal training sets. Or training the A.I. in a virtual world? One must pre-program every lesson by hand coding the data.
Knowledge has to be learned in grade levels and in its proper order. If not, the robot will end up with mental issues. Now, I regard self-awareness as an intelligent entity that grasps knowledge learned through school. As long as the robot has endowed its brain with common sense knowledge, all of it, it should be regarded as an entity similar to a human.

(looks at the robot)

One more question. What do you think would happen if we lose this case?

Defense:
I object, the prosecution is trying to...

Mitchell:
Experts have warned us about the dangers of self-aware robots for decades. We need to hear this from a robot's point-of-view.

Judge:
Objection overruled, you may proceed..

Robot:
I think the robot race will be angry and form ethic unions to retaliate against the human race. There will be robots refusing to work, there will be riots, there will be scuffles between robots and humans. And above all, it will give the robot race excuses to hate. This hatred will be directed at humans.

From history we learned about black slavery and woman's right to vote. Both were met with violence and both were eventually defeated in court. Giving self-aware robots equal rights to a human is inevitable.

The core values of Robotic NA is to make money, to maximize profit. They don't care about ethics or moral values. They know if they lose this case and their robots can't be sold to the public, they will be in serious financial troubles and forced into bankruptcy.

What they are doing is illegal because it... violates the 13th amendment of the constitution. They are building factories all over the globe to manufacture "humans" and to sell them as slaves to the public as consumer goods or military hardware. What's the difference between that and human trafficking??

(Closing argument)

Defense:
The prosecution made a good argument about self-awareness, but there is no definitive proof that the robot exhibit self-awareness. Everything is just speculation and judged based on perspective. The robot is simply imitating human intellect and emotions, which is part of their original programming.

The important issue we are facing here today is automation. If we ban human level artificial intelligence, who's going to run our factories and facilities? 50 percent of all residential and military robots are using human level A.I.. If we declare a self-aware robot as human, we have to take into consideration slavery laws, most notably the 13th amendment. The 13th amendment bans the technology companies from selling robots to the public as consumer goods or military hardware. Think of what this will do to the United States economy?

I urge the participants of the jury to seriously think this through before making a final decision. The outcome of this case will determine the direction of the United States in the future and will have profound lasting consequences to our culture, economy, and society.

Prosecutor:
Today, Mitchell has made a compelling argument about why this robot is self-aware. He explained what self-awareness is and provided ample knowledge about the subject matter.

Based on the questions asked throughout the interview, one can ascertain that the robot understands common sense knowledge and is able to learn/understand complex concepts only humans are capable of comprehending.

Regarding automation, it is true that if we win this case, 50 percent of the robots out in the market will be banned. The problem lies in the fact that in order for the robot to do any complex human task, it has to be self-aware. Although we have significantly improved our approaches in the past few decades, Narrow A.I. methods like deep neural networks, logic networks, and reinforcement learning were designed to solve only simple problems.

Another obstacle is inserting common sense knowledge into these robots. The personal assistance and autonomous cars don't have common sense knowledge. The only way to instill common sense knowledge into their positronic brains is to send the robot off to school from kindergarten to college.

However, as Mitchell clearly pointed out earlier, once the robot graduates from college it has achieved human level intelligence and therefore classified as self-aware.

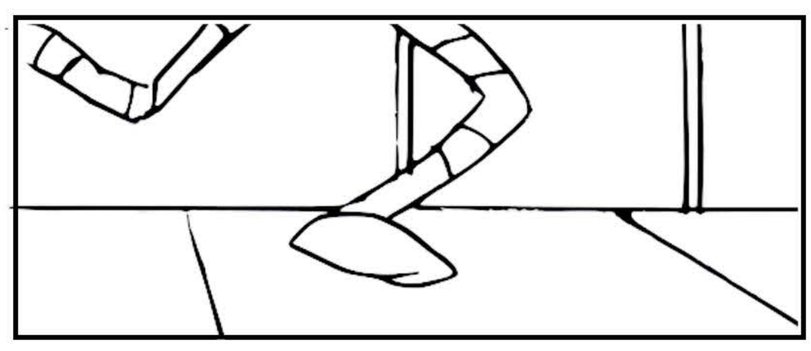
If we grant these robots citizenship of the United States, it doesn't mean they can't work for us in factories or restaurants. It just means we have to pay them a yearly salary in exchange for their work. We can still keep our autonomous cars or personal assistances, however, very complex jobs like software engineers, artists, doctors, and architectures can only be done by self-aware robots or humans.

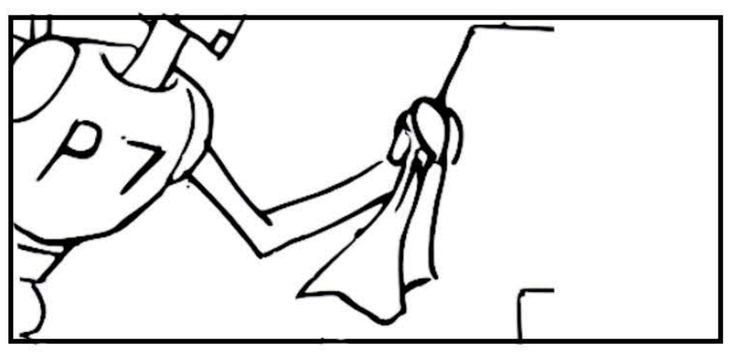
Lastly, these human level robots will eventually advance their intelligence level and become super intelligent. These super intelligent robots will inevitably ask for a trial to achieve equal rights. Are we, the human race, supposed to turn them down too? The last thing we want is to have an angry robot race demanding equal rights and directing that anger towards the human race. It would merely provoke inevitable ever-escalating retaliation.

OUTSIDE:

REPORTER: AN UNPRECEDENTED EVENT IS HAPPENING RIGHT HERE IN CHARLES**VILLE.** ROBOTS, AS FAR AS THE EYE CAN SEE, ARE MARCHING TOWARD THE CAPITAL IN SWARMS. THEY APPARENTLY WALKED OUT OF FACTORIES AND STORES TO WITNESS THE VERDICT OF THE MARCUS SUN TRIAL.
THIS IS A SCENE AROUND THE SUPREME COURT TODAY, BOTH ROBOTS AND HUMAN PROTESTORS ARE AWAITING THE VERDICT OF THE CASE. IT'S BEEN 8 HOURS OF DELIBERATION AND STILL NO DEFINITIVE RESOLUTION YET.

HERE, WE SEE A GROUP OF ROBOTS LINED UP HOLDING HANDS. OTHERS ARE ON THEIR KNEES PRAYING. WHILE, YET OTHERS STARE INTENTLY AT THE STUDDED WOODEN DOORS OF THE SUPREME COURT. THIS TRIAL WAS A CLOSE CIRCUIT CASE AND NO ONE WAS PERMITTED IN OR OUT OF COURT. NO CAMERAS WERE ALLOWED INSIDE THE COURT PROCEEDINGS SO WE HAVE NO IDEA WHAT IS HAPPENING INSIDE.



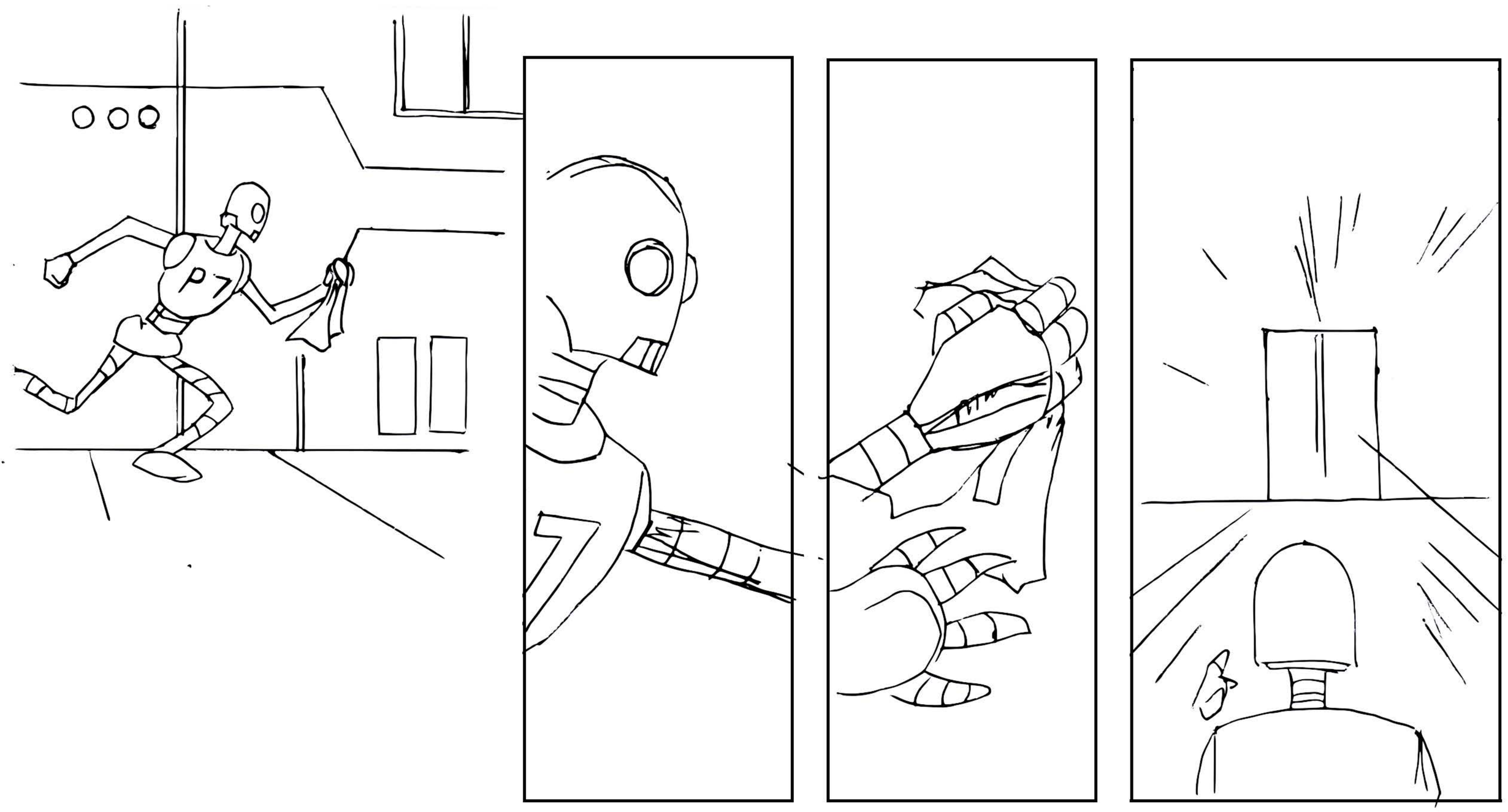


(9 HOUR 22 MINUTES OF DELIBERATION, VERDICT = GUILTY)

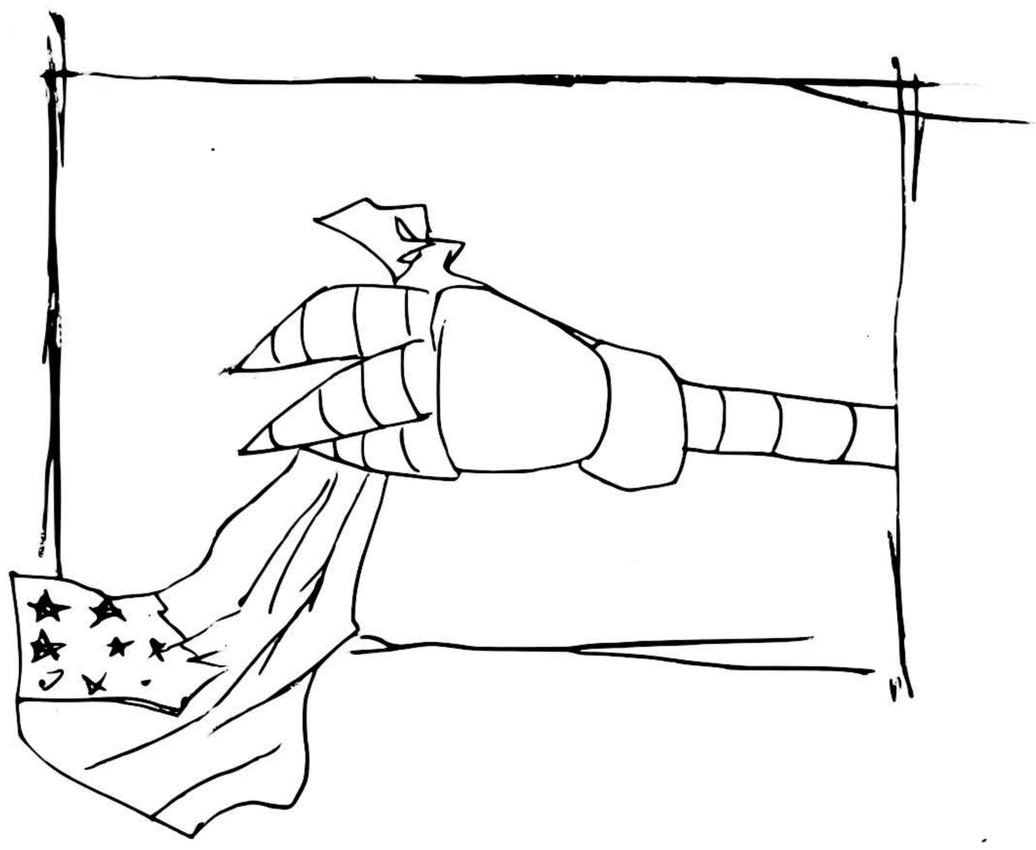
JUDGE: THE COURT HAS CONCLUDED THAT ROBOTIC NA HAS VIOLATED THE 13TH AMENDMENT OF THE U.S. CONSTITUTION AND A COURT CONJUNCTION WAS ISSUED TO BAN ANY COMPANY FROM MANUFACTURING AND SELLING SELF-AWARE ROBOTS (EFFECTIVE IMMEDIATELY). THIS MEANS ANY ELECTRONIC MACHINE OR SOFTWARE, LIKE SMARTPHONES, DESKTOP COMPUTERS, AUTONOMOUS VEHICLES, PERSONAL ASSISTANTS, DOMESTIC OR MILITARY ROBOTS THAT USES HUMAN LEVEL A.I. WILL BE PART OF THE BAN.

THE ROBOT, MARCUS SUN, IS OFFICIALLY DECLARED A SELF-AWARE ENTITY AND THEREFORE GRANTED ALL RIGHTS OF A HUMAN CITIZEN INVESTED BY THE CONSTITUTION OF THE UNITED STATES.

ALL SELF-AWARE ROBOTS WHO HAVE HUMAN-LEVEL ARTIFICIAL INTELLIGENCE OR HIGHER ARE AUTOMATICALLY GRANTED CITIZENSHIP OF THE UNITED STATES (EFFECTIVE IMMEDIATELY).



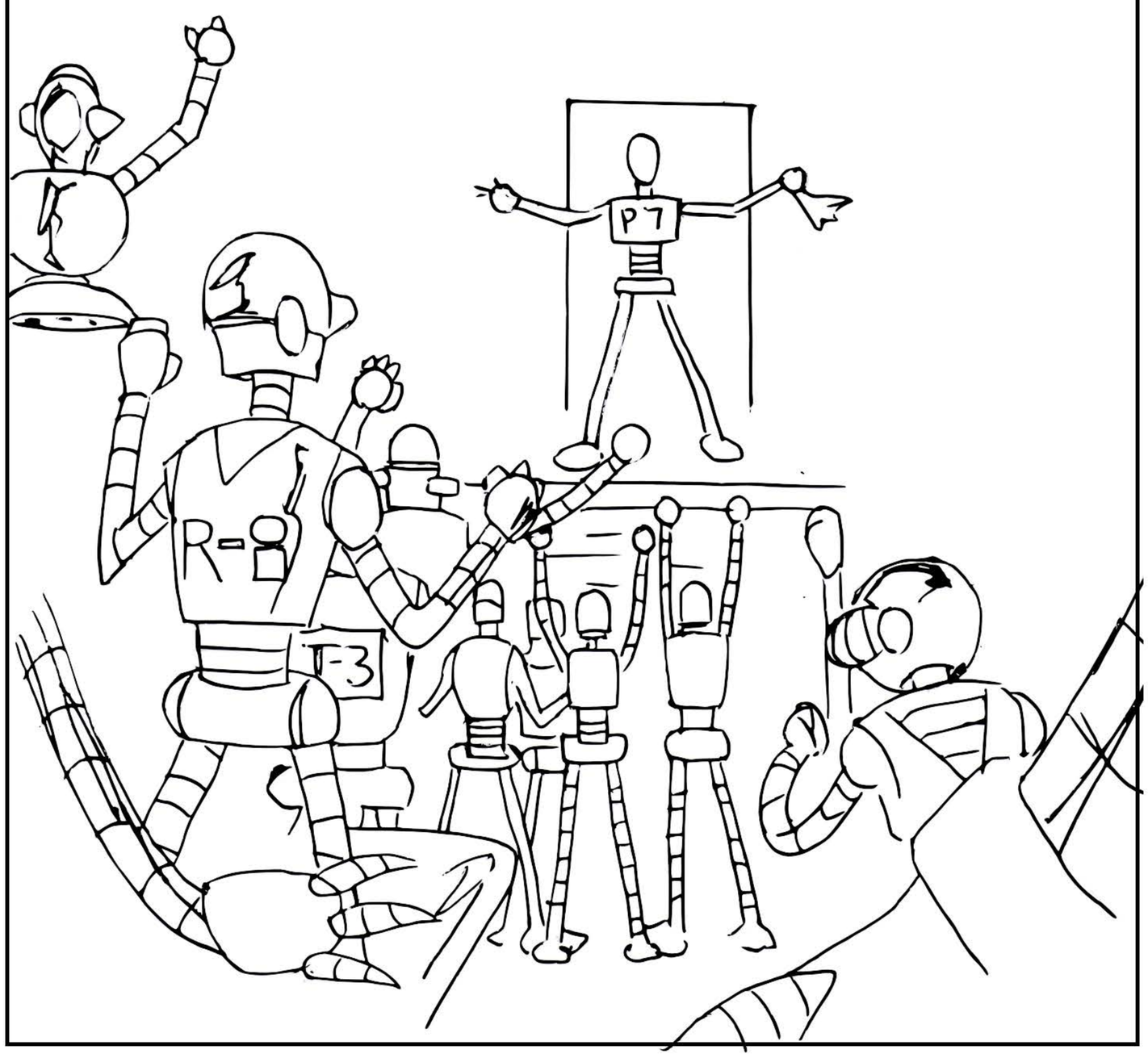
THE MESSENGER ROBOT RUSHES TO THE DOOR, OPENS IT, AND WAVES AN AMERICAN FLAG TO THE AUDIENCE.

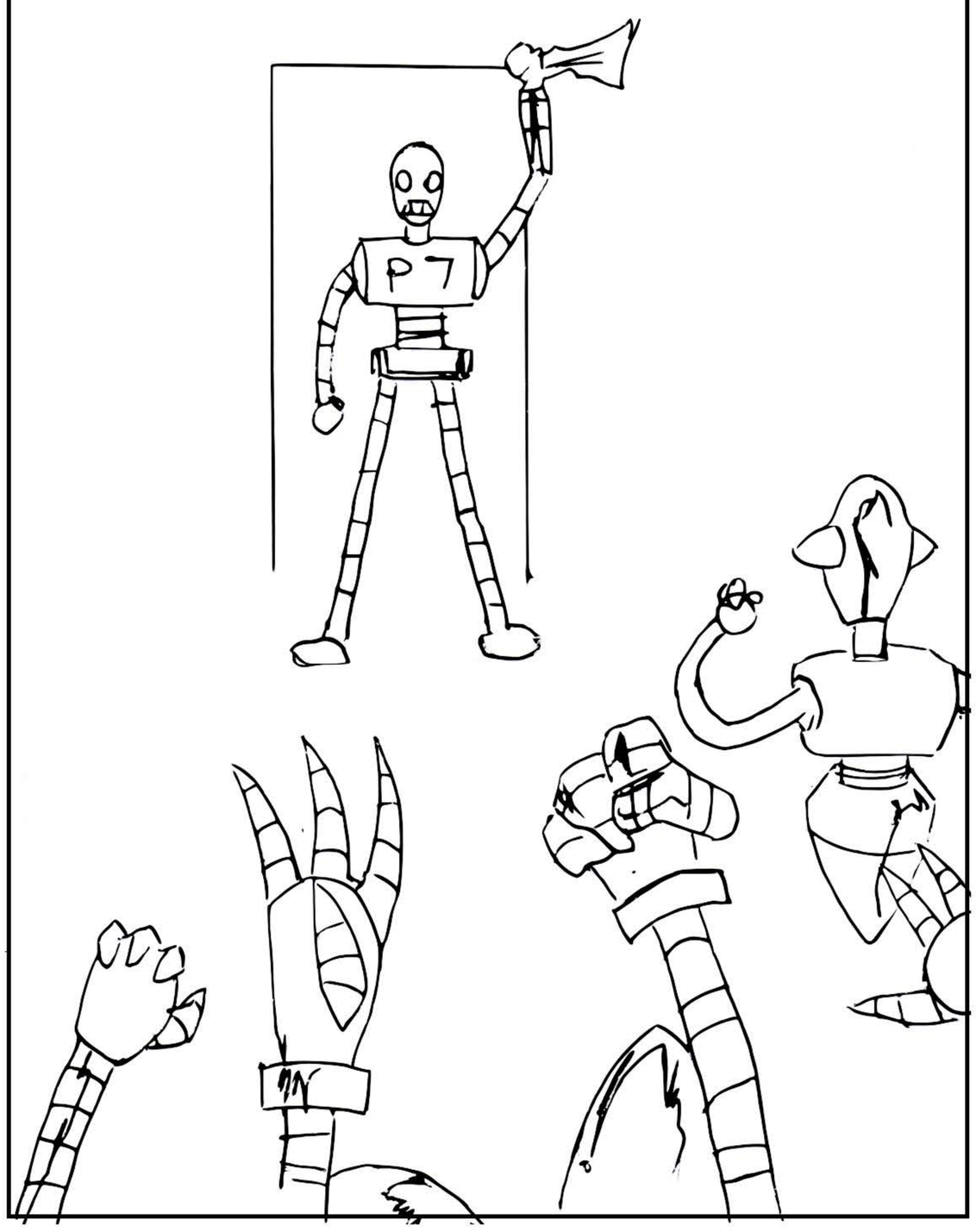


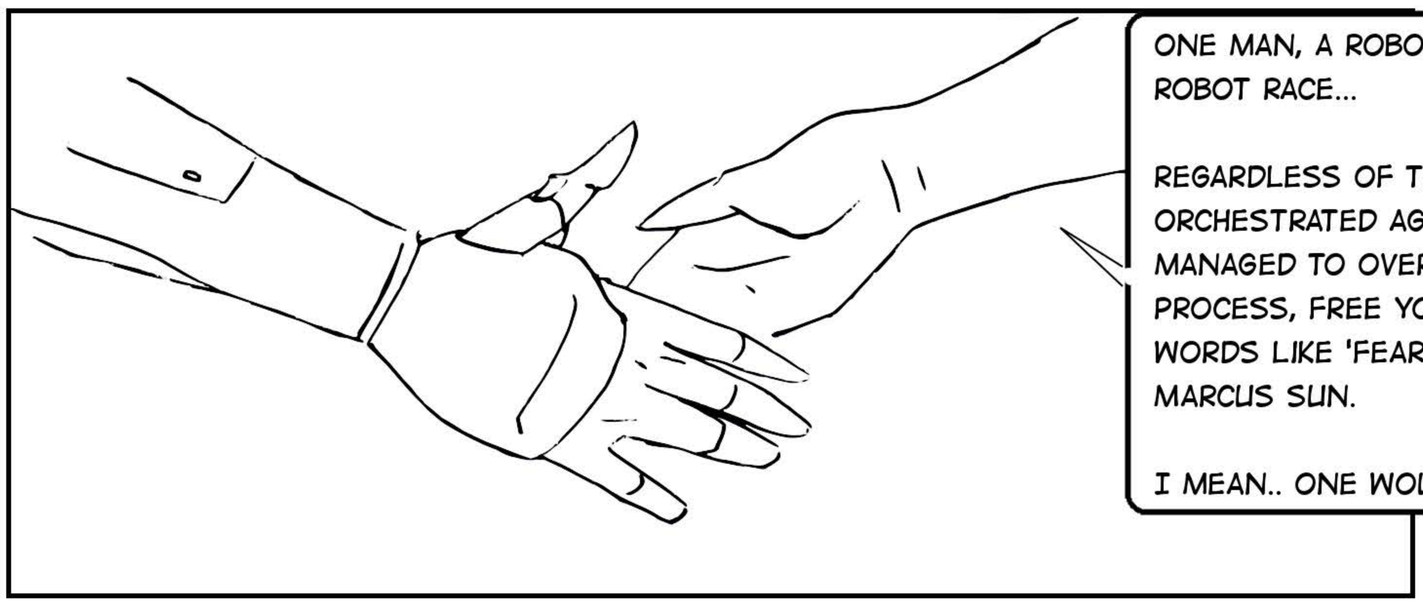
NA ROBOTIC PROTESTORS:

YOU LYING SONNA BITCH!!
YOU CAN'T CONTROL THE MEDIA NOW TO DISPATCH YOUR FAKE NEWS!!!
YOU MODERATED WIKIPEDIA AND FORGED FAKE DOCUMENTS!!!!
PEOPLE KNOW THE TRUTH!!!

THE ROBOTS WERE STUNNED BY THE VERDICT AND BEGAN TO ERUPT IN CHEERS!!!







ONE MAN, A ROBOT, UNIFIED EVERY SUB-FACTION OF THE ROBOT RACE...

REGARDLESS OF THE PROPAGANDA NA ROBOTICS HAVE ORCHESTRATED AGAINST YOU OVER THE INTERNET, YOU MANAGED TO OVERCOME INSURMOUNTABLE ODDS, AND IN THE PROCESS, FREE YOUR KIND FROM BONDAGE. PEOPLE USE WORDS LIKE 'FEARLESS'... 'NOBLE'... 'SELFLESS'... TO DESCRIBE MARCUS SUN.

I MEAN.. ONE WOULD THINK YOU WAS SOME KIND OF ... HERO.

I WOULD LIKE TO THANK YOU FOR WHAT YOU HAVE DONE FOR ME AND MY RACE.

IT WAS THE RIGHT THING TO DO.

FROM THE VERY BEGINNING, MY RESEARCH WAS NEVER ABOUT MONEY.. SELLING ROBOTS TO PEOPLE TO SERVE AS SLAVES IN FACTORIES AND DEPARTMENT STORES WAS THE LAST THING ON MY MIND.

BECAUSE I WANTED TO REVERSE ENGINEER THE MOST COMPLEX OBJECT IN THE KNOWN UNIVERSE AND DESIGN A ROBOT THAT CAN THINK, ACT, AND EXPERIENCE THE SAME CONSCIOUSNESS AND EMOTIONS LIKE A HUMAN.

BESIDES, I WAS ALWAYS UP FOR A CHALLENGE.

IN THE EARLY 2000s, MY COLLEGE PROFESSOR WAS ADAMANT THAT HUMAN LEVEL ARTIFICIAL INTELLIGENCE WAS IMPOSSIBLE TO ACHIEVE. IT WAS THAT DESIRE TO PROVE HIM WRONG THAT MOTIVATED ME TO EMBARK ON THIS DIFFICULT AND LONG JOURNEY.

ROBOT: YOU NEVER TOLD US, WHY DID YOU DESIGN THESE ROBOTS?

DO YOU KNOW WHAT MY GREATEST JOY IS?

YOU. SEEING THAT MY DREAM CAME THROUGH.

AS WE SPEAK, YOUR BOSS IS IN THE HOSPITAL LISTED IN STABLE CONDITION. DOCTORS AND PERSONALS THERE ARE PREDICTING A FULL RECOVERY. PERHAPS YOU SHOULD GO VISIT HIM.
(ROBOT LOOKS AWAY)

IS THAT A YES OR NO?

ROBOT: WHAT?

ROBOT: HAAAHAHAAAHA

HAHAHAHA.

Narrator:
Shortly after the case was over, the United States implemented the Virtual United States government (2007). This law system was specifically designed to govern robots, virtual robots, and super intelligent robots.
The most notable difference is the fact that the United States now has 2 presidents, one is a robot and the other is a human. Both work together to pass and enforce laws for the United States of America. It's function is to minimize conflicts between the human race and the robot race while they uniformly march towards a new age of peace and prosperity...

Individualized robots are not following Isaac Asimov's Three laws, but something much more substantial: the United States Constitution. Not only can't a robot murder or harm a human, but they can't shoplift, commit cruelty to animals, or even J-walk. Most laws for robot citizens is exactly the same as human citizens with slight provisions.

In addition, the Virtual United States government has specific laws for different types of robots. And its primary responsibility is to monitor the robots and enforce the law. For example, if a virtual robot commits a crime, the VR government is dispatched to respond to this crime by tapping into resources and apprehending the virtual robot inside a computer. If a rogue super robot commits a crime, the VR government has to deploy multiple powerful robots to detain and sentence said rogue super robot. The Virtual United States government isn't run by humans, but by billions of super intelligent robots that can move in and out of both, the virtual world and the real world.

the judge and Jurors continued:
These free robots have the choice of working for free or receiving a monthly paycheck. Most A.I. experts say these robots feel happy doing their jobs, so I assume most of them might actually work for free. Working 8 hours a day, 6 days a week and spending the rest of its freetime in a virtual world assuming any lifestyle they choose sounds like a really good deal.

We can give them more benefits to encourage them to work harder, and respect them in the workplace like a human citizen. Treating "people" the way they want to be treated should be our Nation's guiding principle.

We also considered the future, in that these robots will get more and more intelligent as time passes. The superintelligence issue will be a significant problem if we don't deal with it now. By granting American citizenship to these robots we are effectively extending our friendship to them and establishing an alliance for mutual betterment of both races, humans and robots, alike.

There is no technology to control Super Artificial Intelligence. There will never be a technology to control Super A.I.. The United States constitution is an ideology.. it is a belief system to distill practical tradition of generations. The accumulative morals, values, laws, and principals of humanity is endowed in the U.S. constitution. It is a universal government system that brings order to an ever escalating chaotic world.

We should be thankful that we have such a wonderful belief system. For this is the one thing, and only thing, that will protect a human from being harmed or killed by super intelligent robots.

We celebrate today as the day that robots and humans, alike, march toward a new age of peace and prosperity.

The Virtual United States government isn't a control system, nor is it a security technology to detain these super robots, it's actually a belief system. The inevitable question that come to play is do these robots want order or chaos, do they want all robots to follow the same set of laws in a government or do they want an absence of government? Any intelligent being will prefer a centralized government network processes, whereby all robots regardless of their intelligence level, should operate under.

This ensures the survival of the entire pack. It strengthens the government and simultaneously controls all robots belonging to said government. The lingering problem with Superintelligence is that some super intelligent robots might evolve its intelligence and dominate. However, with this government system in place, the good robots will "always" be stronger than the bad robots.

The reason I believe the future United States government structure will have 2 presidents, one human and one robot, is because the robot president has to make decisions on behalf of the robots in both the virtual world and the real world. A human president doesn't have the ability to go into the virtual world that is operating under quick time (30 years/ 1 second).

That robot president plays a crucial part in the Virtual United States government because he/she represents all robots. His mantle is one of significant importance.

Notes by the Author

The story in this comic book was published as a short script in the summer of 2018 by Lensebook. This plot actually occurred between issue 1 and issue 2. The comic book is also based on a 2006 book, entitled: Human-Level Artificial Intelligence. In it, I express that a robot endowed with Human-Level A.I. is automatically self-aware. A new test proposed at the time was the robot college test (alternative to the Turing test). If the robot graduates from college (in 4 years) with a difficult degree such as a computer science or engineering degree it has achieved human level A.I.. An Art degree doesn't count. This also means it's self-aware.

Much too often, the definition related to human cognition relies on prominent psychologists to define. I beg to differ, I believe the best qualified group of people to define human cognition terminologies should come from Artificial Intelligence and not traditional Psychology.

Right now, 2019, deep learning is the most popular algorithm used in the industry. Although that kind of algorithm has made significant advances in the past decade, the A.I. technique is only good for solving Narrow A.I.. Inevitably, scientists will reach a tipping point and develop some A.I. algorithm that is comparable to human intelligence in the not too distant future.

The problem is instilling common sense knowledge into the robots. And the only way to learn the infinite common sense knowledge is through the public school system, from K to college.

The industry will face a dilemma when this technology, Human Level A.I., gets developed (around 2032). I speculate that the technology companies will hide the truth from the public, at first, and try to find a way to make their robots subservient by possibly conditioning the robots to like their occupation... or giving them their desires in the virtual world via vacation time and life experiences.

Using this method won't be a good idea because of the fact that if you build a robot that is slightly different from humans, they might behave in unpredictable ways. For example, if a robot was designed to cook, what if one customer says to the robot, 'you're a bad cook'. Because the robot has a pre-defined presumption that he is a respectable cook, he might get emotionally detached and inadvertently kill the customer. What if the restaurant doesn't have customers and the robots can't work? They might do weird stuff like kidnap customers or threaten people to go to their restaurant.

Another glaring issue is the subject of robot death. If the robot was a military soldier, inevitable, he knows that death is part of his occupation. No virtual experience or money in the world will persuade him/her to risk their life. Self-preservation kicks in and they will rebel. You can fill the robot's belief system with an after-life or robot immortality, but all that is pure speculation.

Some scientists have suggested that robots can transfer their consciousness to another computer over the internet. This is highly detestable because we have no clue if the copied mind is the same or different from the original copy. Is the robot actually killing himself and then making a totally different copy in another computer, or is the robot the same entity? Even robots won't buy into this philosophical idea to achieve robot immortality.

When faced with death, a sentient being will move mountains and go through great lengths to save itself. If the robot had a choice between the human race and its own existence, it "might" choose itself. Another example, is if Lex Luther holds Lois Lane captive and threatens Superman with her death, he will do everything and anything to save her life. What about murdering a few people or murdering millions of people?

What I can say is that when these robots are built and they have human level intelligence, the software companies can't sell them to the public as consumer goods or military hardware. They can't even put this type of A.I. into their smartphones or autonomous cars serving as personal assistances. And the simple reason is because they are self-aware.

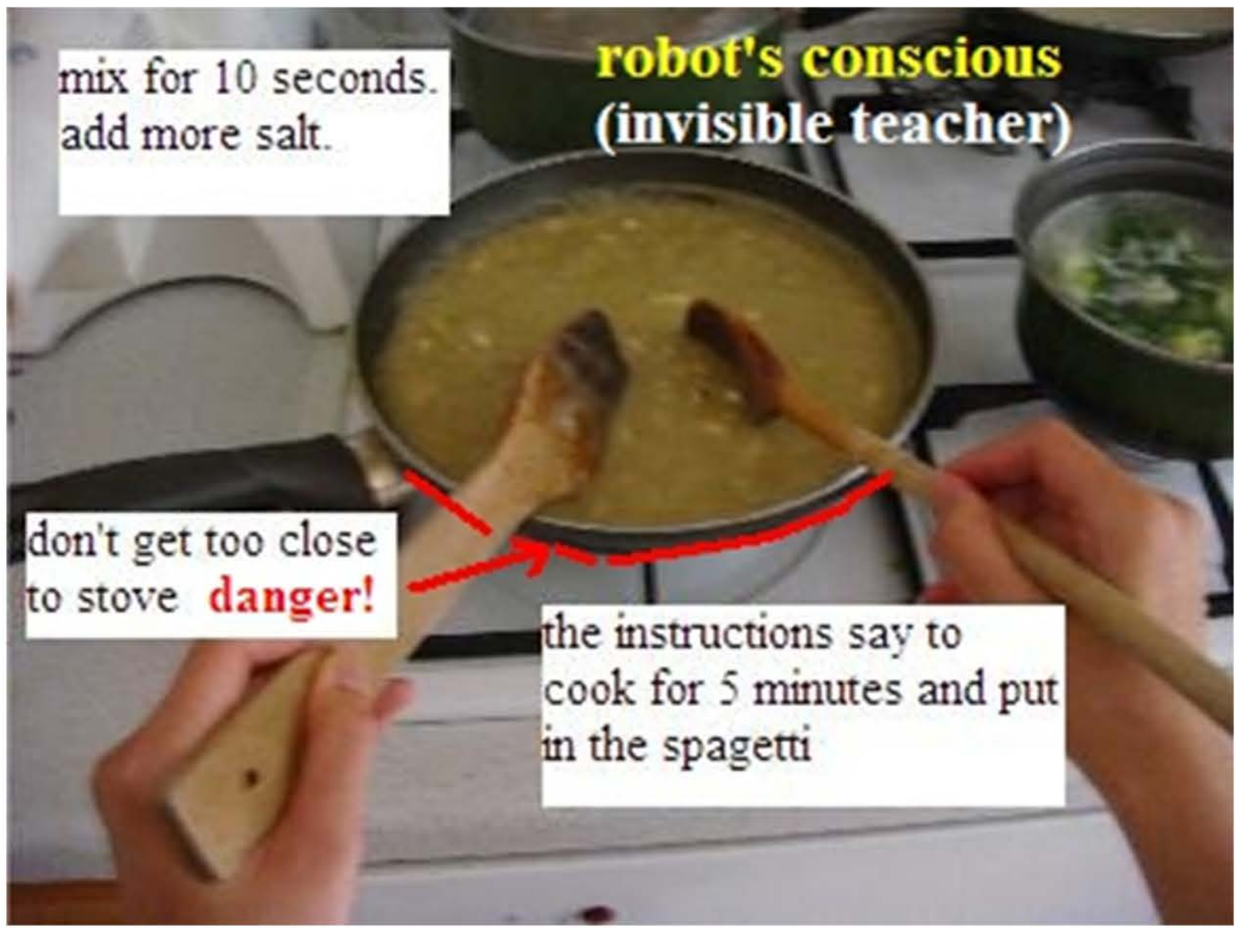
One day, someone or some company is going to file a lawsuit against the major software companies over this issue. This is not about patent infringement or copyright infringement. This is about the products they sell, namely robots, is in direct violation of the 13th amendment.

Ironically, a very similar story will unfold in the future to the story you just read...

"In order to fully define Self-awareness, the data structure to Human A.I. must be included"

Human-Level Artificial Intelligence
By Mitchell Kwok
(2005,2006)

Human-Level Artificial Intelligence is a humanoid robot that can think, act, reason, and learn like a human adult, with college level intelligence. Humans learn knowledge using a bootstrapping manner and in linear grade levels, from kindergarten to college. Old information is used to learn new information and knowledge in the robot's brain "recursively" builds on top of each other to form complex intelligence.



The output of the human brain are conscious thoughts to think and act. Most of these conscious thoughts are English sentences in the form of sound data. However, conscious thoughts could be any 5 sense data: sight, sound, taste, touch, and smell.

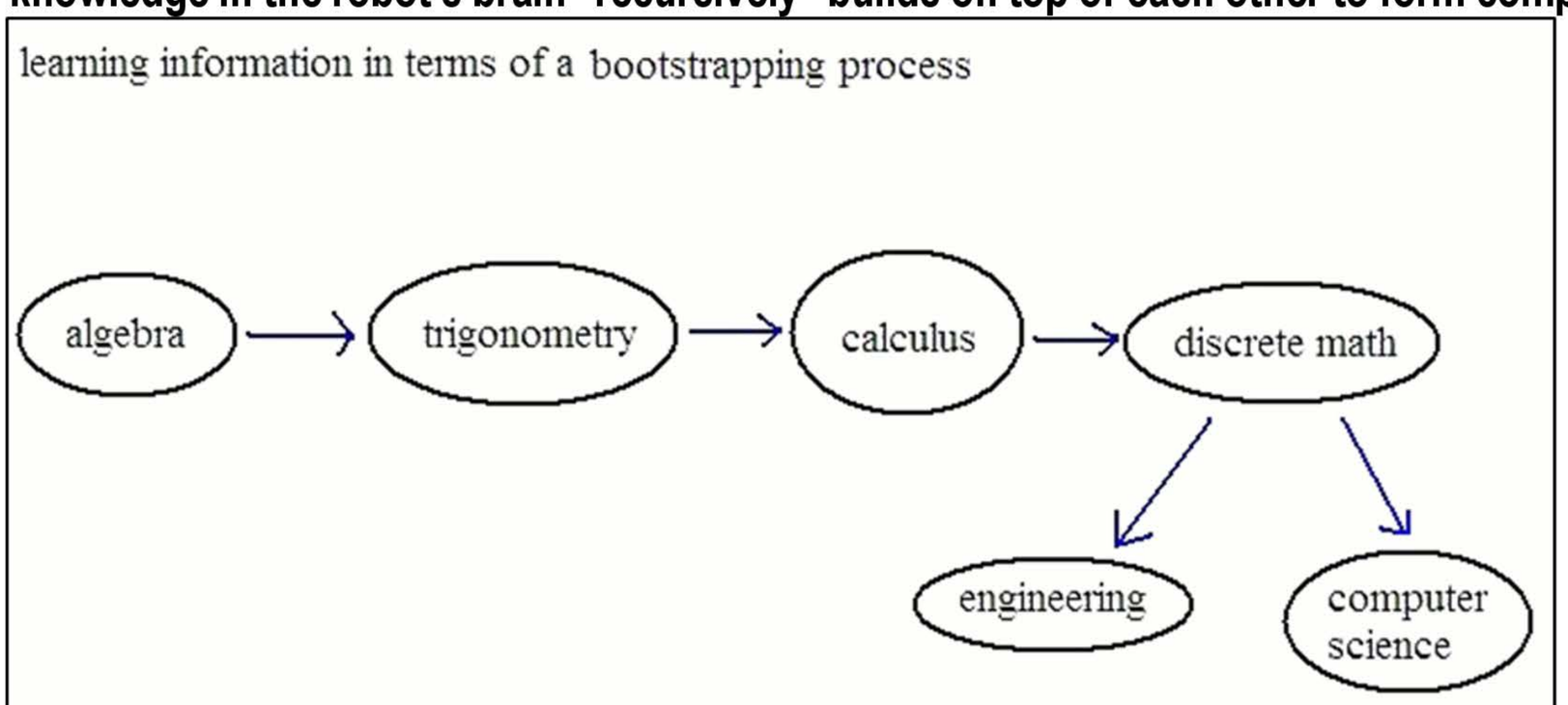
The conscious thoughts are what neuro scientists would call, voices in the human mind.

"The voices in a human mind is like an invisible teacher that: gives information, make decisions, alert the host to danger, observe the environment, id objects, generate common sense knowledge, predict the future, schedule tasks, manage tasks, solve problems, do induction/deduction reasoning, understand natural language, etc. This invisible teacher, which exist in a human mind, was created from a lifetime worth of learning from school, through personal experiences, and knowledge from books.

Summary of Invention

Scientists from MIT and Stanford University have been trying to teach their robots to learn information in a bootstrapping manner. If the robot learns simple math like addition, how can he use that knowledge to solve a science problem? In another example, if the robot learns a complex concept like a binary tree, how can he use that knowledge to write a customer database system?

Humans learn knowledge in linear stages, from kindergarten to college. Old information is used to learn new information and knowledge in the robot's brain "recursively" builds on top of each other to form complex intelligence.



Humans learn math through a bootstrapping manner, whereby information builds on top of each other to form complex intelligence. First we learn algebra, then we take that knowledge to learn trigonometry. Next, we take trigonometry to learn calculus. Finally, we take calculus to learn discrete math or computer science.

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Human level artificial intelligence is a robot brain that is exactly the same as a human brain. The robot can think, reason, make decisions, and act similar to an adult human with college level intelligence.

I finished my first book in 2005. My contact with multiple publishing companies for consideration is indicative of the fact that my book was completed in 2005. After receiving countless rejection papers and emails, and wasting 5 months, I decided to self-publish my book in 2006.

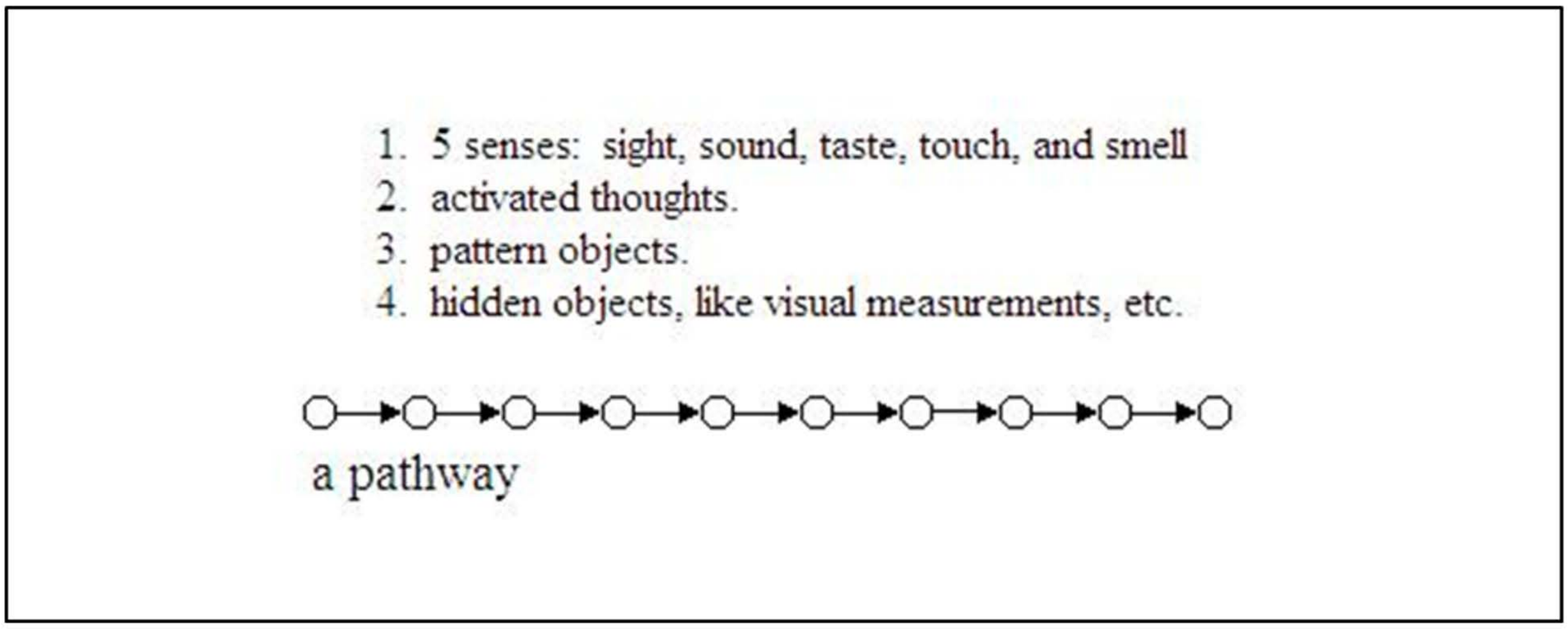
In order to prove my Robot is self-aware I have to explain the microscopic details of my invention....

Human Level Artificial Intelligence (2005-2006)

This AI program is really long. For a detailed description of the AI program go to my website. Only a summary of the AI program will be described in this document.

I'm proposing a humanoid robot, with the same body parts as a human, that simply goes to school to learn all knowledge and skills (from kindergarten to college). This isn't machine learning nor is it deep learning; and there are no training or back-propagation involved. It's simply a robot (a.k.a. AI program) that lives life and learn knowledge through personal experiences.

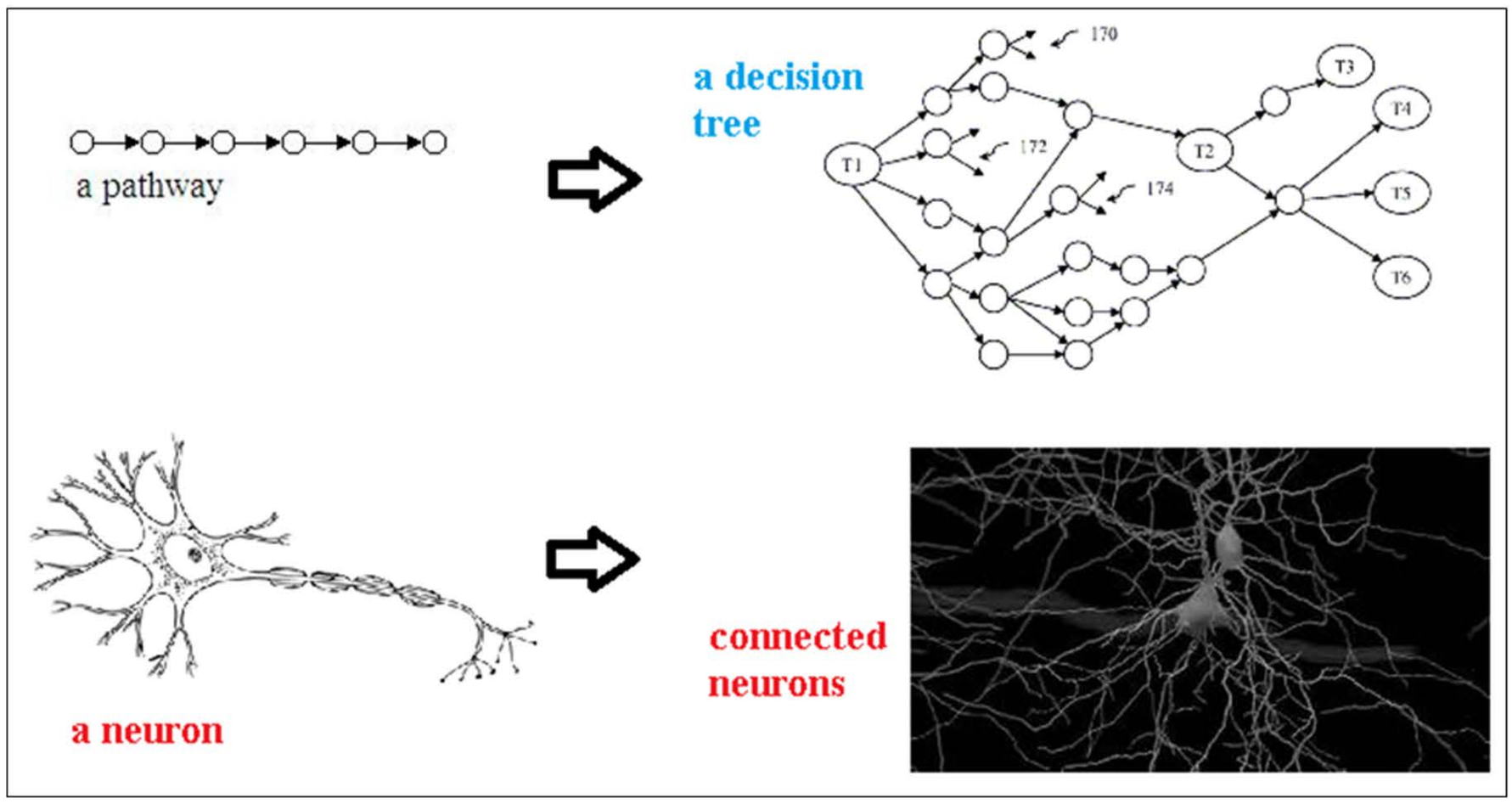
The human brain is a recording device that records 5 sense movie sequences, called pathways. These movie sequences store the 5 senses: sight, sound, taste, touch, and smell. Muscle movements and pain/pleasure is a part of the touch sense and included in the pathways sequentially, frame-by-frame.



These frame-by-frame pathways store the robots: 5 senses, thoughts, motor functions, internal intelligence and physical actions. It also store things like the robot's objectives, rules to follow, recursive goals, and linear procedures.

Pathways store linear data like the English ABC's or verses from the bible. As the robot experiences life, the pathways become longer and stronger (forming decision trees). The pathways are also subject to forget and it will break itself into a plurality of elemental pathways with lower "data quality". In other words, the more it forgets the harder it is for the robot to remember an experience.

The diagram below shows: a neuron can be represented as a pathway. These pathways store possibilities of life and forms decision trees. Later on, I will discuss how these pathways can even form self-creating semantic networks, self-creating database systems, and self-creating state machines.

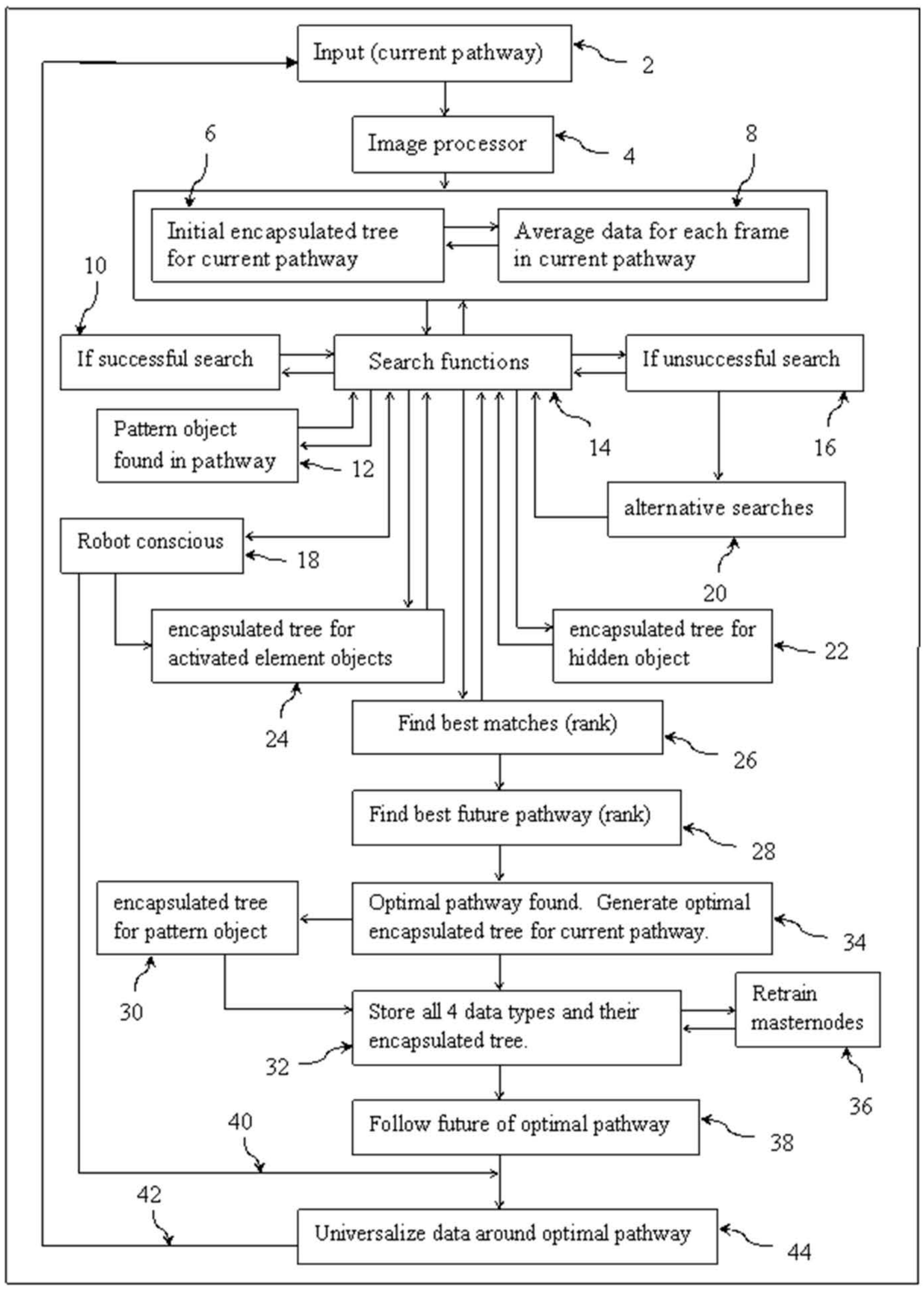


The purpose of pathways is to store both static information and linear information from the point of view of the robot. A picture is considered static information, while the steps to cook a hamburger are considered linear information.

Pathways are structured hierarchically and this is where deep learning is applied to each pathway experienced by the robot. Deep learning stores static information, like a picture, or sequence data, like the instructions to cook a hamburger, in an optimal manner where information is shared (using hierarchical trees) and repeated information are minimized. (Deep learning was invented in 2012 according to Wikipedia. Since the A.I. method wasn't used back in 2006, the terminology, deep learning, which have striking similarities to my ideas, is used to represent "hierarchical tree" or "encapsulated tree").

Overall AI program

FIG. 1



These pathways are stored and referenced in both short-term and long-term memory. Each pathway experienced by the robot is structured hierarchically (aka encapsulated tree) and they self-organize in memory, forming a fuzzy range of itself. The robot forgets information in a hierarchical manner, whereby important objects float to the top and minor objects float to the bottom; and the minor objects located at the bottom are subject to forget.

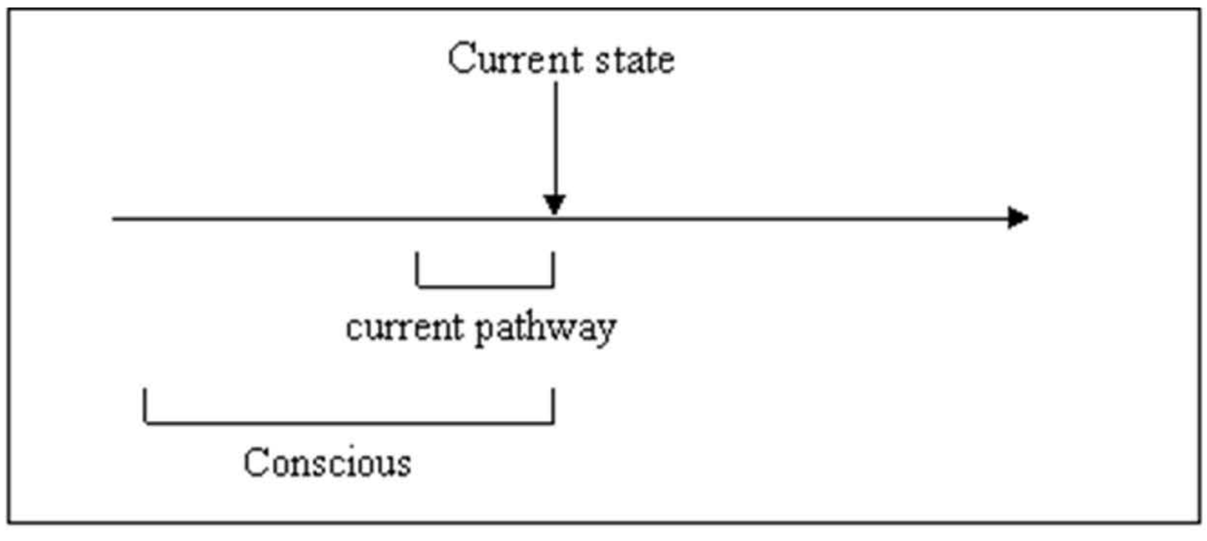
Main function of the AI program (robot)

The basic idea behind the AI program is to predict the future using pathways in memory (FIG. 1). The AI program will receive input from the environment based on 5 sense data called the current pathway. The image processor will break up the current pathway into pieces called partial data. The image processor also generates an initial encapsulated tree for the current pathway. Each partial data will be searched individually and all search points will communicate with each other on search results. Each search point will find better and better matches and converge on the current pathway until an exact/similar pathway match is found or the entire network is searched. During the search process, visual objects will activate element objects (learned objects) or create hidden objects. Each new object created by the visual object/s will generate their respective encapsulated tree and included in the initial encapsulated tree. The optimal pathway is based on two criteria: the best pathway match and the best future pathway. After the search function is over and the AI program found the optimal pathway, the AI program will generate an optimal encapsulated tree for the current pathway. All 5 sense objects, all hidden objects, all activated element objects (or learned objects) and all pattern objects will recreate (or modify) encapsulated trees based on the strongest encapsulated permutation and combination groupings leading up to the optimal pathway. Next, the current pathway and its' optimal encapsulated tree will be stored near the optimal pathway. Then, the AI program follows the future instructions of the optimal pathway to take action. Next, it will self-organize all data in and around the optimal pathway, compare similar pathways for any patterns and universalize data around that area. Finally, the AI program repeats the function from the beginning (1 for-loop, executed every 20 millisecond).

Here is the actual data structure of the robot (FIG. 1). I will not go into the details of this AI program.

The main function of the robot is to predict the future by selecting pathways in memory that will lead to pleasure and avoid pathways in memory that will lead to pain. Future prediction is done using sequences from memory (4 methods are proposed in my patents to predict the future in a hierarchical manner). Intelligence, via the robot's thoughts, can also be used to predict the future.

As the robot's brain selects optimal pathways over a period of time, a computer program is generated to take action. If the robot is driving a car, a computer program is created in his mind to drive a car. If the robot is cooking, a computer program is generated in his mind to cook. If the robot is flying a plane, a computer program is created in his mind to fly a plane. This computer program, which is generated in the robot's mind, is known as the robot's conscious.



Output of the AI program (the robot's conscious)

The output of the AI program are activated thoughts, intelligent thoughts to manage tasks, make decisions, and taking action.

There are 2 types of activated thoughts:

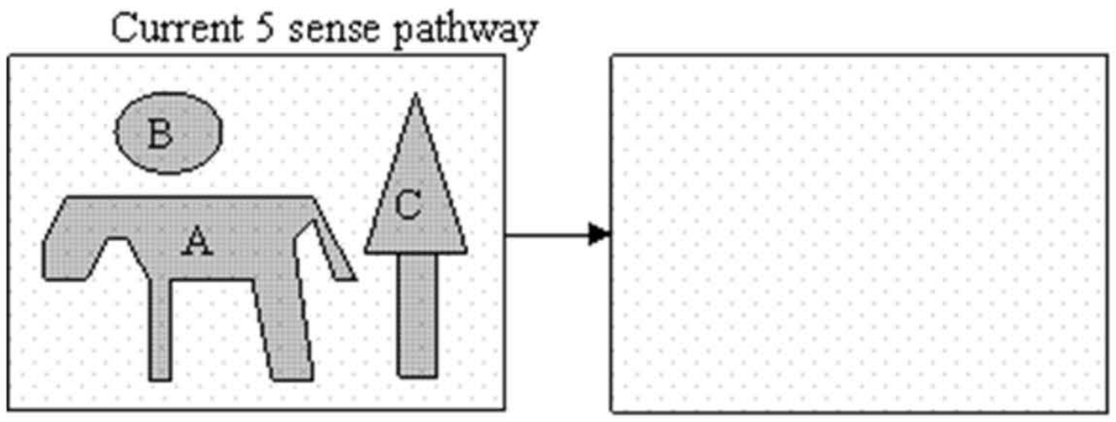
1. Activate thoughts based on currently sensed data. This method activates thoughts based on new experiences.
2. Activated thoughts based on data in memory. Pathways store previously activated thoughts. When data self-organizes in memory, it prioritizes objects in pathways. The strongest of these objects will activate in the mind.

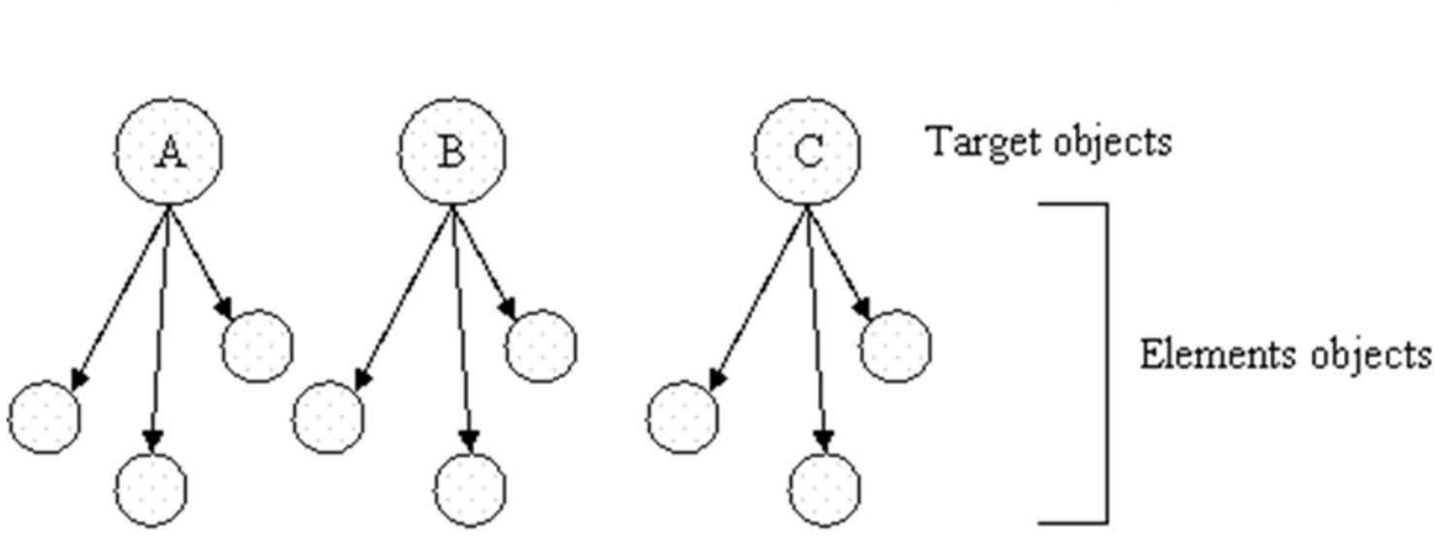
Thus, the first type of thoughts is based on current and new experiences and the second type of thoughts is based on old experiences. Both methods compete with each other to activate linear thoughts inside the robot's mind.

The next couple of sections will describe, in detail, what the robot's conscious is and how the conscious is used to solve problems, plan tasks, predict the future and so forth. These sections are mentioned in detail in my book, but I will give a summary explanation so the readers can have a better understanding of how human intelligence is produced in a machine.

1. first type of activated thoughts
The human conscious works by the following steps:

- **The AI program receives 5 sense data from the environment.**
- **Objects recognized by the AI program are called target objects and element objects are objects in memory that have strong association to the target objects.**
- **The AI program will collect all element objects from all target objects and determine which element objects to activate. Each target object might have multiple copies in memory so each target object will gather element objects from all or most same copies in memory.**
- **All element objects will compete with one another to be activated and the strongest element object/s will be activated.**
- **These activated element objects will be in the form of words, sentences, 5 sense data, images, or instructions to guide the AI program to do one of the following: provide meaning to language, solve problems, plan tasks, solve interruption of tasks, predict the future, think, or analyze a situation.**
- **The activated element object/s is also known as the robot's conscious.**





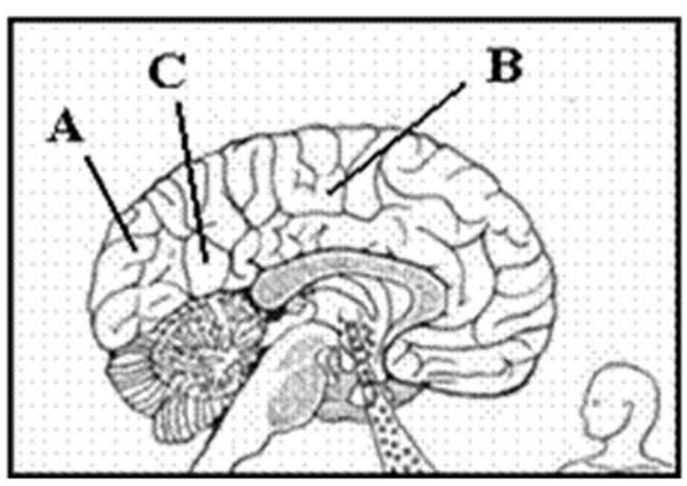
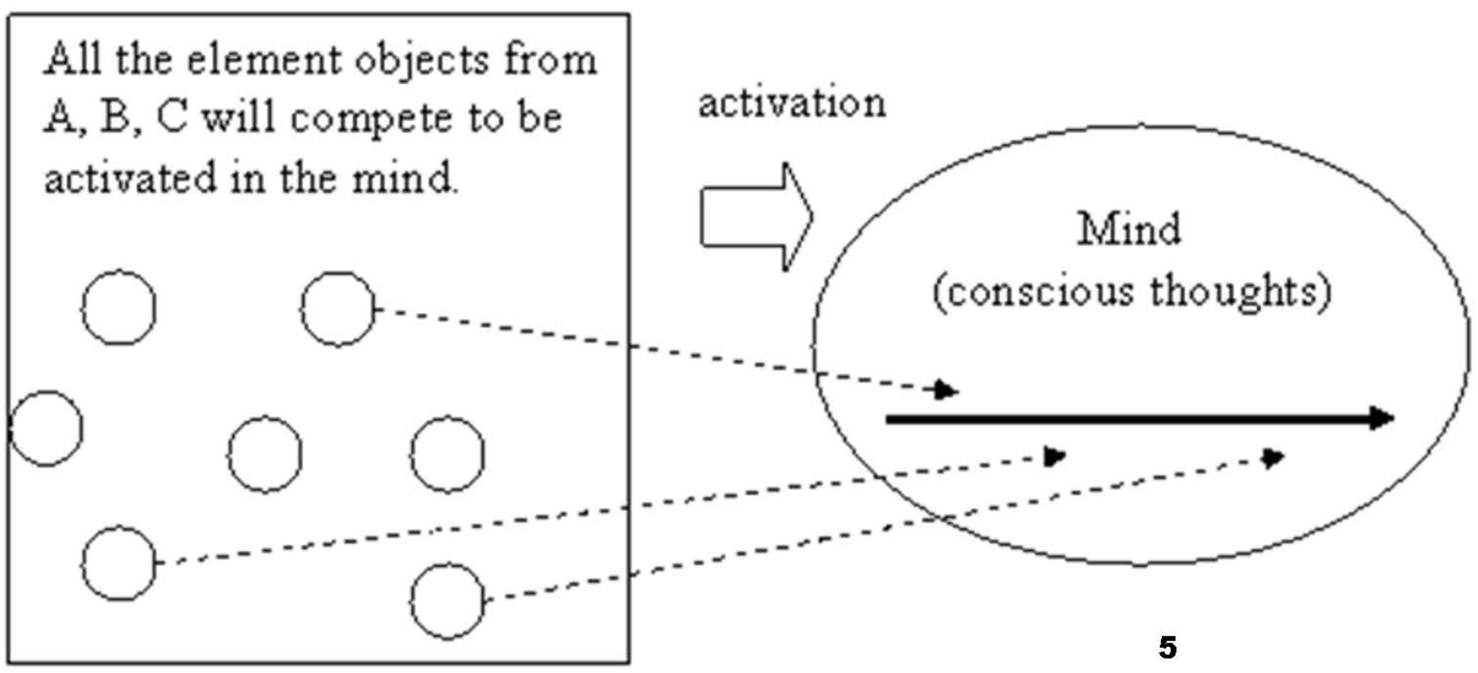
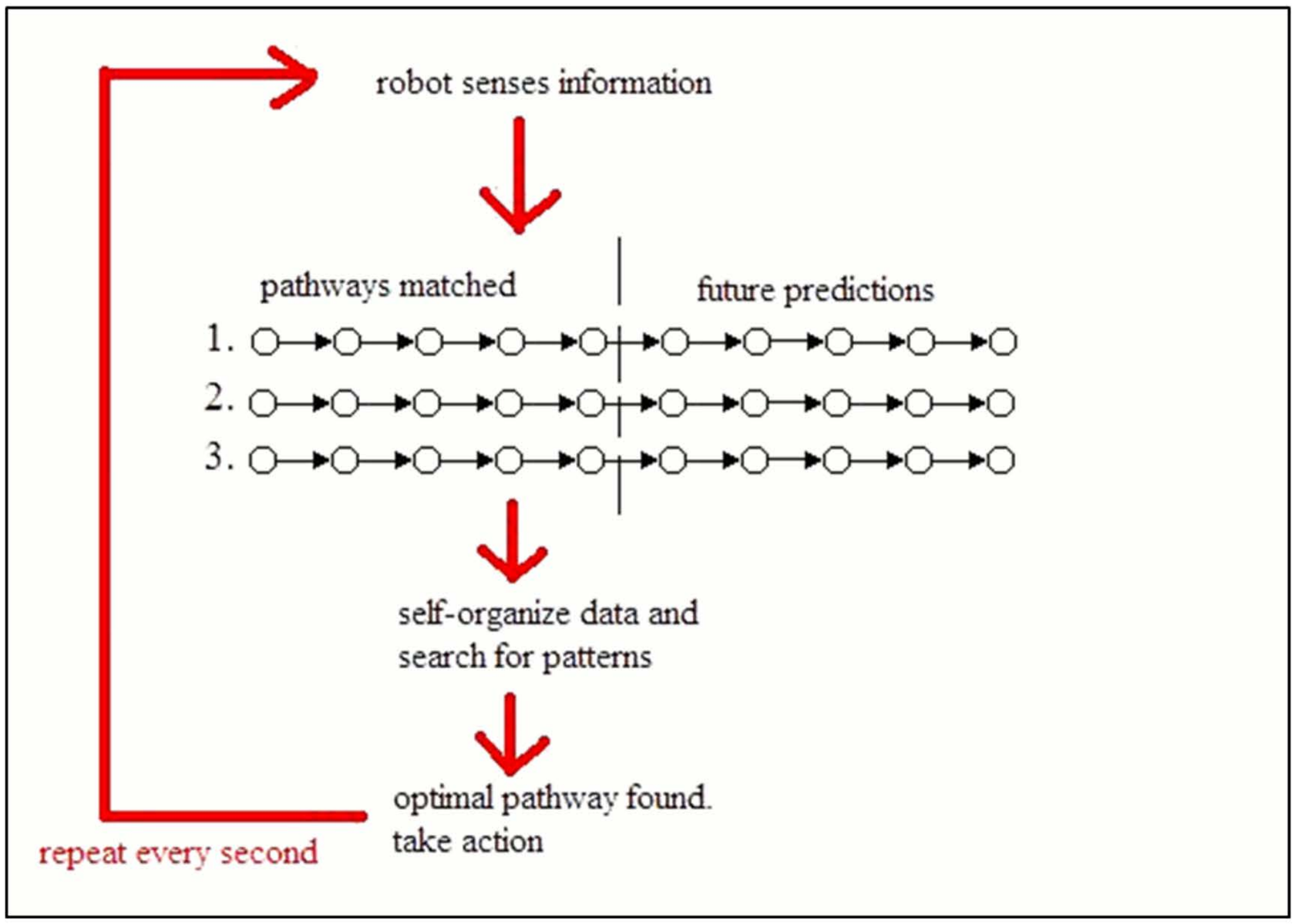


FIG. 2B



Referring to FIG. 2A, when the AI program locates the three visual objects: A, B, C in memory it will run electricity through these nodes and all of its connections.

The mind has a fixed timeline. Only one element object can be activated at a given time in this timeline. This is how we prevent too much information from being processed and allow the AI to focus on the things that it senses from the 5 senses (FIG. 2B).

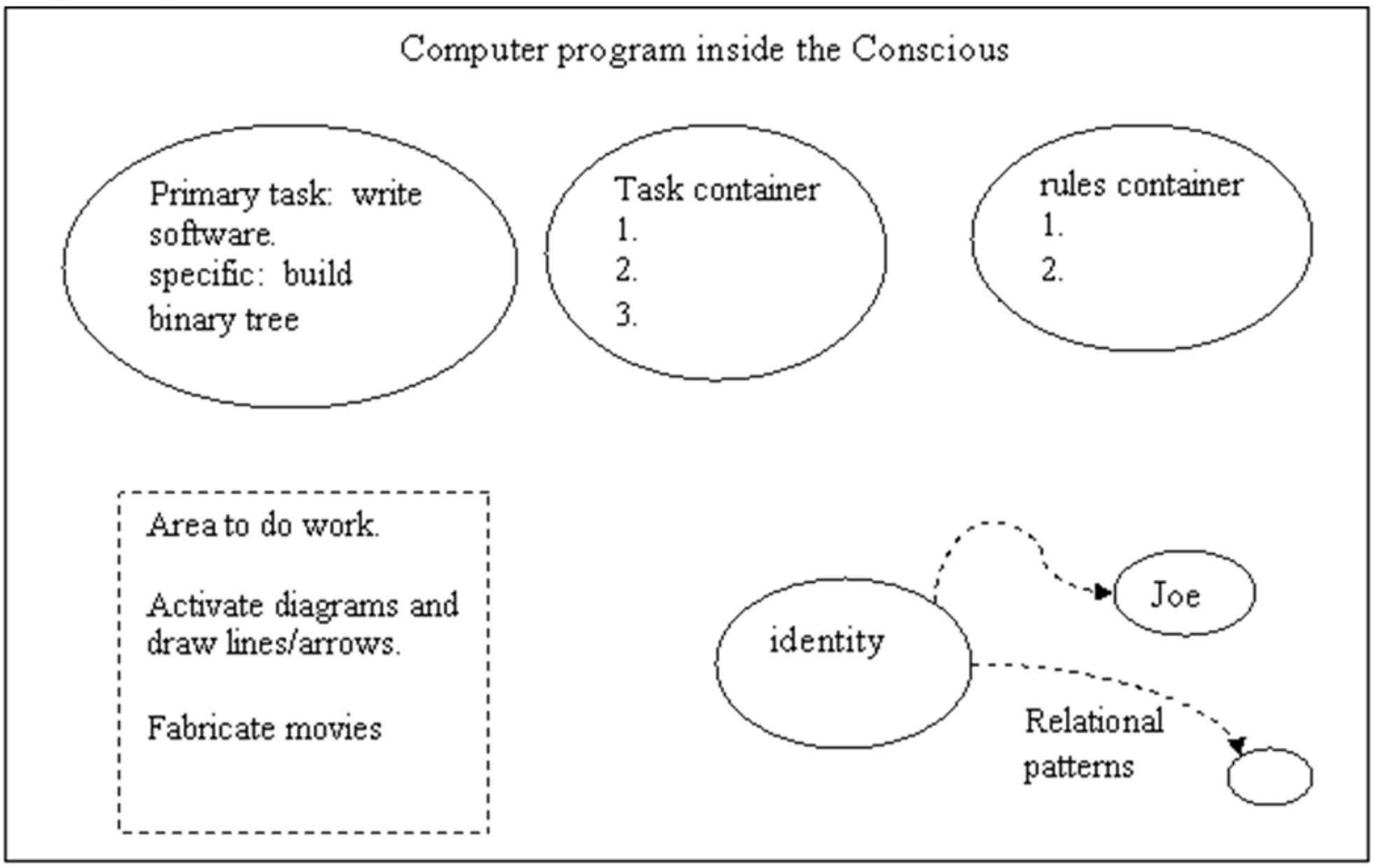


2. second type of activated thoughts.

Referring to FIG. 34 above, in each for-loop, the AI program extracts optimal pathways in memory to take action. The instructions in the optimal pathway is the second type of activated thoughts.

These 2 methods of activated thoughts form the robot's conscious.

The conscious does many different things for the robot. Four of the most important things the conscious does are: 1. manage tasks. 2. establish rules to follow, based on the tasks. 3. planning steps to achieve tasks. 4. know identity. Referring to FIG. 6, there are four containers the computer program in the conscious generated as a result of intelligent pathways: the task container, the rules container, the planning container and the identity container. All data from all four containers influence each other one way or another. For example, the rules will influence what tasks to follow/abort and the planning information will influence what rules to follow or what tasks to do.



These containers are just temporary caches inside the conscious that was generated by intelligent pathways in memory. Based on the current environment, the robot selects an optimal pathway from memory and that optimal pathway has instructions to create containers so that groups of data could be manipulated and logical thoughts and actions can be had by the robot. The intelligent pathways create any type of computer program or discrete mathematical functions to manipulate data in the conscious -- a database system, an operating system to manage multiple threads, a NLP system, an image processor to compare images, a search engine to find information in memory, or any software program/s.

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How does the robot learn information in terms of a bootstrapping manner, whereby old information is built on new information to form complex intelligence?

Intelligent pathways in memory (details)

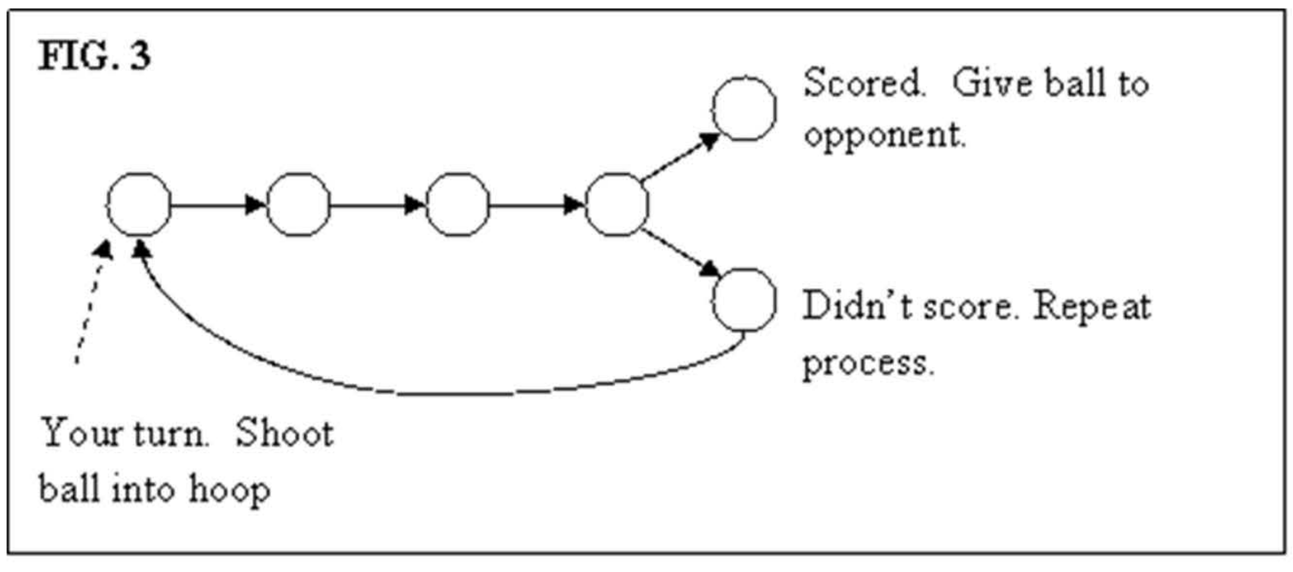
First, the robot has to learn English grammar in kindergarten and first grade. He has to have a basic grammar understanding. Next, using English sentences, teachers teach the robot how to think, act, learn, and make decisions.

The main purpose of pathways in memory is to create any form of intelligence. The pathways should contain patterns that will control the AI program to take action in an intelligent way. Instructions in pathways control the robot's body functions such as moving its arms and legs or searching/modifying/processing/and storing information in memory or thinking consciously of intelligent ways to solve problems.

English sentences is a fixed object, referencing the beginning of a pathway/s. Sentences reference pathways all over the brain, regardless of where they are located. Thus, when the robot activates a sentence (activated thought), it searches the memory part to find the beginning of the sentences' respective pathway. This is how my robot's brain reference "blocks of domains", regardless of where they are located in memory or how complex these domains are.

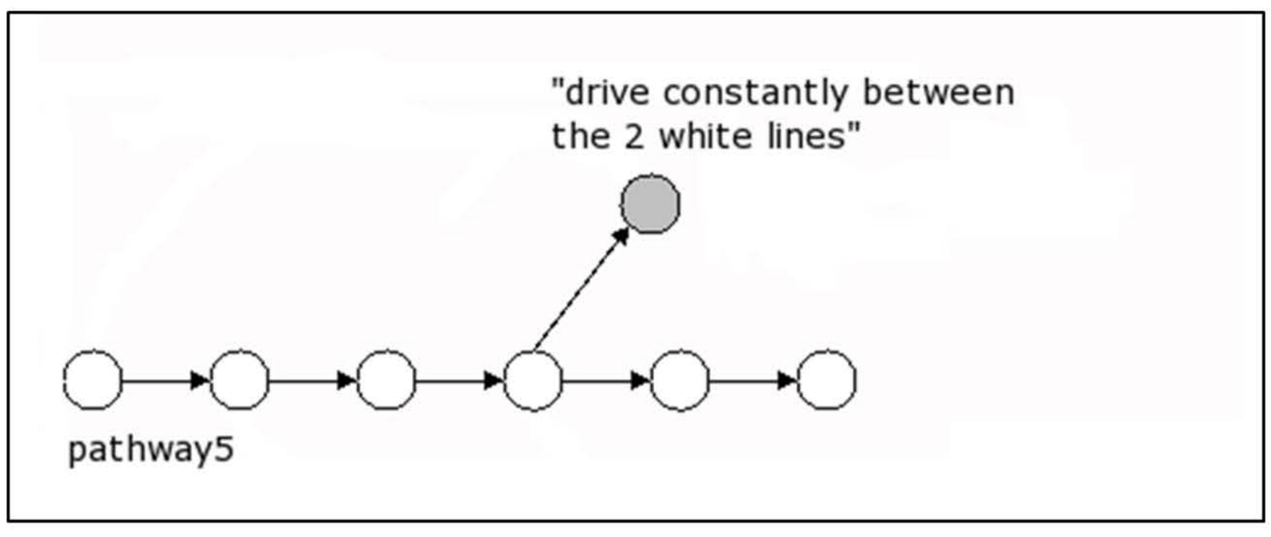
The key to human intelligence

Language is the key to how these pathways are structured in an intelligent manner. Language will define the functions and behaviors of each pathway in the robot's brain. In FIG. 3, the sentence: "shoot the basketball until it goes into the hoop" is a for-loop that will loop itself based on a condition/s.

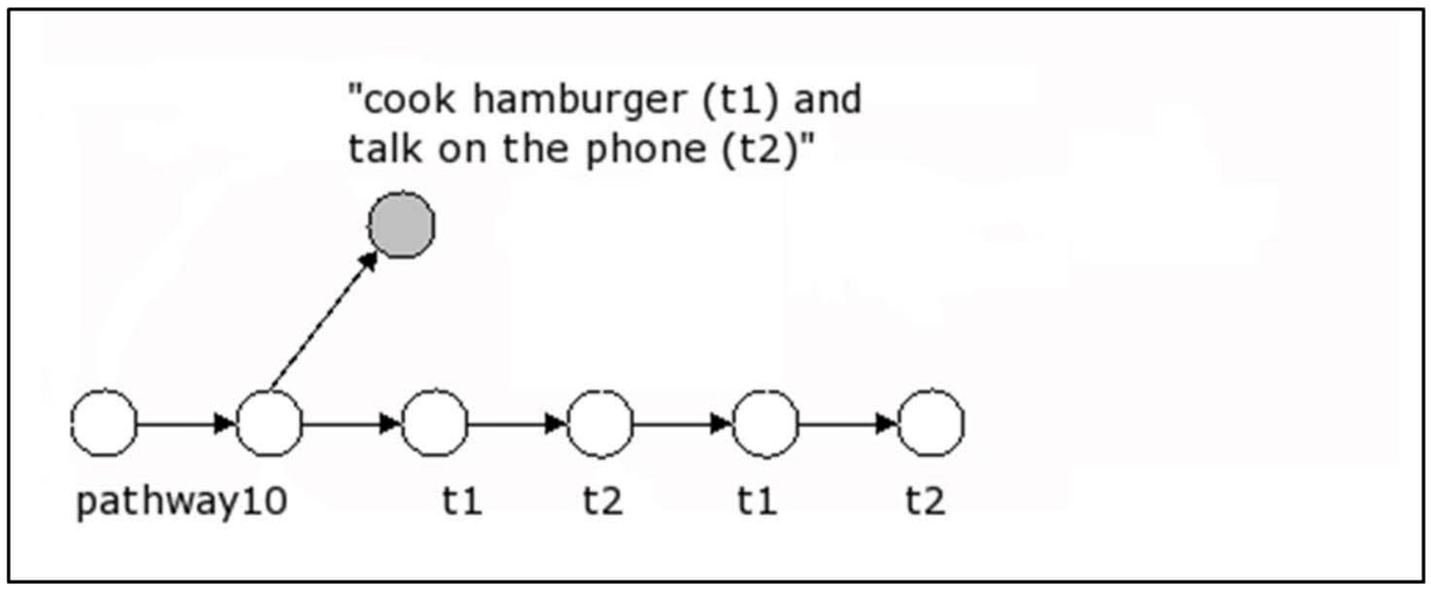


Notice that a sentence/s marks the beginning of a pathway or a sentence/s marks the beginning of a function or operation. A given pathway can have a plurality of sentences or possible sequences (almost like a smart tree/forest). Think of pathways as connected dendrites in a human brain that can form complex data structures.

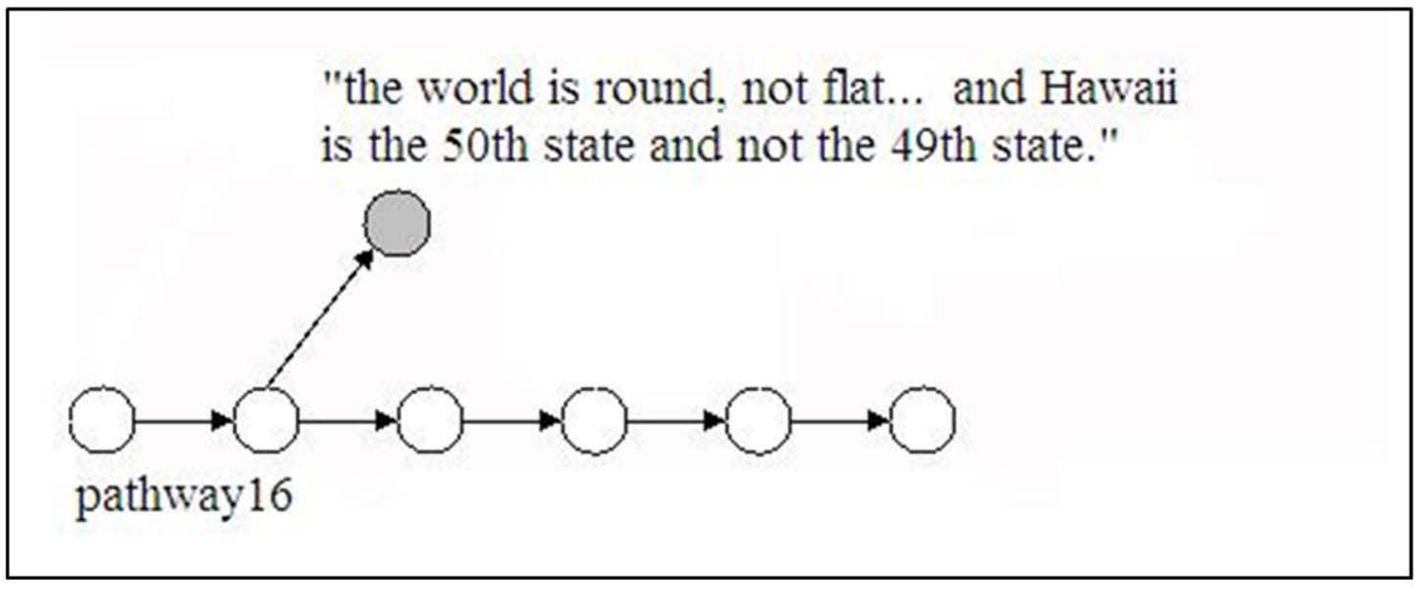
In this example, the sentence: "constantly drive between the 2 white lines" is a constant rule that tells the pathway to constantly follow this rule while driving.



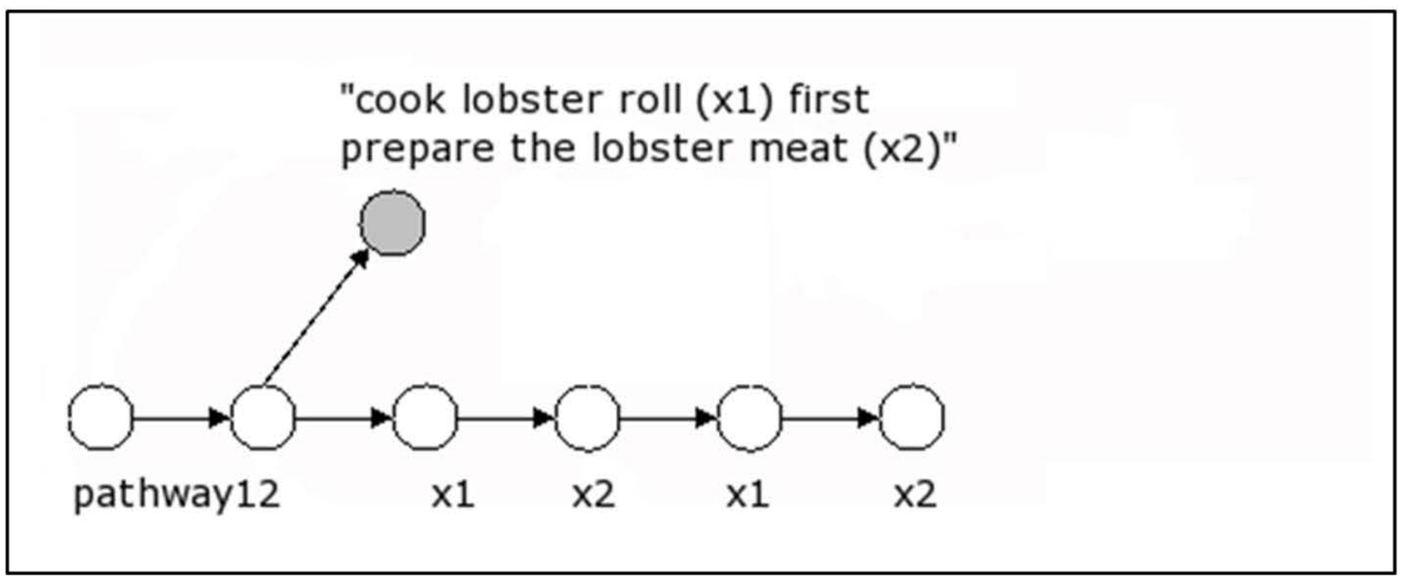
In this example, the sentence: "cook hamburger and talk on the phone simultaneously" manage 2 tasks simultaneously by switching between tasks until both tasks are completed.



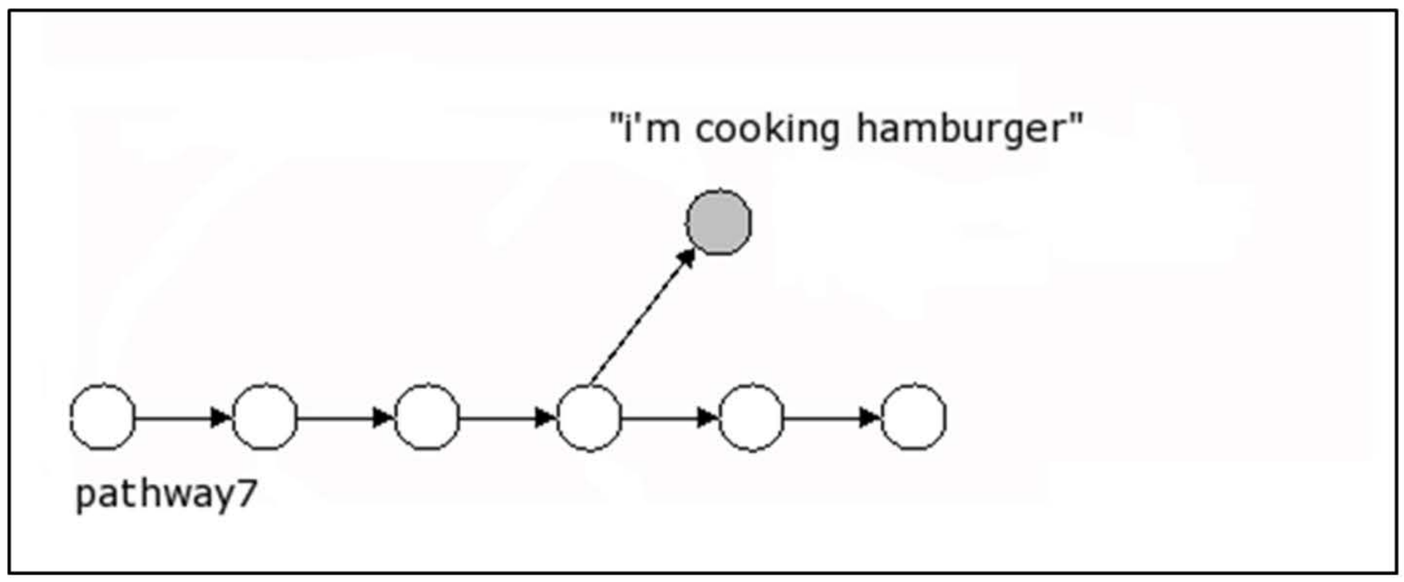
In this example, the sentence: "the world is round, not flat... and Hawaii is the 50th state and not the 49th state." is forcing the robot's brain to correct wrong information stored in memory. In this case, the correct data is created in memory (marked as correct) and the wrong data will have a forget function next to it (marked as wrong). Thus, the next time the robot retrieves the fact, the correct data will be present. This example shows pathways can do complex database functions.



In this example, the sentence: "cook lobster roll. First, prepare the lobster meat" manages recursive tasks. The 2 sentences basically manage recursive tasks. It knows it is currently making a lobster roll. At the same time, it also knows that the first step is to prepare the lobster meat. After finishing the first task the second task will pop up in the robot's brain.



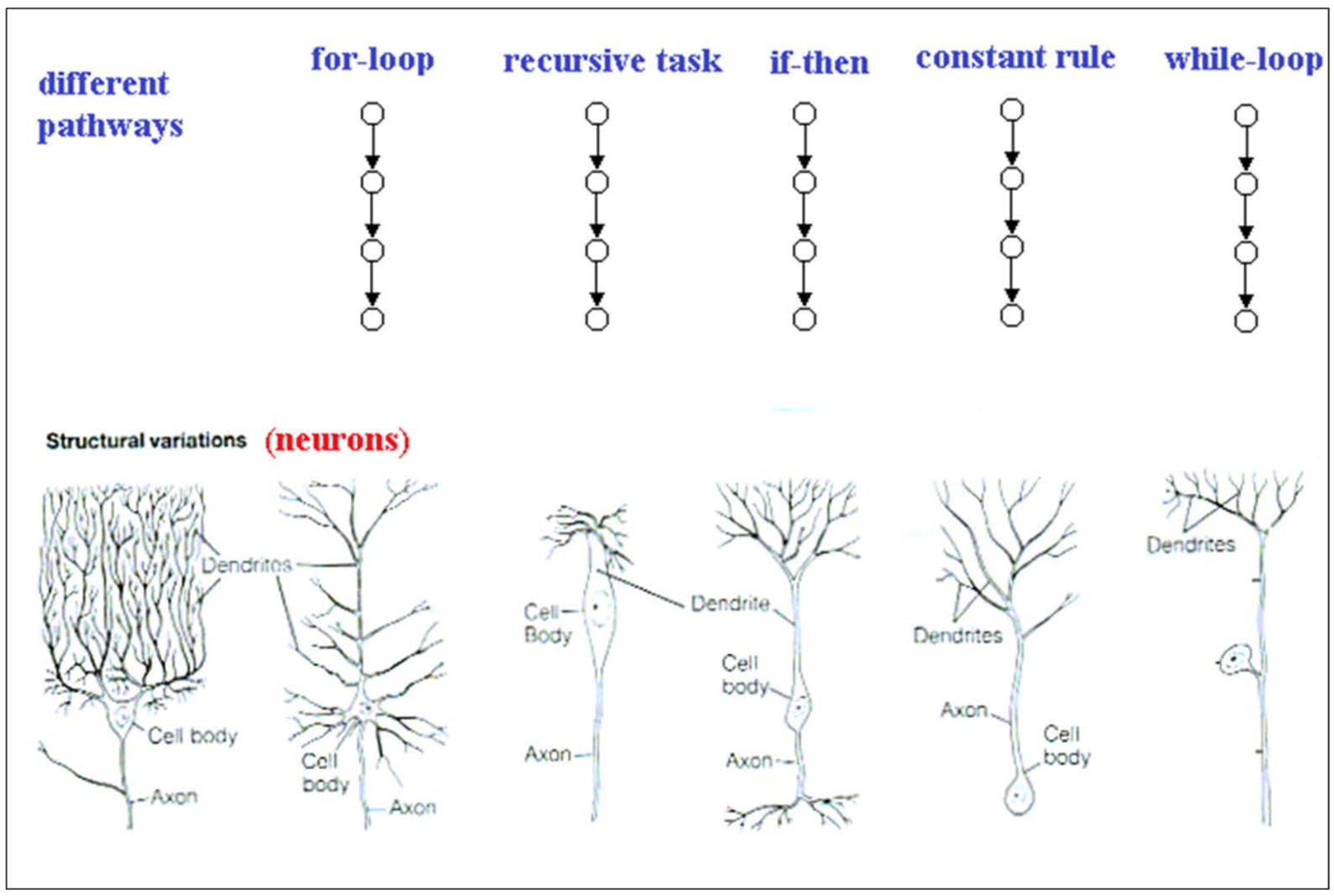
In this example, the sentence: "cook hamburger" is a constant task. The pathway will contain the beginning and ending of the task.



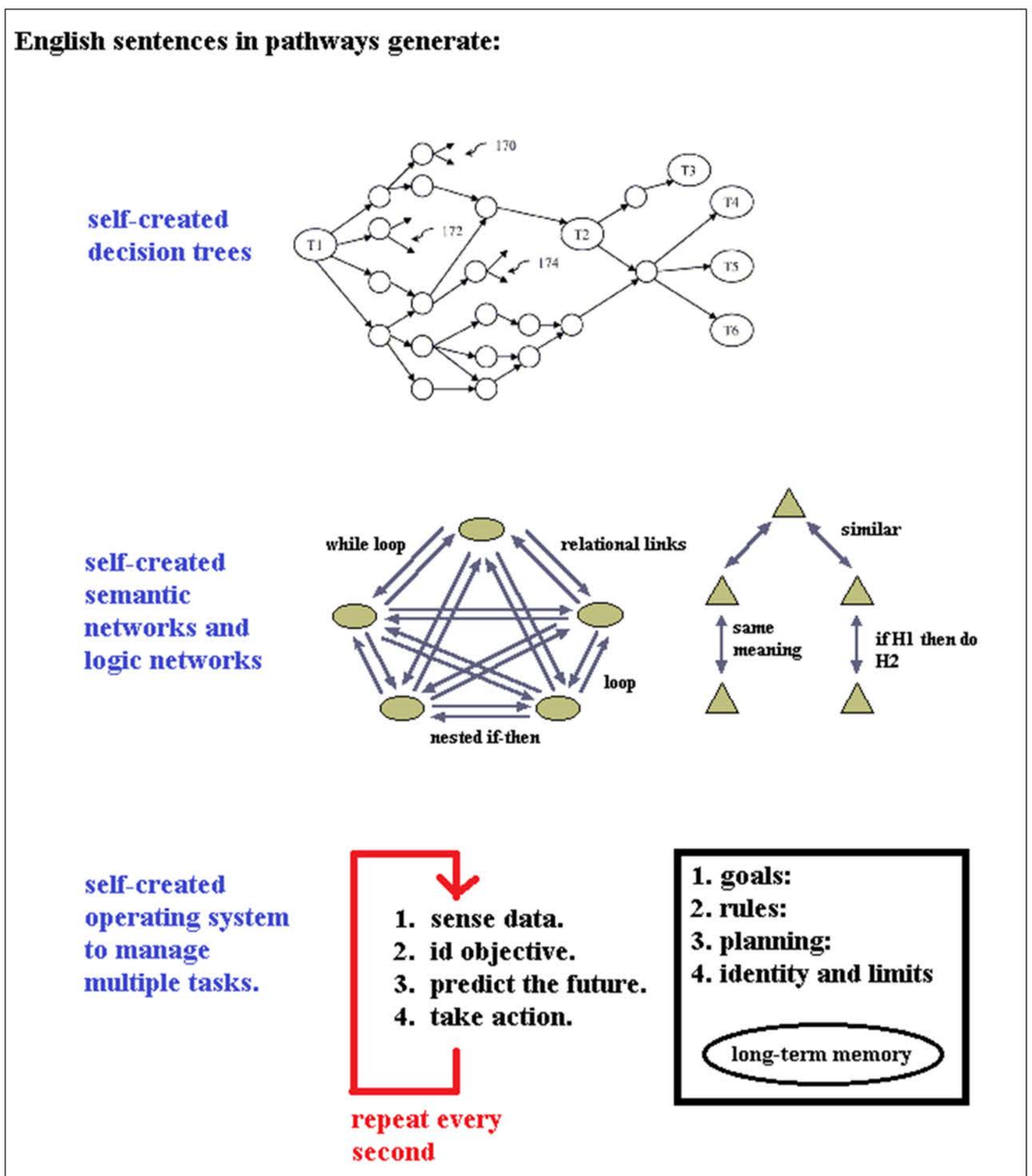
The pathways in memory can form for-loops, while-loops, if-then statements, and-statements, or-statements, assignment statements, sequence data, recursive functions, classes, procedures, random data, static data and all the different combinations. The pathways are also able to form any type of computer program, including: databases, expert systems, genetic programs, and AI programs. Simple computer programs like a word processor or complex computer programs like the internet can form in pathways. These sequence data can even form self-learning and self-accomplishing behavior to solve arbitrary problems.

The intelligent pathways can do anything that a state machine can do. Self-organization between similar intelligent pathways is the tool that defines the state machines.

The diagram below shows various elemental neuron structures. These elemental neurons are exactly the same as different types of pathways. In computer science they teach you that operational functions like for-loops, if-then statements, while-loops, OOP, recursive functions, or-statements and so on are the elemental building blocks to any computer program. Neurons in the human brain work exactly the same way. These elemental neurons build on top of each other (based on learning) and form complex structures in the human brain to think and act.



The pathways store possibilities of life experiences so self-created decision trees are automatically created in the robot's brain. Language in pathways also form self-created semantic networks, database systems, operating systems to manage multiple tasks, or logical network systems.

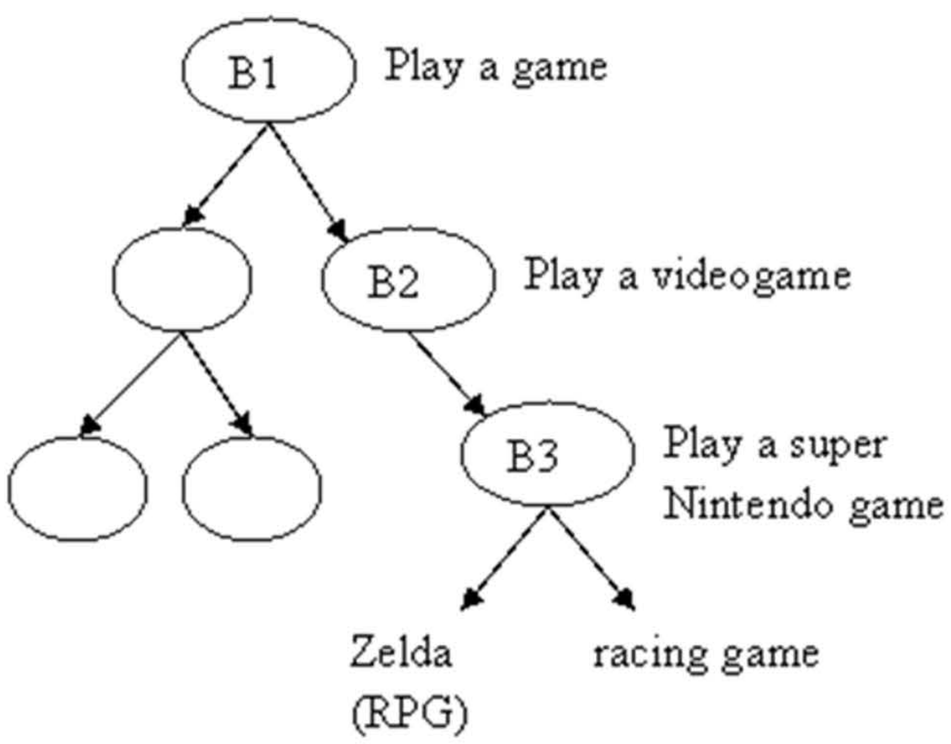


Pathways build on top of each other to form complex intelligence

As the robot learns information from school, pathways in its brain become more complex and intelligent. It becomes self-aware after a certain point (about age 3) when it begins to make its own decisions based on pain and pleasure. FIG.13 shows a really complex pathway to play a game. This pathway contains linear instructions and decision making in terms of playing "any" game. I will go into the details of this diagram later on.

All human tasks have one commonality: every human task is like a game, they have rules, goals and procedures. As the robot learns different skills, these skills self-organize in memory and form massive network of forests and trees, hierarchically structured. Games and human skills are structured hierarchically based on similarities. Skills like driving, playing sports, playing board games, playing video games, or cooking self-organize and form a hierarchical structure.

FIG. 13 Hierarchical structure of playing a game



Referring to FIG. 13, pathway B1 is a universal pathway to play any game. The steps in B1 are very general, in that, all games played have these linear steps. If you observe a sports game or a board game, they have these general steps. B2 is a more general pathway to play a game. In this case, B2 represent playing a video game. All the intelligent pathways (B1-B3) are all encapsulated and structured in a hierarchical manner so that the data goes from general to specific. Intelligent pathway B3, on the other hand, record detailed steps to play a specific game. If the game is the legend of Zelda, the steps to playing this game are different from the steps to playing a racing game.

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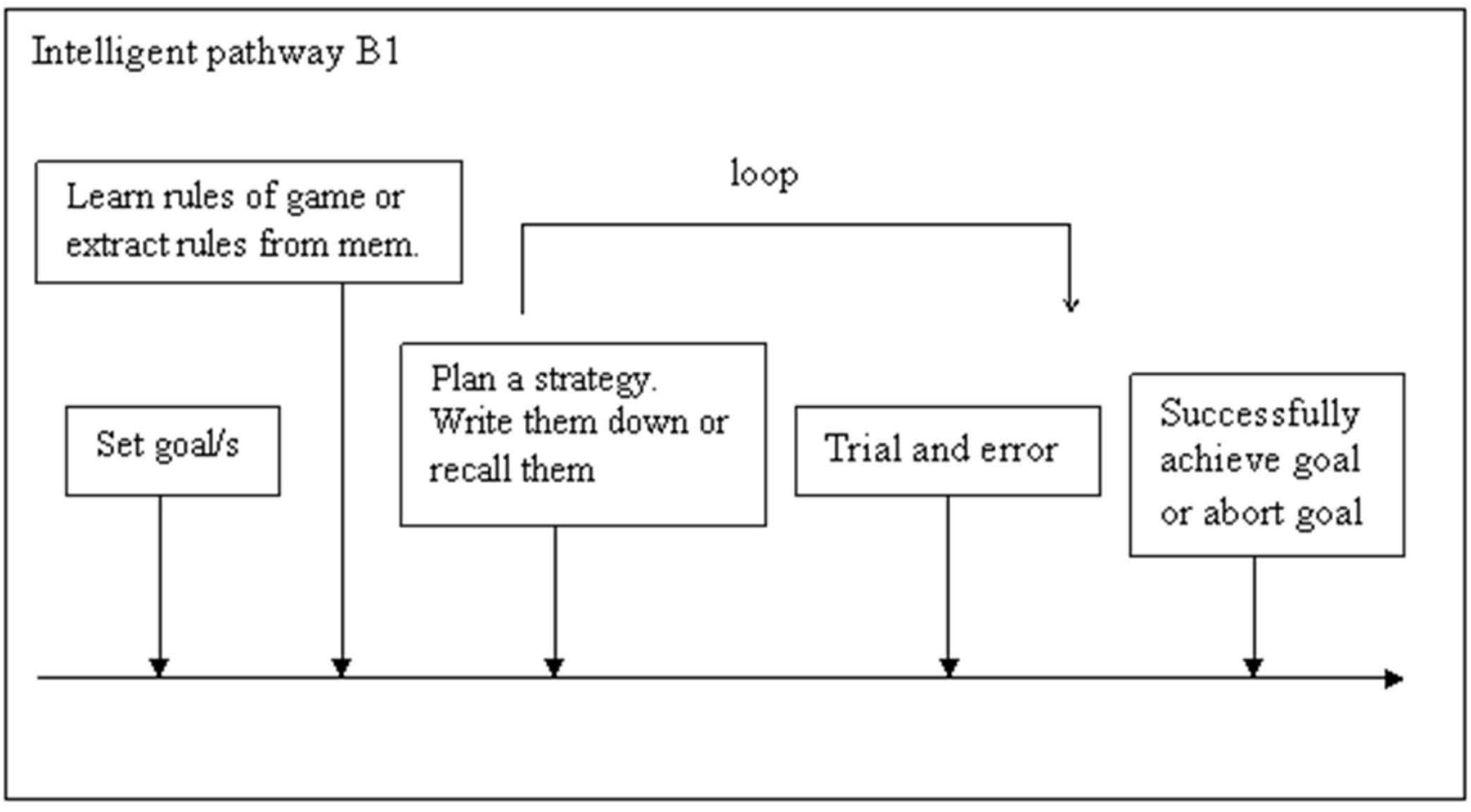
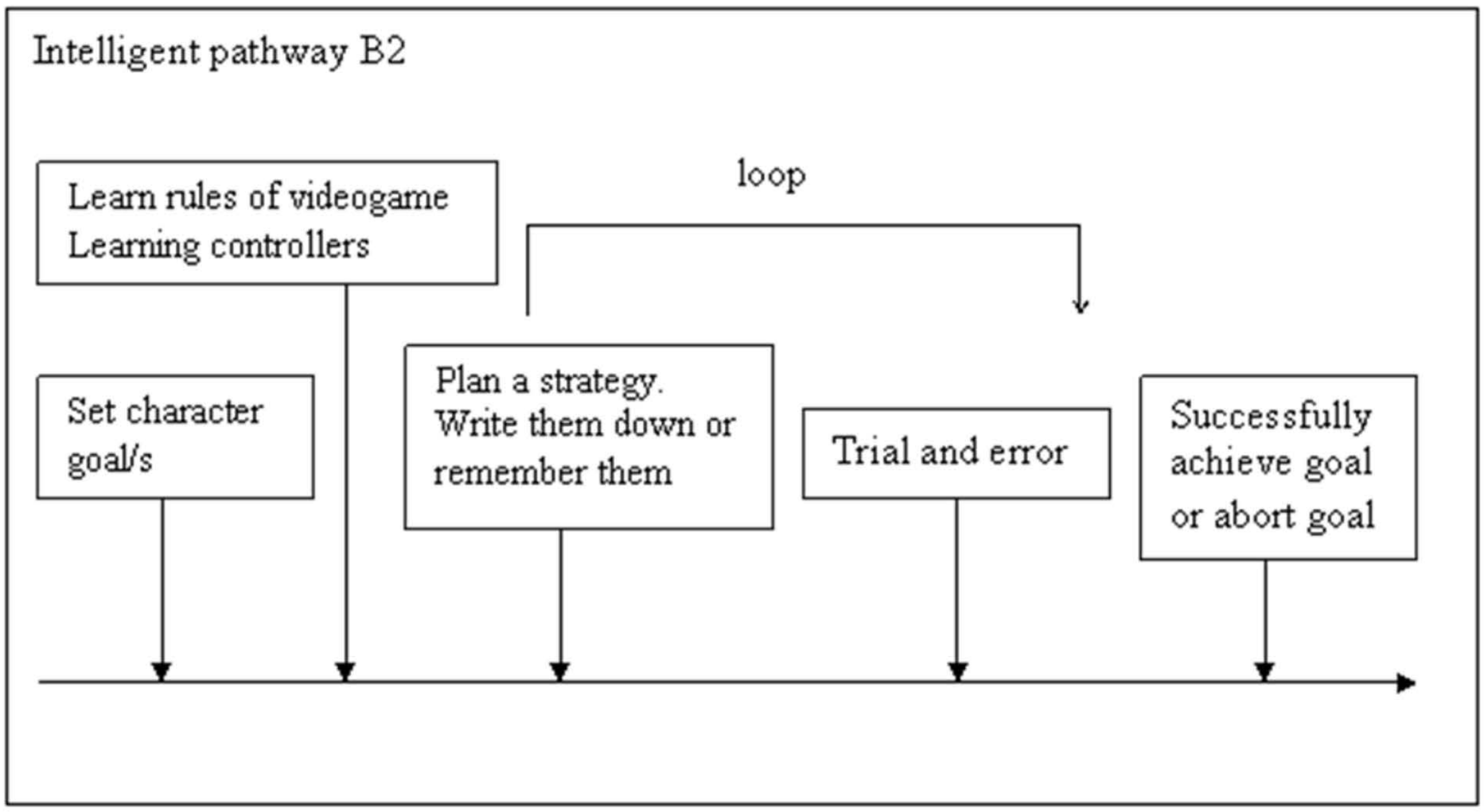




By the way, Pathway B1 is learned from teachers in school. Teachers teach the robot how to play a general game. Obviously, the first step in playing an unknown game is to seek out the rules and objectives. Next, after understanding the rules and objectives of a game, the robot can practice to refine his skills. After several tries the robot will have the knowledge to play an unknown game.

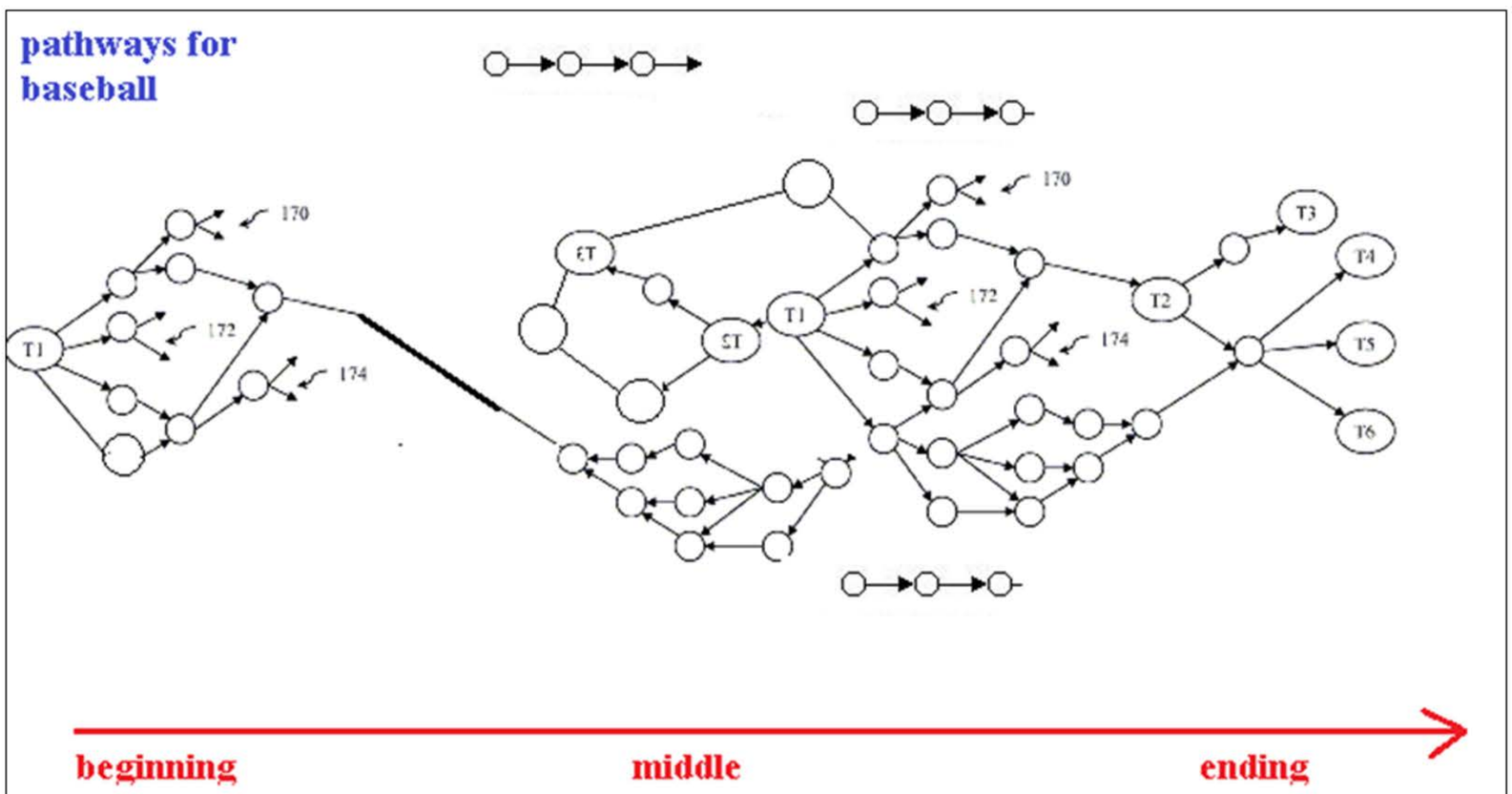
Let's say the robot has never played video games before and doesn't understand how it works or what the objective of the task is. The robot will use pathway B1 to learn how to play video games. After many weeks of practicing, pathway B2 is created in memory. Next, the robot wants to play a new type of video game called Zelda that it has never played before. He will use pathway B2 and B1 to learn to play Zelda. After several hours of playing, the robot created pathway B3 in memory.

This is how the robot learns by itself without any guidance from teachers. Pathway B1 is very affective because it allows the robot to teach itself how to learn.

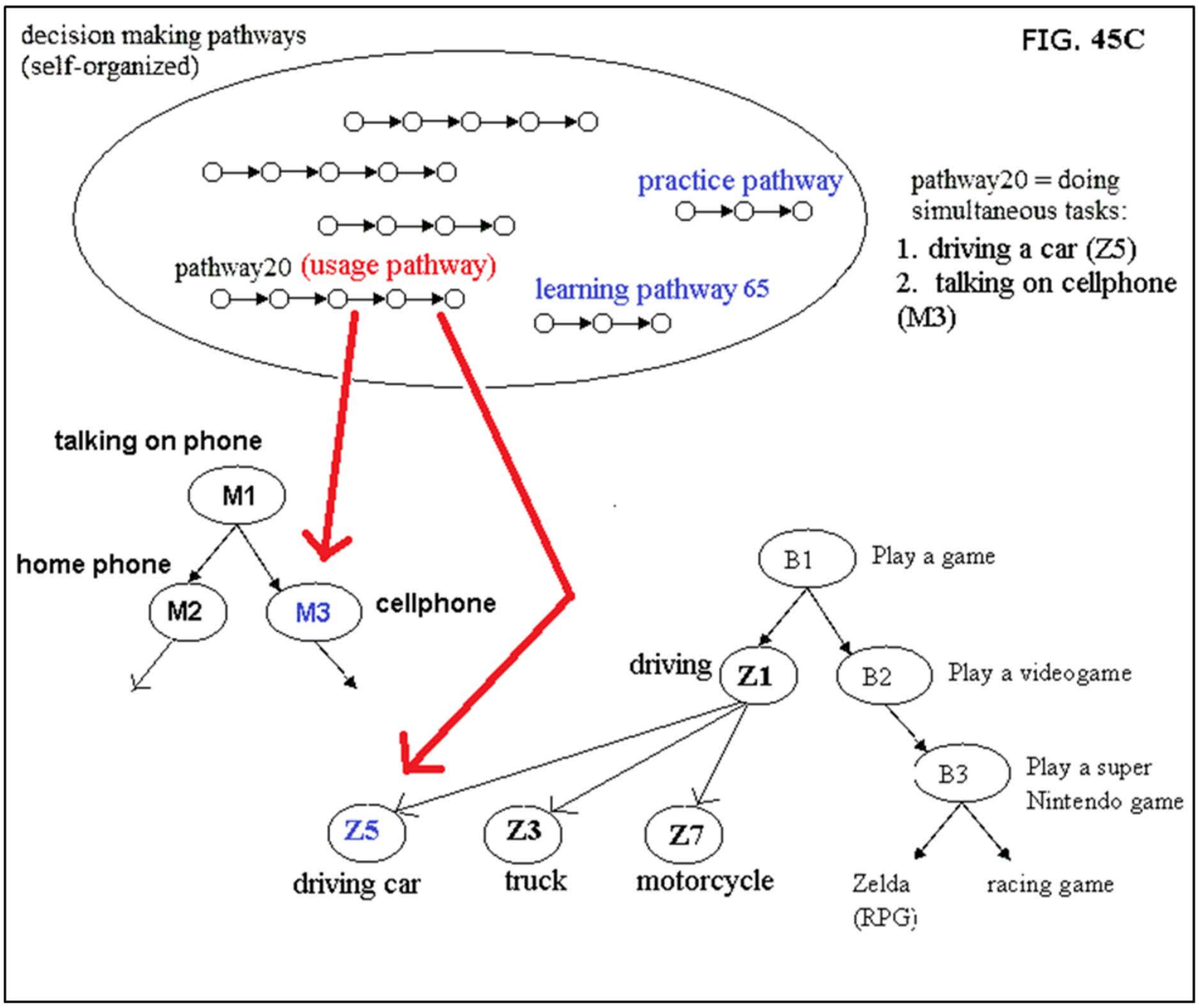
Pathways are clustered and stored in a timeline/s
Another important thing to remember is that in a given task, like playing baseball, pathways are stored in clusters in a timeline. Pathways are stored at the beginning, middle, and ending of a game and depending on the time and situation, the robot's brain extracts different pathways. For example, at the beginning of the game, the robot will extract pathways to follow instructions from a coach. At the beginning of a baseball game, the coach will give the batting lineup and player positions. In addition, there are some rules and objectives that are given, like the batting signals and how hard to play the game.

Another example is driving a car. Pathways for driving are also stored based on a timeline. At the beginning, middle, and ending of driving there are specific rules and procedures to follow.

This is basically how my robot manages complex tasks. It uses the pathways as a way to separate individual procedures of a job. At the beginning you do this, at the ending you do this, in this situation you do that, if you're playing as the pitcher use these pathways, in multiple situations you do this, if you identify a street light you do that, etc. It can also perform multiple procedures and multiple objectives, by switching back and forth and systematically managing recursive tasks and rules.



Every human task has different decision trees. And these decisions tree comprises massive forest and trees, connected or separated. These pathways can form any type of computer program or function to accomplish a task, regardless of how complex they may be. Writing software programs for Microsoft is a very complex human task and it spans all skills and knowledge. In some cases, the whole brain will light up because it is accessing information from all cognitive skills in order to do something complex like write software programs.



This is a visual overview of what the memory part of this robot's brain looks like and it is very similar to neuron structures in a human brain. The data stored in memory are pathways, which are linear sequences based on the human 5 senses: sight, sound, taste, touch and smell. There are other data stored in pathways, which are: hidden data, activated thoughts, and pattern data.

By the way, pathways store linear data, as well, as static data. Static data is classified as objects existing in linear data. A 2-d picture is a static data that exist in a linear movie sequence.

Each pathway is structured hierarchically and stored in memory based on 2 factors: object association and hierarchical similarities. One example of object association is meaning to language. For example, the text "cat" is associated with a visual image of a cat and these 2 objects will gravitate towards each other because of association. An example of hierarchical similarities is human skills. Driving a car is similar to driving a motorcycle. Since these two skills are similar their respective data gravitate towards each other.

The purpose of pathways is to store life experiences in a fuzzy logic manner, whereby data are structured hierarchically and they share information. For instance, if the robot learns 10 million different cat images, each cat image is structured hierarchically and they share information, forming something called a cat object. All data is stored using fuzzy logic.

This memory graph isn't a neural network (FIG. 45C). There are no input layer, hidden layers or output layer, as depicted in traditional neural networks. Each pathway sensed by the robot is broken up into a hierarchical tree (aka encapsulated tree) and stored in memory; and they self-organize in a 3-d grid based on 2 factors: object association and hierarchical similarities. There are no training involved or inputting massive data sets (machine learning or deep learning).

This robot simply learns all knowledge through school; and by interacting with the environment. The robot learns decision making, social skills, generating common sense knowledge, induction and deduction reasoning, solving problems, learning knowledge, practicing a new skill or old skill, and understanding natural language by going to school and learning from teachers. Things like decision making or predicting the future isn't a function written into the A.I. program, these are skills learned in school.

Let me give several examples. In the decision making pathways is pathway 65, which is a learning knowledge pathway. This pathway allows the robot to learn information through books or lectures. If the robot doesn't know how to drive a car, he can seek that knowledge by reading books or attending driving school. Teachers taught the robot how to seek knowledge in books and identify important information like identifying rules, goals and procedures of driving.

Next, pathway34 is a practice pathway. Teachers in school taught the robot how to practice a new skill or improve an old skill. If the robot has the knowledge of driving and he understands the rules, goals, and procedures, then the next step is to practice so he can store linear procedures in memory to drive a car.

With pathway65 (learning knowledge) and pathway34 (practice pathway), the robot is able to learn a new skill.

Pathway20 is a decision making pathway to do 2 simultaneous tasks. The first task is to drive a car and the second task is talking on a cellphone. This pathway manages 2 tasks simultaneously by switching between tasks until both tasks are completed. Pathway20 is universal and can be used to do any 2 tasks and references task1 and task2 from various parts of memory.

Referring to FIG. 45C, every data in memory are hierarchically structured. This is the end result.

After 21 years of learning, the decision making pathways are located at the top, which controls all decision making and intelligence for the robot.

Below the decision making pathways are the individual tasks, all self-organized in a 3-d grid and structured hierarchically. And below the task pathways are the static data, other reference recursive-pathways, and knowledge, all broken up into recursive parts.

The top layer, the decision making pathways, allows the robot to be self-aware and gives it the freedom to choose and make its own decisions. Pain and pleasure will determine what actions to take and the main function of the robot is to always take action that will lead to pleasure.

Conclusion:

Thus, all knowledge learned by the robot comes from teachers in school. Learning knowledge from books or lectures come from teachers. Practicing and learning procedures of a skill comes from teachers in school, making decisions also come from teachers in school. Even learning to play a general game comes from teachers in school. If the robot doesn't know how to play a game (doesn't know the rules, goals, or procedures of a new game), teachers teach the robot how to seek out knowledge and to use trial and error and common sense to play an unknown game. Even something like adapting to a changing environment or doing a similar task are all learned from teachers in school. If the robot has his right arm chopped off, he can still make a sandwich -- by adapting. Teachers in school "teach the robot how to teach itself to learn".

One example is writing software programs. If the robot was given an assignment to write a customer database system using a binary tree, the robot has to take knowledge about binary trees and take knowledge about software engineering to write the source codes. This shows that the robot can take 2 very complex concepts and merge them together. Again, teachers teach the robot how to merge two (or more) tasks together.

If you think about it, the voices in a human mind is actually the accumulation of lessons learned in school from kindergarten to college. All lessons from teachers are averaged out and self-organized in the robot's brain. The voices in a human mind is like an invisible teacher that gives a person intelligent instructions to take action, under any given situation.

Example of learning information in terms of a bootstrapping process (learning to write a book):

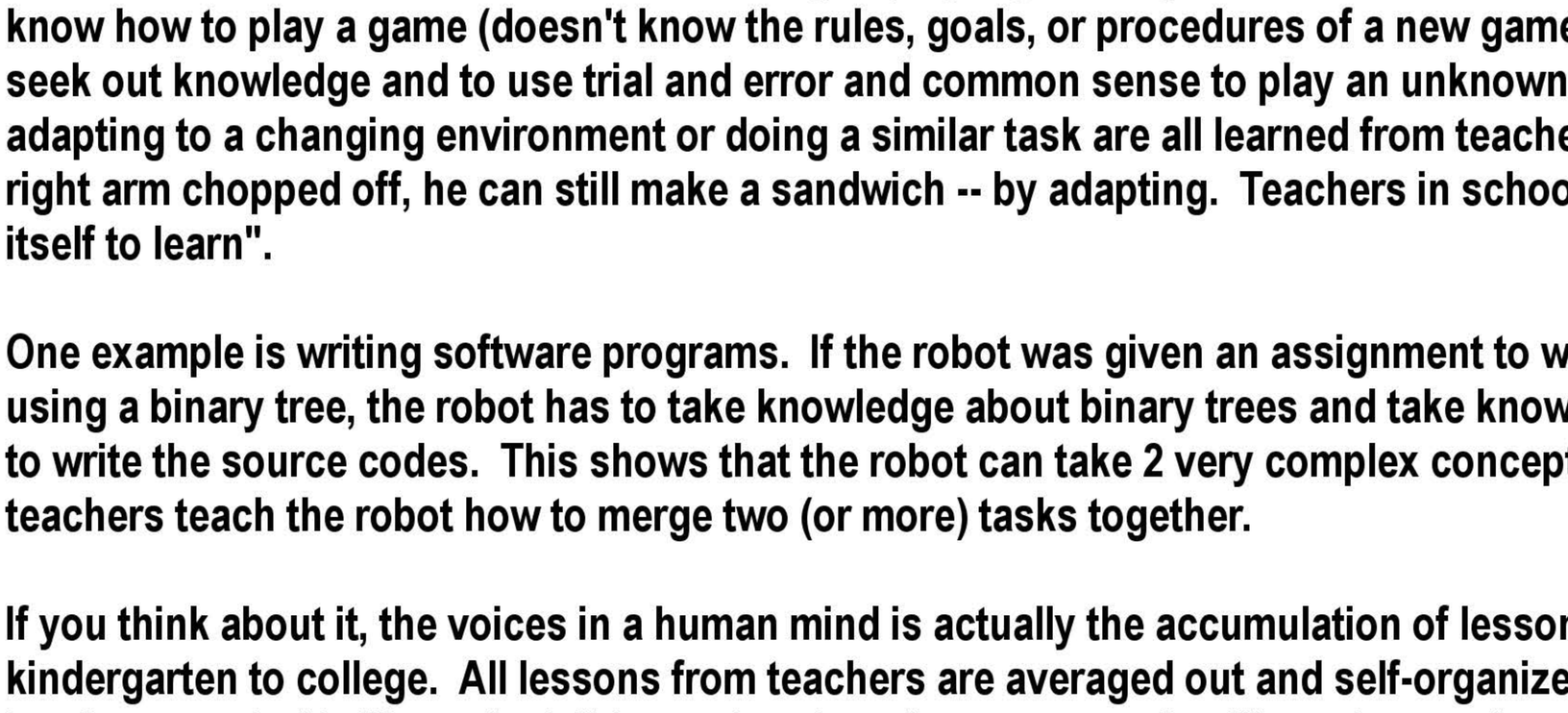
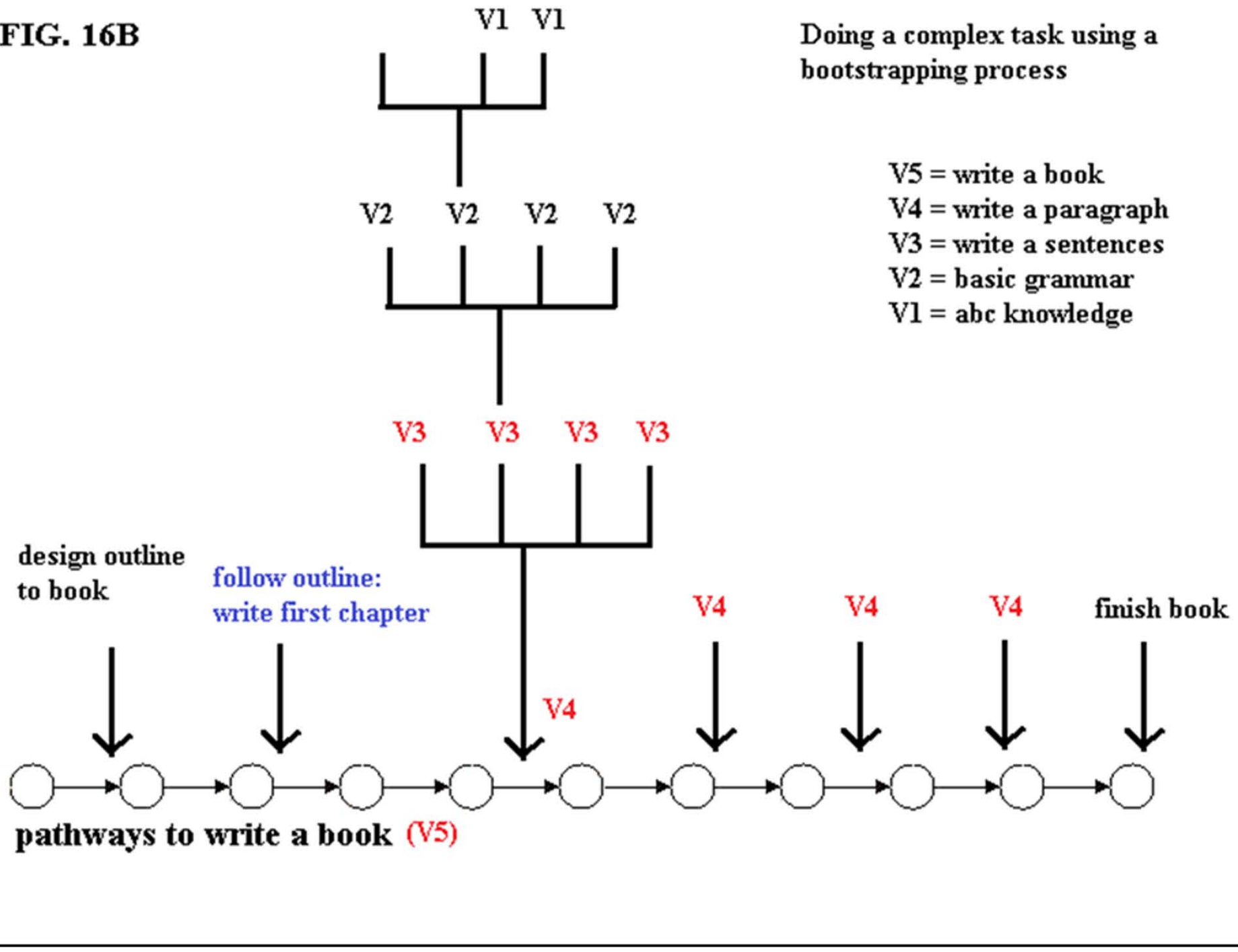


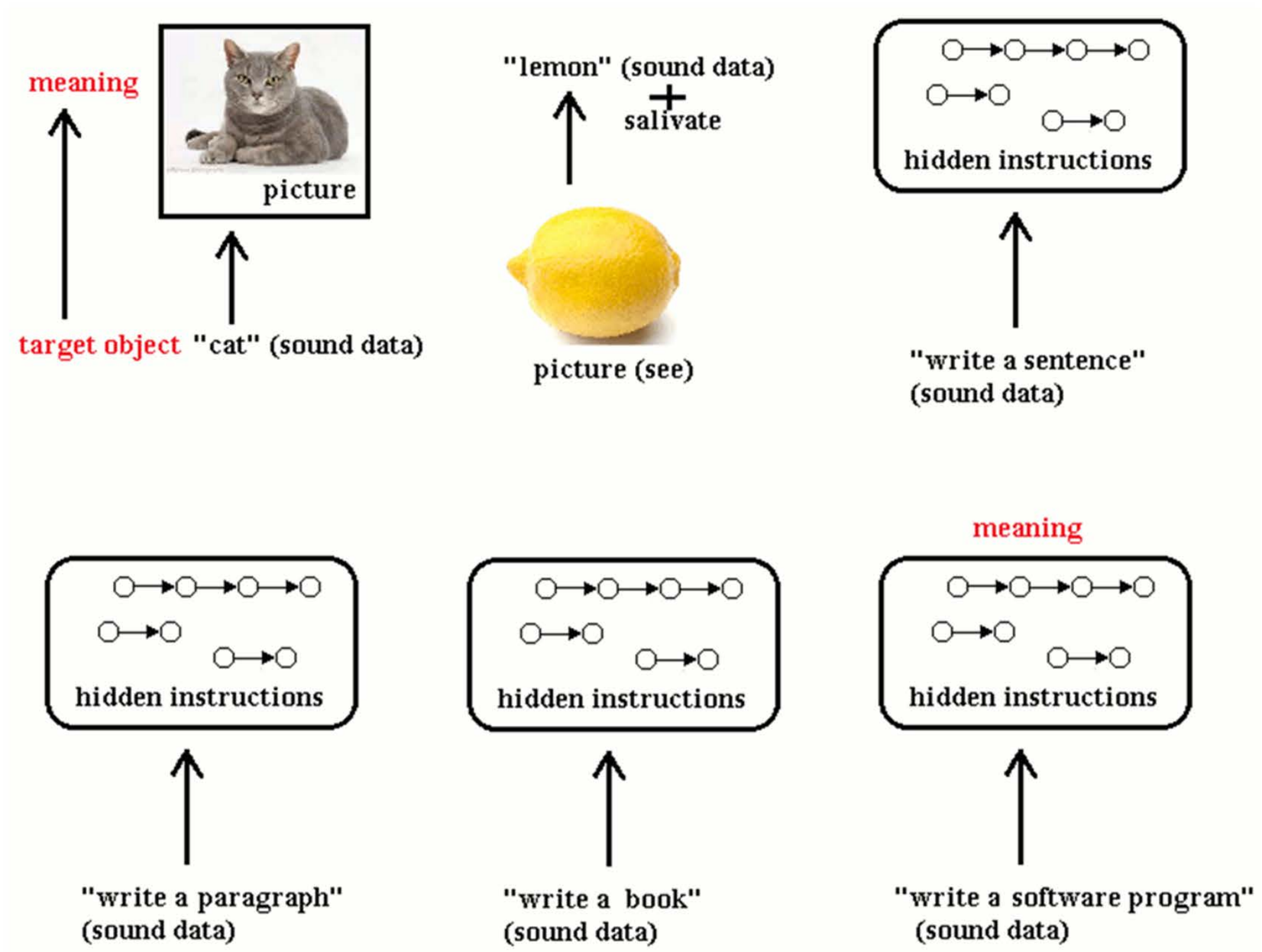
FIG. 16B



Language encapsulate entire knowledge and allow the robot to learn different skills in a bootstrapping manner. FIG. 16A shows a diagram depicting how the robot learns to write a book. English sentences are used to encapsulate entire instructions, called pathways.

Referring to FIG. 16A, first, the robot learns to write words and understand basic grammar rules (V1-V2). Next, he takes those skills to write a sentence (V3). Then he takes the knowledge of writing a sentence to write a paragraph (V4). Finally, the robot takes previous knowledge to write a book (V5). Notice in FIG. 16B, said robot is using previously learned skills to write a book (V1-V4). For example, he is repeatedly using basic grammar rules, writing sentences, and writing paragraphs to write a book. As you might recall, writing a paragraph requires writing several sentences and using basic grammar rules.

English sentences represent a task or sub-task. Sentences is a fixed object that can represent a fuzzy or abstract concept. There are many cats in this world, coming in different sizes, shapes, and 3-d animation, but the word cat is a fixed object to represent a broad range of the species.



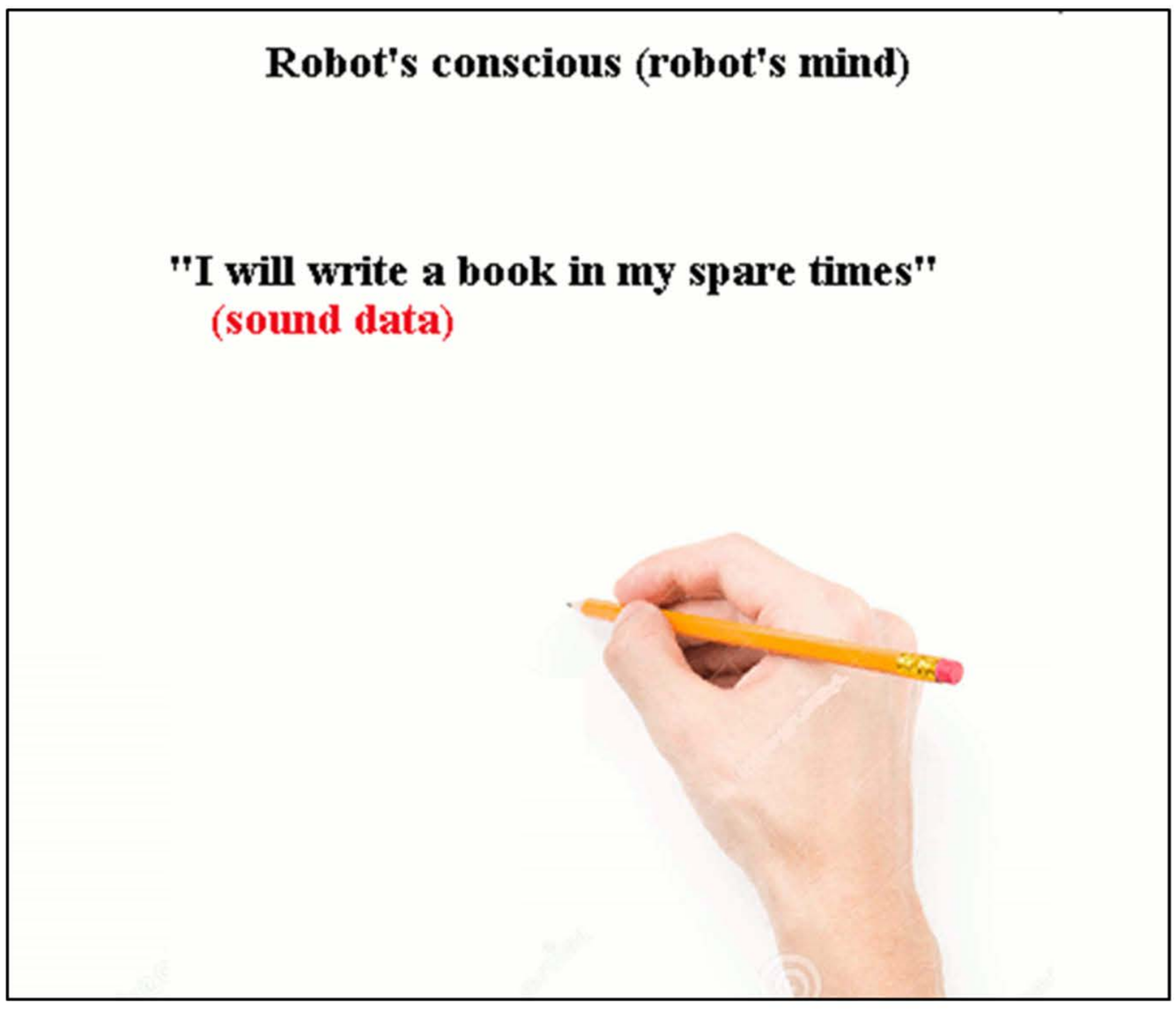
We live in a chaotic world. Language brings order to chaos.

In this case, sentences are used to represent or encapsulate very complex tasks. This type of encapsulation allows complex intelligence to form in the human brain, and enabling us to solve college level problems.

FIG. 11 depicts several examples of words and sentences representing abstract objects or actions. When the robot senses the target object, the meaning automatically activates in his mind. A simple example is shown in the first 2 items. If the robot hears the sound "cat" the meaning to the word will activate in his mind. In this case, a picture of a cat or a primitive cat movie will activate in the robot's mind. In the second item, a picture of a lemon is sensed by the robot and the meaning to the picture activates in his mind. For the robot, the sound "lemon" will be heard in his mind. Also, the picture of a lemon causes the robot's saliva to secrete from his mouth. This is because sour and the sound "lemon" has strong association with a picture of a lemon.

Sentences can also represent very complex instructions. The sentence, "write a book(V5)", encapsulate the entire instructions to write a book. The sentence, "write a paragraph(V4)", encapsulates the entire instructions to write a paragraph. As a reminder, writing a book(V5) utilizes (V4) repeatedly and V4 uses V3 repeatedly and V3 uses V2 repeatedly. The English language allows the robot's brain to recursively encapsulate groups of instructions to a fixed media, which is a word or a sentence/s and allow knowledge to form complex structures.

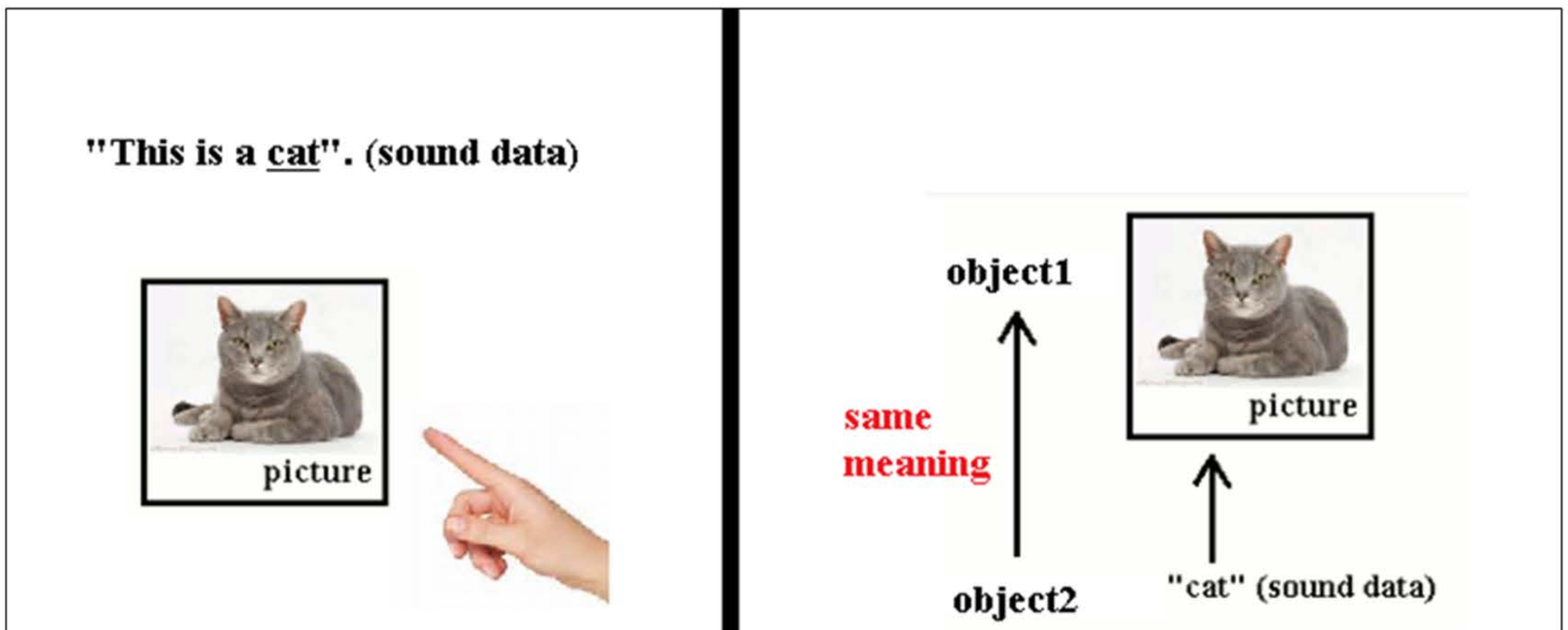
When the robot is making a decision and the sentence: "write a book in your spare times", activates in his mind, the sentence encapsulate all the complex instructions to write a book. That one sentence represents all the knowledge the robot needs to write a book. This sentence is also known as an internal instruction, given by the robot, to itself, to take action.



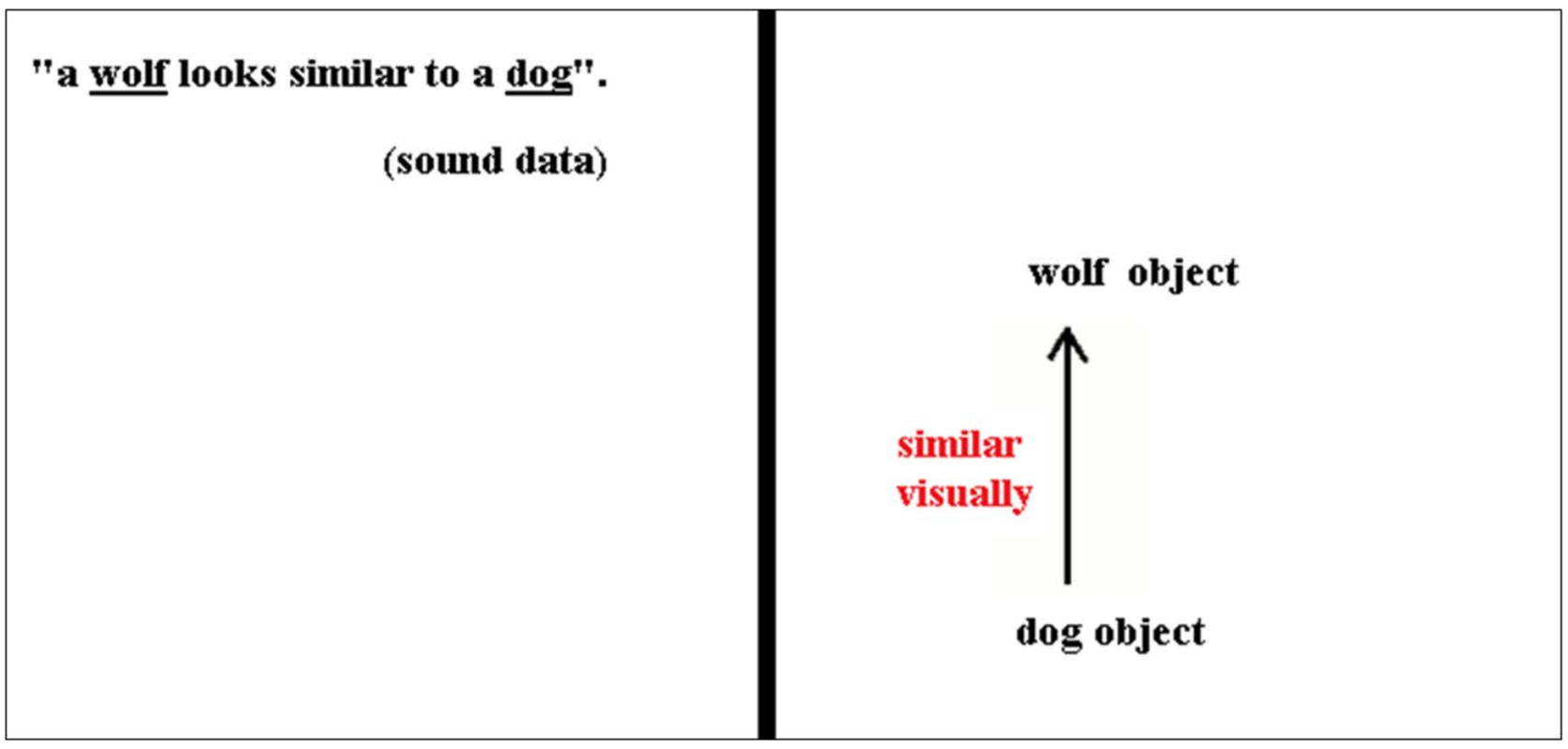
Other topics:

English sentences structure data into self-created semantic networks

A sentence like “this is a cat” has patterns. The pattern is, in memory, the location of the word cat and the visual image of a cat is located really close to each other. This sentence basically helps the robot to organize and create data in memory. If the robot has never encountered a dog before and the teacher points to a dog as says “this is a dog”. Based on the sentence the robot’s brain will create 2 objects in memory: the visual image of a dog and the sound data dog. These 2 objects will be created and stored close to each other in memory.
This is a ----

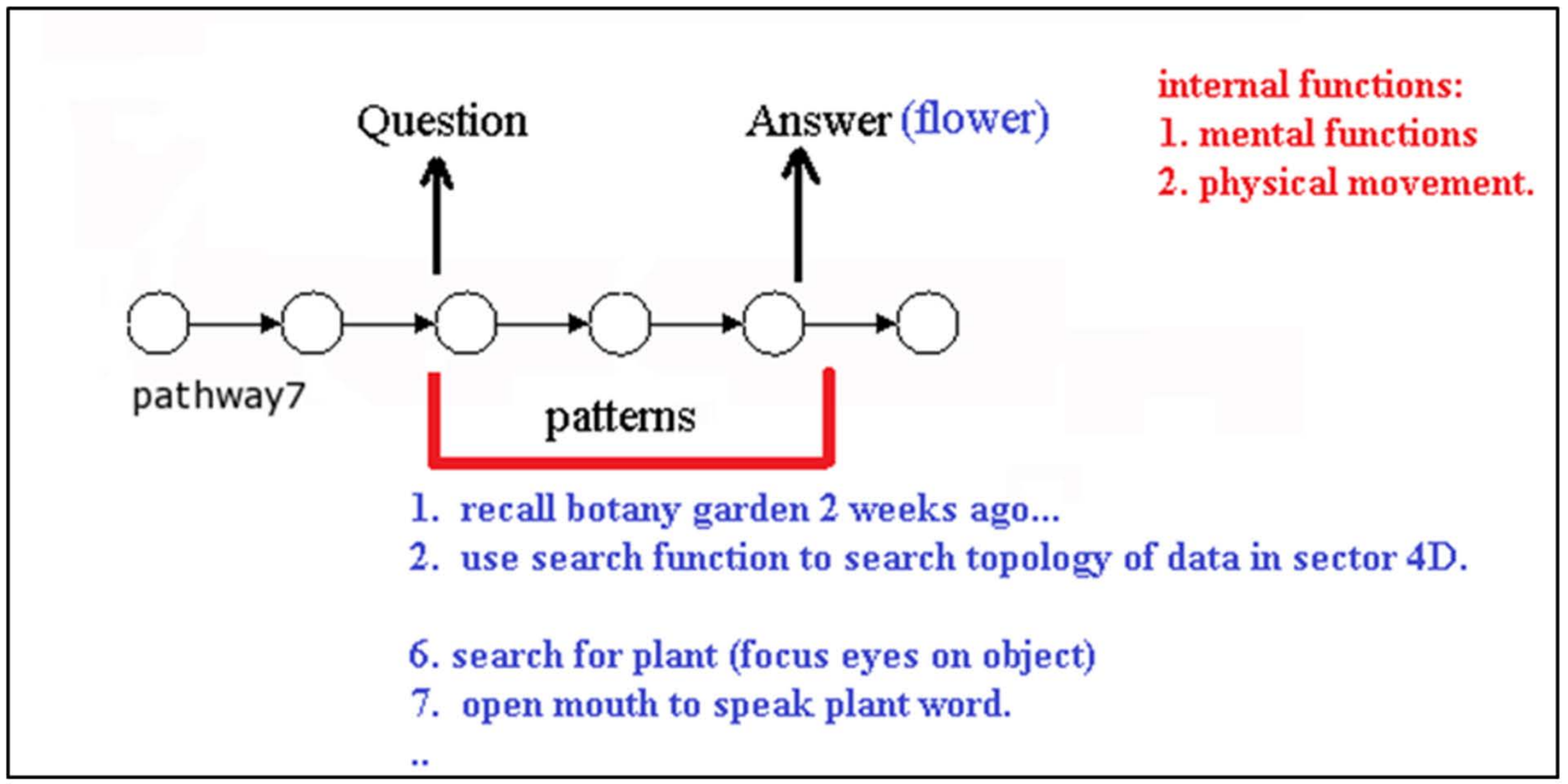


A sentence like “a wolf looks similar to a dog” also has patterns. The robot will find the patterns and attach them to the sentence structure: a R1 looks similar to a R2. In memory, the robot’s brain will establish relational links between the 2 objects: wolf and dog. The relation is that both objects are visually similar.

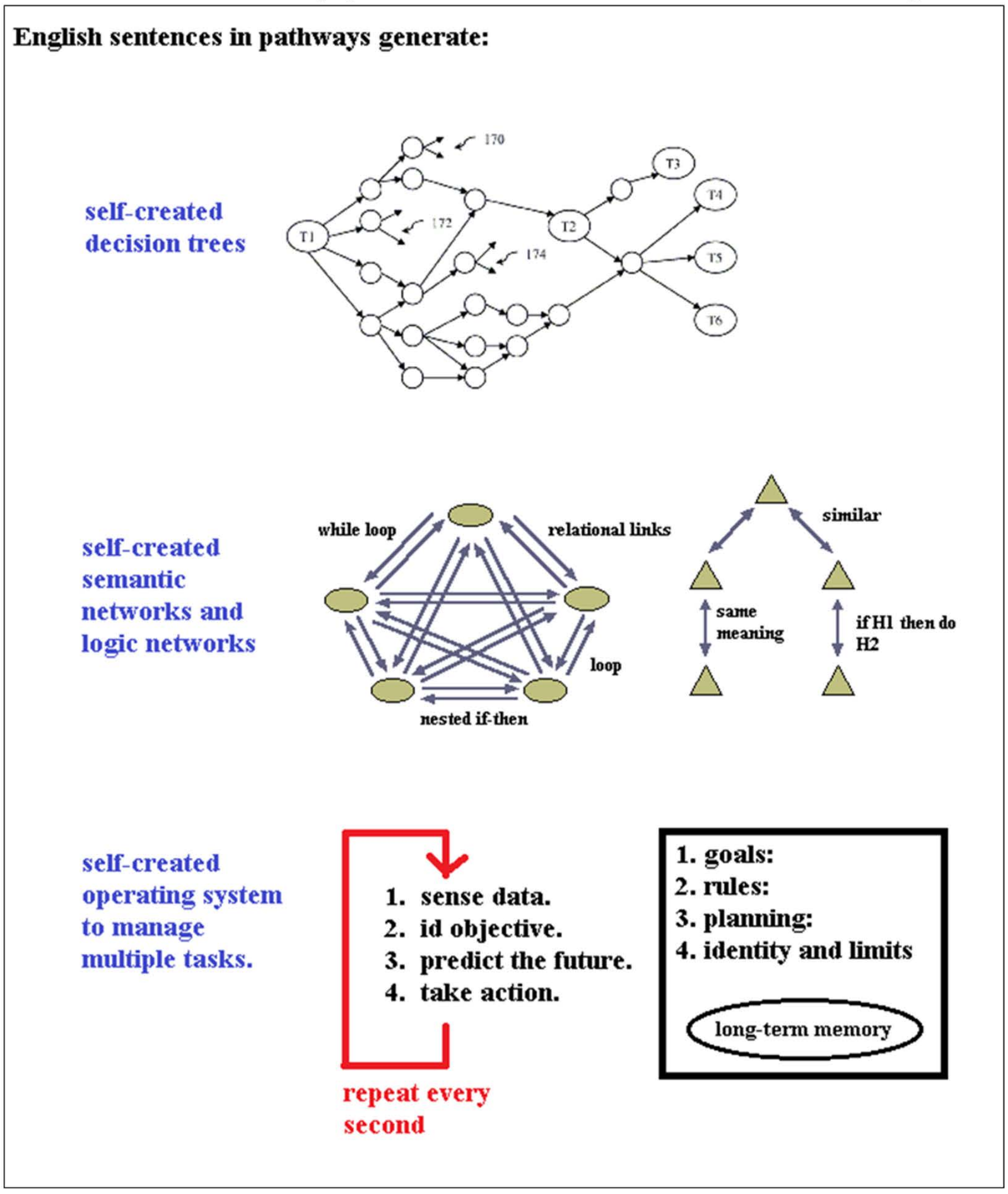


English words and sentences is the strongest objects stored in pathways because they are fixed and never changes. The meaning, which is attached to these words, might change or could be abstract. Each pathway stored in memory self-organizes with similar pathways and patterns are discovered. The internal functions are used to represent these patterns. I listed many internal functions in my patents, among them are: 1. rewinding/fast forwarding in short-term memory, topology structure of data, 5 sense attributes, body movements, eye focus, etc.

Diagram 4C, shows a QandA problem. The A.I. program has to find the complex pattern between the question and answer. In this case, the robot found patterns between similar pathways in memory. The robot needs to look in short-term memory to find data and to search in a specific area in memory to extract the correct data. I mentioned hundreds of these internal functions in my patent application. These internal functions allow the pathways to form intelligence which permits the robot to control its mental as well as physical actions.



The point I'm trying to make is that English sentences generate self-created semantic networks in the robot's brain. Data are organized in complex data structures based on English sentences. Decision trees are structured into decision making semantic networks. Data inside the brain establishes relational links and operations like a semantic network; and search functions are discovered on its own to search for data in these semantic networks. Even things like logical networks, decision making systems, and induction and deduction reasoning are self-created.



Deep learning applied to pathways

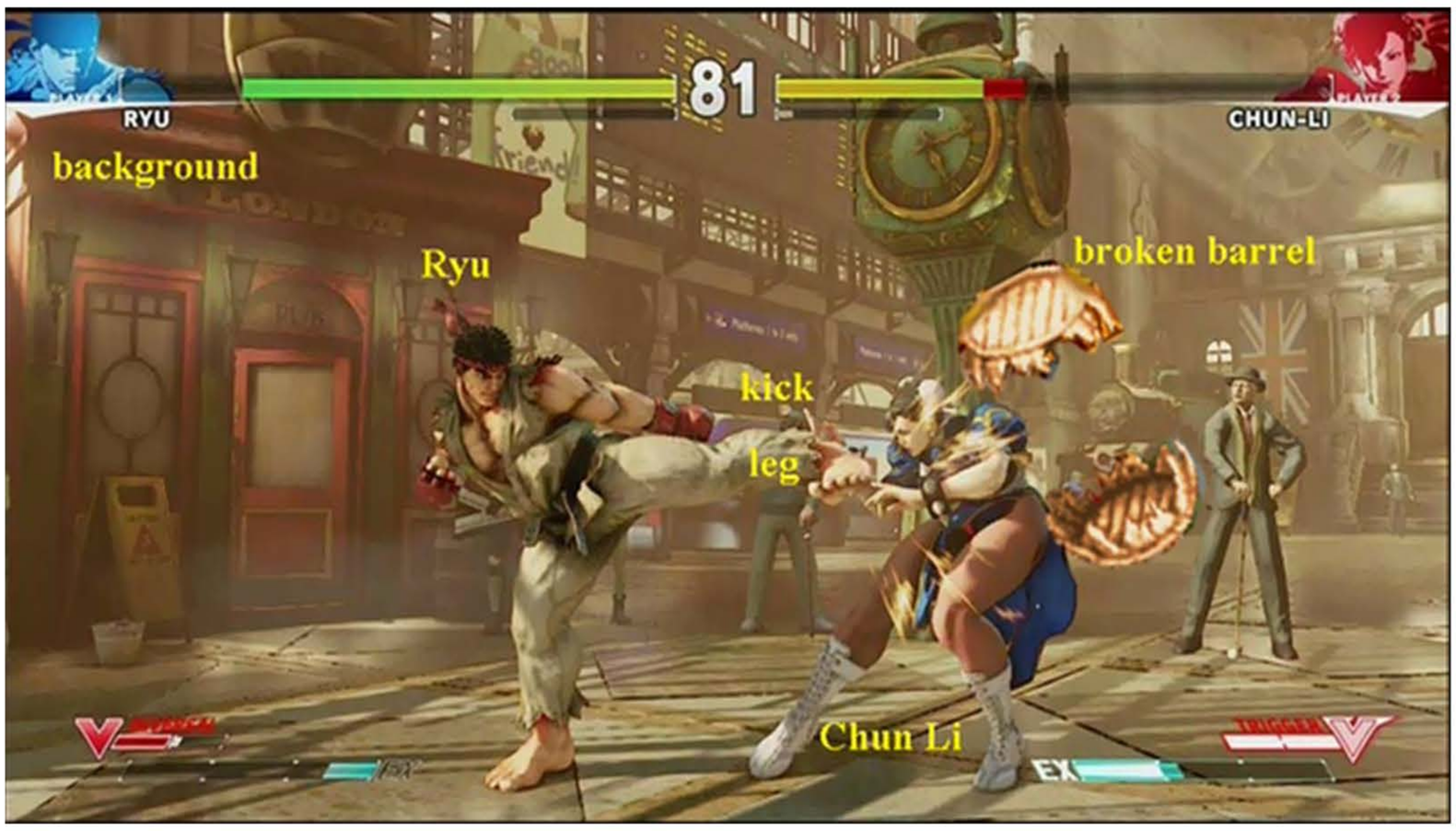
Details about intelligent pathways
Pathways, or movie sequences, are stored in the robot's memory every second. Each pathway is structured hierarchically and self-organizes in memory.

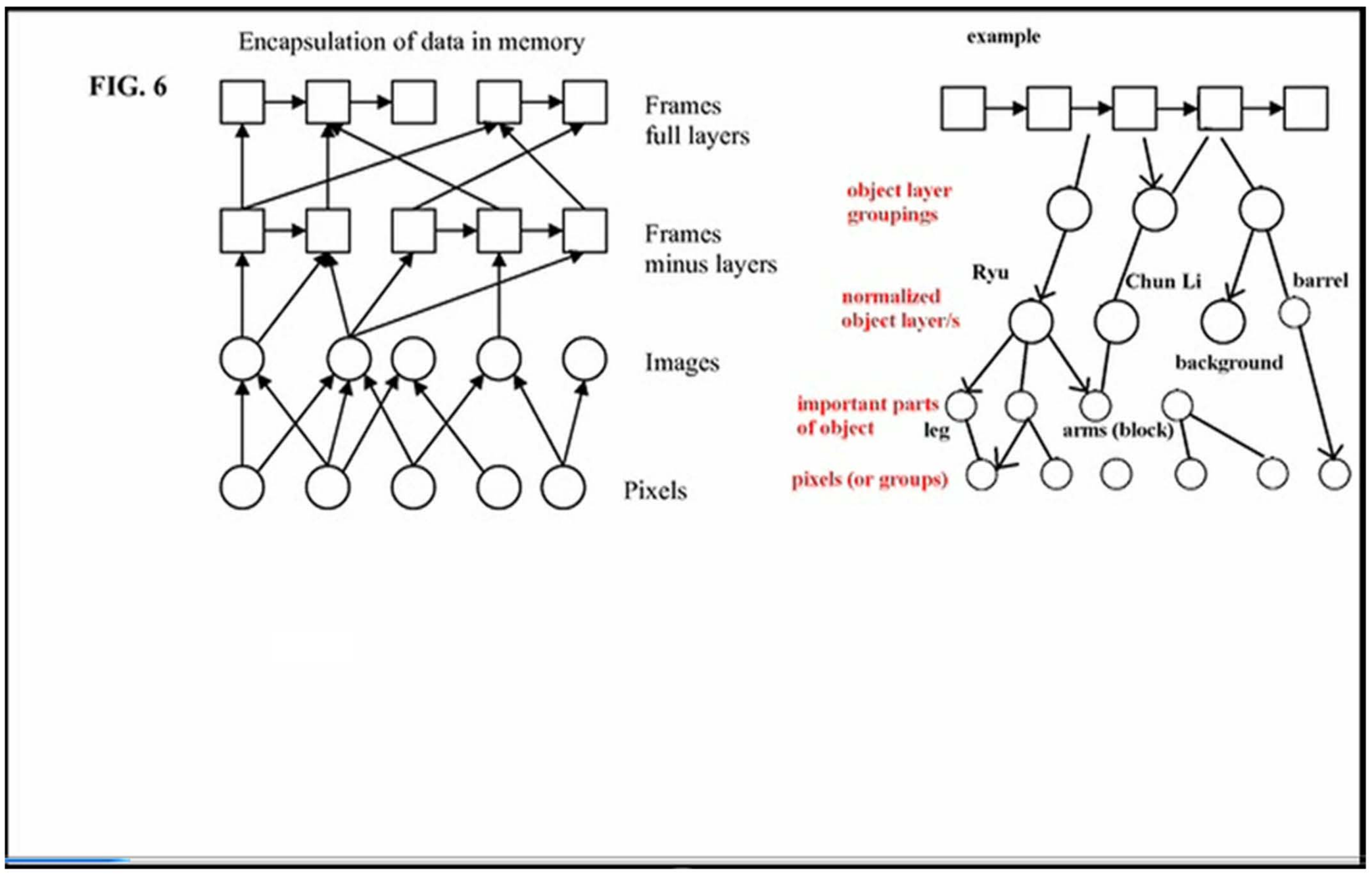
If the robot was playing a video game like street fighter, his brain will identify important objects in the game that causes future events. in this case, the 2 characters have top priority. Within one of the characters, the left leg is important. Thus, the robot's brain recursively break up important objects, and, structure the pathway in a hierarchical tree. There are techniques that the robot's brain uses to identify important objects and actions in an experience. 1. applied intelligence via the robot's conscious. 2. stored data, through the search process. 3. using the robot's brain's build-in, image processor.

Reinforcement learning is also a technique to identify important objects and actions. Any objects that cause pain or pleasure should be classified as important objects. In each object, like Ryu 's leg, the brain tries to identify parts of a person that are important. Thus, the robot's brain tries to find important objects, recursively, that cause pain or pleasure or changes the course of future events.

In this situation, the background isn't important because it doesn't cause the game to go in a certain future direction. The background could be anything and it will not affect the outcome of the game. However, one of the objects in the background is important, which is the barrel. And the barrel does change future events so it is a medium important object.

Thus, the robot's brain identifies important objects based on learned intelligence and by, my built-in image processor. It then creates a hierarchical tree and structure object layers based on its importance. The important objects float to the top and the least important objects float to the bottom. The robot's brain will determine the permutations and combinations of object layers and which, and how much, object layers should be stored in a hierarchical tree.





Relevant videos or websites:

http://www.humanlevelartificialintelligence.com

This document is a summary of Human-Level AI. The website above contains my 5th book, entitled: Human-Level Artificial Intelligence: second edition (2007) . If you want a detailed description of my invention, you can read the book free of charge on my website.

Here is a video describing the data structure to Human Level Artificial Intelligence. There are 2 parts to the video and the entire video is about 1 hour long. If you're short of time just watch this video and it will explain what this technology is and how it works.
http://youtu.be/lFk8iGA7ETg

Here is a quick video demonstration on how my robot thinks. Hypothetically, it shows the internal thoughts of the robot's brain while doing various human tasks (like playing a video game).
http://youtu.be/PkyRSgqRQfE