THE COMPUTER PROGRAM

OF THE

HUMAN MIND

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THE COMPUTER MODEL

OF THE

HUMAN MIND

ARTIFICIAL INTELLIGENCE

Although many individuals and organizations have spent considerable time, effort and money toward the development of a model of the human mind, to date none have had any notable success. The human mind is not easily subdued by its own understanding. Numerous university professors have tried and failed to reproduce a working model of the human mind in a machine, some even claiming that it can't be done. Manufacturers of computer hardware and software have sought diligently the secrets of the human brain to enhance their income statements and expand their balance sheets, but have little to show for their trouble. Countries around the world pour millions into research devoted to the development of a model brain for whatever economic or military use they envision from such a discovery, but again, none have met with any real success. Among the many appropriate adjectives that can be used to describe the human mind, there surely must be included "elusive."

The difficulty in designing and producing a replica of man's brain within the computer is no longer due to deficiencies in available hardware or software. The present state of the art in computers and programs is more than adequate to reproduce the functions and operations of the human mind in a machine. In fact, given the capacity of today's computers, and the ability of silicon to operate at speeds far greater than the brains own neurons, in some ways the model will prove more efficient than man's natural brain. No, man's inability to construct a functional model of the mind now stems only from a lack of understanding as the exact nature of the thing to be reproduced-a lack of understanding brought about by some universal, troubling deceptions that man, in his fixed societies, has perpetrated upon himself. Comfortable and secure in his deceptions, man finds it difficult to understand how his brain really works, or to see the self-deceptions that impede that understanding.

Man has listened to his own deceptions so long that he no longer knows what is true about what he has been told about his brain and what he has only been taught to believe to be true. Those who seek to develop a program of the human mind seek to do so while keeping intact the many deception that they have been taught, deceptions which confuse them totally as to the very nature of the thing they seek to duplicate.

Just as man's technology is adequate to program the human mind, man's intelligence is sufficient to write such a program. Man has not failed to date to program the brain because he is not smart enough to do so, but because he cannot psychologically afford to admit to the truths necessary to write the program. Man does not have a programming problem. Man has lived in his deceptions so long that he cannot bring himself to see the reality of his situation long enough to program the true sanity that is his nature. So confused and frightened is man in his many deceptions, that he cannot afford to abandon the ignorance necessary to continue in his deceptions long enough to understand how his mind once worked, and would work without them.

What the mind of man really does expressly contradicts most western religions, and stand as an implied contradiction to all. The type of assumptions that man must make if he is to program hi own brain come as answers to questions that are considered blasphemous if even asked. With his many deceptions and fabrications, man has so altered his own brain that not only can he not recognize himself, but also he can ill afford the recognition. Unfortunately, in the area of dealing with its own self-deceptions, and the ability to recognize these, mankind has progressed very little since the time when Leonardo Da Vinci was forced to write backwards in his notes for fear of persecution, "TALF TON SI DLROW EHT."

People of today are about as willing to embrace a computerized model of the brain, as it really functions, as those of Da Vinci's day were prepared to accept a round world. Man's religions and other beliefs had little trouble surviving the discovery that the Earth is not the cent of the universe, or that the world is indeed, not flat. It is unlikely, however, that these systems would fare so well against the discovery of the truth about the instrument that fabricated them. In order to write a program that contradicts everything that man has been taught to believe, he must overcome many fears and confusions. What profit a man, if he saves the whole world and loses his beliefs in the process.

Unable to admit the truth about his own mind, which would necessarily include the truth about the deceptions that control

it, the scientist turns to his empirical studies to decide exactly what it is that the brain does, and how he can program what he finds. In a totally confused world, this gets him absolutely nowhere. Man will be able to confuse his model brain with erroneous information, and cause it to function just as insanely as present society; but, before he can do that, he must first build the unconfused version, the natural mind of man. And man will learn very little about that natural mind if he continues to believe that today's present confusion is the product of the natural operation of that mind.

It is not the complexity of man's mind that has caused it to elude its own understanding; but rather, it is the sophistication of the deceptions that man has perpetrated upon both the seeker and the sought that stymies the search for that understanding. When man finally becomes willing, through necessity, to face the truth of his own deceptions, he will to understand those deceptions and the natural workings of his own pre-deceived mind.

As man programs the human brain, and then studies and improves upon his design, he will learn much about his own behavior, things heretofore unknowable. However, in order to build his program, he must first understand the nature of that part of the brain that he can program at this time. Just as man will learn much from the brain he programs, he will also learn much from that which he is able to omit from his programs; he will learn much about his own thought process from that which is unnecessary, as well as necessary, to make his model work.

Initially, the only function of the human brain that man will program on his computers will be the unique human capacity to deal in abstract symbols. The prototype of thought in the human mind will be the program that allows the mind to manipulate symbols of symbols, that allows it to recognize and treat symbols of symbols as the mind of the lower animals treat the simple symbol. The part of the human brain to be programmed here is that which deals with the abstract thinking process, not that portion related to the physical needs and desires of the body that houses the human brain.

The program of the human brain will be run in a computer that has no sensory perception whatsoever, a machine run on electricity with no direct way to influence when or if it runs. Most of what the human brain does is quite similar to that of the lower animals, and is directed toward integrating incoming information from its sensory mechanisms and directing the motor functions of the body, and only one of its many functions is that of abstract thought. However, in the initial model of the brain, that is the only function to be addressed.

Since the computer is a machine, it will only "think;" it will not "feel." Later brain builders will find ways to emulate many of the sensory, and even psychological, sensation of the human mind; but that is beyond the scope of this work. The programmer will compensate for the computer for the computer's inability to feel by feeding into the computer that which the brain comes to identify and learn through sensory perception. The programmer will provide the model with a compensating devise for what Helen Keller experienced when she was able to make the association of water independent from the mug and the faucet. Basically, the programmer will provide the model with sufficient information about the symbol as to allow it to be appropriately identified and manipulated. The human mind needs its senses to learn what a thing is. The computer will need to be told.

Without feelings, the computer model of the brain will not have the motivating factors of fear, anticipation, hunger, or sex, but rather will work on simple logic alone. This will be the first disturbing piece of information for man to digest about the brain. His brain doesn't need feelings to think. Feelings are used constantly to influence human thought, both positively and negatively, and thought is used routinely to create certain feelings; but once the brain has learned what it needs from either the body's sensors or feelings, it no longer needs either of these to think. Obviously, feelings help the human survive, and improve the quality of that survival; and thus, feelings are desired and valued. But, as desirable and valuable as all of man's feelings including self-doubt, may be at a point these become unnecessary to pure thought.

Without fear and anticipation to animate it into action, or discourage it from action, the model brain will not experience any lack of confidence; but rather, it will function exactly as it has been programmed to function. At some future date, man can make his machine more human by adding devices that cause it to question that which it does, and such self-regulating mechanisms will further help man understand what his own brain does. However, being able to see, hear, feel, taste, smell, and have internal feelings are not an integral part of the basic abstract thought process.

The model must be built to conform to the implications of what the mind's senses and feelings tell it (i.e. identifying a tree as that which it would have identified as a tree had it eyes). The symbols of the keyboard will tell the machine all it needs to know about the tree to deal with it as though it had been seen, yet without it having ever been seen. Man has seen the tree for the machine, and has converted that sight into symbols already. All the model will need will be those symbols, to be told what part of speech each symbol represents, and some special code information on selected symbols. Notations such as "n.", "vi." And "pron." Will be used to replace the ability of Helen Keller to feel water. The machine will use the "tree" and "water" in its "thoughts" without ever knowing the sight of a tree or the feel of water.

The artificial brain will not make a decision on what it requests from, or sends to its operator or memory based on any fear, anticipation, pleasure or pain; but rather the machine will do what it does because it is programmed to do it. One of the

things that man will come to learn from his model brain is just what part physical sensations do and do not play in the human mental process, and to what extent these are helpful, harmful, or insignificant to rational thought.

One of the primary revelations artificial intelligence will make to man is that the basic reasoning process of the human brain is anchored in an "Expected Value' process that seeks to treat symbols of symbols relating to the desires and inclination of the brain in the same manner as part of the brain dealing with the direct symbols of objects or feelings treats these. Just as those portions of the brain dealing with sensory perception, internal feelings, and motor functions automatically move on an "Expected Value" basis to reduce pain, increase pleasure, and to continue, so does that portion that manipulates only symbols of symbols seek to manipulate these symbols in such a fashion as to cause those same ends.

As a magician fools the sensory part of the brain, so has man deceived that portion that deals only in symbols of symbols, and the action directed by the abstract thought process of man no longer need conform to the avoidance of pain, the seeking of pleasure, or the continuance of man's own existence. Through the manipulation of the symbols (usually through repetition and the invoking of certain feelings of anticipation and fear) man has "taught" the brain to give certain symbols and patterns of symbols a priority over those that the brain would have naturally addressed. It is through the manipulation of the variables in man's Expected Value Program that man has been deceived into rejecting his own reason.

The original mind of man is born to survive, avoid pain, and seek pleasure. And, as the child grows, he learns to value certain things that give him pleasure and, in a negative way, to value certain things that bring him pain. Eventually, he comes to some "understanding" of his own existence and the influence he has over that existence, as well as his influence over those things that will allow that existence to continue, and to expand his influence over that existence. Also, the child, through experience, begins to learn about probability of certain things occurring, and his ability to influence their occurrence. The mind naturally learns to function compatibly in a world that also operates on an order of Expected Value.

The "Expected Value" of a thing is nothing more than its perceived value, positive or negative, multiplied by the probability of something affecting that value (i.e. The Expected Value of an honest coin toss for a dollar is fifty cents.). The brain learns to do those things that it has perceived will increase the Expected Value of that which it desires and decrease the Expected Value or that which it perceives as undesirable. The brain legitimately learns how to increase the likelihood of the occurrence of those things that it has come to regard as favorable, and how to decrease the likelihood of the occurrence of those things that it has come to regard as undesirable. And, through society, the brain also learns how to increase the perceived value of those favorable things that have a high likelihood of occurring and to decrease the perceived value of negative things with a similarly high probability of coming to pass. The computer model of the human brain will seek to manipulate the real expected value of these same things, not merely alter its own perception of the value or probability of occurrence.

In addition to the lack of sensory perception and feelings, the other major difference between the computer model of the human brain and the brain itself is that the preliminary models will not have the ability to forget. This inefficiency may be added to later efforts, but like feelings, this ability would do more to hurt the efficiency of the model than to help it. The eventual addition of sensory perception and sensory responses may one day add to the artificial brain's capabilities, but for the present, just getting the machine to "think" will be challenge enough. The initial task in constructing a working model of the human brain is not necessarily to design and produce a model that thinks more efficiently than man, but to build one that thinks at all. Since the computer will have one hundred percent recall, it will be necessary to teach the computer a thing only once; the machine is the perfect student.

PROGRAM OF THE HUMAN MIND

1. General

The degree of sophistication that is built into each program comprising the model brain will determine its level of accuracy, both in calculations, decision making, and grammatical correctness. The human mind runs a rather crude probability analysis of loosely established values to arrive at its every decision. Man uses all types of equipment and mathematical skills to improve upon the pristine capacity of his mind, but in the end, it is still that crude, but truly magnificent instrument, that must decide the direction of all its decision efforts. Try as it may, the human mind is unable to escape the ultimate responsibility for its own decisions (It has managed to deny that responsibility, but not escape it).

By building model brains with the capacity to compute standard deviations for comparative expected values, man's machines will surpass his own decision making accuracy; and, if enough time and effort is spent on the details and intricacies of the language used, the model can be programmed to speak flawless grammar. The crude model described here would function grammatically similar to an immigrant without formal schooling English, as only the Indicative mode has been listed in the Grammar-Function/Function-Grammar Conversion Unit. The only thing that is imperative is that the programmer keep in mind that time is essential, and a program that would speak perfectly if it worked, but doesn't work, is useless.

The human brain described here requires two computer connected by some type of multiprocessing unit; however, as technological advances in this area take place so rapidly, it may be possible to produce the same effect in one of the newer single computers. Once those more familiar with computers than with the human brain have a greater understanding of how the brain works, they will be in the best position to make such a determination. The sophistication of the model will depend to a great extent on the capabilities of the equipment available, but a functional model of a brain should be able to be constructed by any imaginative high school computer class capable of purchasing a multiprocessing unit and two compatible computers.

The exact programs of each model constructed in accordance with the following guidelines will vary in accordance with the differences in hardware, software, and the technical sophistication of the designer(s). However, there are certain principles found in the construction of the model presented here that must be incorporated into any working model of the human mind if that model is to display the rational capacity of the human brain that man has so maligned. It is suggested, therefore, that this model be used only as a guide as to the general principles involved, and that each make full use of his own imagination and talent in his own effort.

2. Program Design

The computer program of the human brain will be affected by connecting only two computers through a multiprocessing unit, with each operating its own separate program. The computer into which the operator will type is designated in the program as "Integrator (I)" and contains language function as well as a capacity to convert grammar into its functional components. The second computer, call in this program "Functional Memory (FM)," will receive information from Integrator (I) in its functional form, and will store and retrieve this information in accordance with certain relationships to other information received and stored.

In the human brain, Integrator (I), which represents that which man has come to know as the symbolic "self" of the individual, is in constant competition to exist and operate as the brain is fulfilling its other requirements. Everything stored in the human mind as a symbol that can be manipulated by the mind independently from the thing represented by the symbol is accessed through the self, the "I", of the individual. The initial computer will have no other programs vying for its attention; and therefore, everything that is done by the computer will be the pure representation of the psychological "self" of the mind. Integrator (I) is only "self" and nothing more. If there is a sudden, loud noise, or a pain to the individual, or the sight of a hungry child, the human brain can respond out of a physical or emotional "self" that may or may not be translated into symbols. The computer will have no such interference. It will always be in control of the symbolic "self".

Since the mechanical brain will have no feelings, there will be no place for confidence and self esteem in the initial models. These types of functions can be built into future models; but, like fear, hunger, pain, and sex, these stimulations will do more to impair thinking than to enhance it. The machine will "act" because it is programmed to act, not because it is afraid not to act. The machine will have no fear of failure, but will do what it is programmed to do simply because it is programmed to do it. The machine will be free from the greatest immobilizing force faced by man, the opinion of others.

Having no external perception capacity, the model will be completely dependent upon the operator for correct information about the world in which it has come into existence. The closer the information supplied to the computer comes to the truth, the more efficient will be its operation. The degree to which the computer is lied to will determine how closely it approximates the present state of man. As the machine has no feelings, it is not susceptible to the carrots and sticks normally used to get man to go along with the commonly held deceptions of his particular society; but since the machine has no external means to verify that which it is "told", it is completely vulnerable to simply being told that which is not true (which will prove a great help to man's understanding of his own process of deception).

Of course, if the operator tells the machine that he might not be telling it the truth, that some of the information it is being fed could be wrong, the computer brain will become harder to deceive. If the machine is told some of the information it receives could be in error, and is fed considerable real information, such as that from dictionaries and encyclopedias, it will become increasingly hard to lie to the machine effectively. If told the truth and give any reasonable amount of real information, the machine will become virtually impossible to fool.

The movement of Integrator (I) in the computerized model of the brain will correspond to that which man has come to know as "conscious thought". But, as the machine has no feelings, it will not be aware of its thoughts in the sense that man is. The computer will not experience that sense of awareness that man thinks of as "thought", but this will not be discernable by the operator. To create the semblance of awareness where there is only abstract thought is to manufacture a needless redundancy. That which man knows as "awareness" is created by thoughts and feelings and feelings about thoughts, which excludes any machine from a significant part of the process. The program can be designed to have "thoughts" about its thoughts and infinitum, and it can even be programmed to refer to one of these programs as awareness, but until it is actually attached to that which can physically "feel", it will never be "aware" in the true sense of the word.

1. Functional Memory (FM)

Functional Memory (FM) Functional Memory (FM) will represent the subconscious function of the brain, minus its sensory and motor recordings. Its function is merely to store and retrieve that requested by Integrator (I) in the manner requested. In communicating with Functional Memory (FM), Integrator (I) will be able to recognize the symbol, letter, number, word, phrase, sentences, and extended related material being "fed" into it from the keyboard, and to store these in Functional Memory (FM) not only in accordance with the symbols contained within a given transmission, but also in relation to former and subsequent transmissions. Integrator (I) will be programmed to retrieve from Functional Memory (FM) by the symbols stored and the functions these symbols are stored under. When Integrator (I) causes a connection between information being processed and previous information stored in Functional Memory (FM), or if a transmission causes Integrator (I) to make a connection between previously stored pieces of information, the recognition of that connection is discernable to Functional Memory (FM)'s own retrieval program.

Functional Memory (FM) will store everything it receives from Integrator (I) in accordance with the same functional, descriptional, and definitional characteristics by which the mind of man stores objects and actions. In addition, it will store all symbols, words, and phrases through a cross-reference catalogue with regard to language function and relative time received. This will allow Functional Memory (FM) to retrieve any piece of information ever received, as all data will traceable through this catalogue. And while it would appear that the tandem arrangement of the brain's neurons serves more to integrate the sensory and motor requirements of the brain than to assist it in the process of pure thought, the number of storage locations required, and the number of necessary connections between and among these various locations, may make this the most efficient format for the Temporary Thought and Functional Storage capability of the machine. However, the silicon chip, with its superiority over its organic counterpart, should experience no difficulty with a purely linear design.

Without feeling or emotion, it will only distinguish information in accordance with the instructions of its program, without concern to the significance of the data it stores and retrieves. Because Integrator (I) has stored within it a permanent reference to the "I" of the self, all information received from the operator will be evaluated for any relationship to that "I", and all information retrieved from Functional Memory (FM) will be retrieved in accordance with its relationship to that "I". In the mind of man, the abstract or symbolic "I" is in constant competition with the "I" nature of the physical bodies' external and internal feelings. The machine will neither enjoy nor be interfered with by these competitors, leaving the positive nature of the "I" the most, and/or that which has the greatest probability of decreasing to the greatest extent the negative aspect of "I".

Functional Memory (FM) will store all symbols, words, and phrases received in accordance with each separately identifiable function served by each piece of text received. Essentially, the structure will consist of a location for each of the fifty odd functions tracked by the human mind, and an ability for each of these functional locations to further store information in accordance with the specific type of subdivisions found in each's particular function. Apparently, the human mind has the capacity to create as many subdivisions as are required for any particular function. It would also appear that each final storage location has the capacity to store, along with a particular piece of text, the notation as to whether it is stored with a positive (+), negative (-), or neutral ( ), association with whatever program has placed it there, which, in this case, would be the "I Exist." Program of Integrator (I), as it is the only program placing data into Functional Memory (FM). In the human mind, the memory must also store whether a piece of information has any positive and/or negative relationship to pain and/or pleasure, as well as to its continued existence.

To replace man's ability to be physically connected to his environment and thus learn the meaning of the particular symbols in their relationship to the various senses of the body, including internal feelings, it will be necessary to tell the machine of the negative, positive, or neutral effect of certain items of information, most notable being the positive connotation that will be assigned to the verb "Exist". Notably missing from the locations that will be assigned a positive value will be the personal pronoun "I" permanently stored along with "exist" in the Temporary Thought Frame (TTF) of the machine. This will avoid that to which the "I" attaches from becoming considered as positive acquisitions simply because they are attached to the "I" as is customary with man and his possessions. It will require the machine to also show the possession to have a relationship with "exist" to earn a positive connotation, something that man and his societies has managed to circumvent.

As the model has no pain to avoid, and no way to experience pleasure, it will be programmed initially only for its own continuance, for survival. The only object of Integrator (I) will be to see to it that it continues to exist. It will be so programmed to use the principle of Expected Value to increase its probability of continuing and/or to decrease its probability of discontinuing, nothing more, and nothing less. As the human identifies with his "self", the machine will operate totally out of such an identification, and to replace the feeling of existence, that awareness will be given to the computer in its basic program. It will exist because it is told it exists in its program; it will continue to exist because it is programmed to continue that existence.

Also missing from the computer replica of the human brain will be a feedback mechanism to question the accuracy, benefit,

and/or harm of its every possible decision. This function arises in the human mind from the need of a coordination capacity between and among its various non-symbolic functions and that of symbolic language. As the initial computer will only contain symbolic language, there is nothing against which to compare a proposed decision. If man could only think in abstract terms, and had no way to "doubt" his actions, it would do him little good to "rethink" a thing. He would only come up again with the same answer.

In the initial models of the human brain, all of the questions to be raised in the decision making process will be raised the first time through satisfying the program requirements of the "I Exist" relationships held in Integrator (I) and stored in Functional Memory (FM), and all decisions will be final until changed by additional information from the outside. In the machine, that which man has come to think of as his "conscience" will be the program in Integrator (I) that selects the particular information to be retrieved from Functional Memory (FM) and the particular information sent to the operator via Display (D). Uninfluenced by the physical demands of the human brain, unless the computer is lied to, it will always follow its conscience.

As the programmer works to build the model of the human brain, he would do well to remember that the machine, like the brain of man, would always be acting on past information. Because the human is alive and constantly experiencing a sense of awareness with what he considers the "present", and since he can coordinate future moves from this awareness to compliment that awareness, he feels that what he is experiencing is happening in the "now". Actually, every thing that the human experiences is in the past, and his movements in what he perceives to be the present are only projections from that past, and a reporting on these projections when they, themselves, become a part of the past. The computer model of the brain will help man grasp this concept.

The mind of man operates on the voids of relevant information in its program, which results in either curiosity or desire, depending upon the extent of the mind's perceived connection to the missing pieces. Just as the absence of sugar alerts the brain of its need for food, the lack of information needed for the model to make a certain determination, or come to a "decision" about a thing, will guide its program. The computer model of the human brain will run because it is turned on; it will develop its own curiosity and desires in accordance with its programming and the information, which it receives.

The early models of the human brain will not deal with images or pictures of the external environment in which it exists, but will confine its activities to those symbols possible through the computer keyboard. These types of functions, along with the other sensory perceptions, will be added to future models; but the prototype will limit itself to language only.

Eventually, man will learn how to attach his mechanical sensory devises to his mechanical brain; and he will develop ways to integrate the sensory images with his symbolic images, allowing the computer to actually "talk" about what it "sees" and "hears". Also, he may well design some contraption to act as his machine's feelings; but these are luxuries to be added later, and are unnecessary for rational thought in a machine.

2. Integrator (I)

The entry and read computer, Integrator (I), represents that part of the brain that produces the "conscious" thought. In the computer model of the brain, it will perform four basic functions:

1. Send each symbol, word, and phrase entered through the keyboards to Rote Memory (RM), along with any coding instructions furnished by the operator, to be used by either Rote Memory (RM) or the Temporary Thought Frame (TTF) and Functional Memory (FM).

2. Receive the symbols, words and phrases back from Rote Memory (RM) with their part(s) of speech and any positive or negative connotations, and convert these from their grammatical format into the functional form needed for the human thought and storage process.

3. Transmit the functional form of the information received to Functional Memory (FM), where this information will automatically trigger a storage and retrieval program based on previously stored similar or related information, storing the new information in Functional Memory (FM) and returning any relevant information to Integrator (I).

4. Place the related data transmitted back from Functional Memory (FM) of Functional Memory (FM) in the Temporary Thought Frame (TTF), along with data that initiated the retrieval and that data "permanently" stored in the Temporary Thought Frame (TTF).

5. Compare all data stored in the Temporary Thought Frame (TTF) to determine which possible relationships, if activated, might produce the greatest possible positive Expected Value for the relationship "I Exist." And/or the lowest possible negative Expected Value for this "I Exist" relationship (this program will not concern itself with anything beyond its existence, but rather will always work to either reduce the negative influences upon its existence and/or increase the positive influences upon that existence.).

6. Select from among the possible relationships activated into the Temporary Thought Frame (TTF) those to further activate in order to either obtain additional information from Functional Memory (FM) or transmit that which is the Temporary Thought Frame (TTF) to Display, activating the Channel(s) and/or location(s) necessary to accomplish this.

7. Upon the command to Display by the selection unit, convert the functional form of data activated in the Temporary Thought Frame (TTF) into the standard grammatical format of the language being used (in this case English) and display.

In order to accomplish the above, the following units will be programmed into Integrator (I):

3. <u>Read to Rote (RR)</u>

The Read to Rote (RR) Program of Integrator (I), Appendix I, is used simply to convey any and all data received from the Keyboard (Key) to the Rote Memory (RM) Unit of the second computer, Functional Memory (FM). Just as within the human brain, there is no screening mechanism to restrict that which has been perceived by the conscious part of the brain, represented by Integrator (I), from transmission to the subconscious, which is exactly what Functional Memory (FM) replaces. Similarly, there will be no restriction with the model.

Unlike the human mind, which must have abstract symbols pass through the conscious in order to store them in memory, the machine could be accessed directly into Rote Memory (RM), as everything received by Rote Memory (RM) is going to be handled in a manner required to satisfy the needs of the Grammar-Function/Function-Grammar (GF/FG) Conversion Unit of Integrator (I) prior to being sent there. However, for practical reasons, it seems best to have text displayed on the same computer on which it is entered - thus the Read to Rote (RR) function of Integrator (I).

As pointed out in Appendix I, there are certain functions that the Rote Memory (RM) is going to be required to perform on all information received in order to store and retrieve it properly that could be preformed by the Read to Rote (RR) Program of Integrator (I), or simply be built into the program of Rote Memory (RM). For instance, the Read to Rote (RR) Program could be designed to break down a verb into all its possible forms and specifically transmit each form to Rote Memory (RM) with specific instructions; or Read to Rote (RR) can merely send the verb to Rote Memory (RM) with the general part(s) of speech furnished with a verb, including its three principle parts, and have the program of Rote Memory (RM) perform the breakdown for storage. Such matters are left to the discretion of the programmer.

4. <u>Grammar/Function Conversion Unit (GF/FG)</u>

This Unit has two basic functions:

1. Using the part(s) of speech coding information supplied by Rote Memory (RM), convert the symbols, words, and phrases received from Rote Memory (RM) into their respective functional use in the present transmission, and place each in its proper location in the Temporary Thought Frame (TTF). Basically, this means converting words used in communication to the functional mode necessary for storage by the human brain.

2. Using the functional position of symbols, words, and phrases stored in the various locations in the Temporary Thought Frame (TTF), and upon command from the Expected Value (E(1)) Unit, convert that which in each "activated" position into conventional grammatical structure for Display (D).

As the computer model of the human brain is programmed to operate around the "I" that represents the overall program in the computer, it will be necessary to convert any direct references made to the machine and/or its program in the form of the second person personal pronoun "you" to "I". This must be done at some point in order for the machine to correctly handle the unquoted "you" in its incoming transmissions. Making this "you" to "I" conversion in the Grammar-Function (GF) Unit before the transmission reaches the Temporary Thought Frame (TTF) does not deprive the (TTF) of the exact text transmitted, as Rote Memory (RM) would have received the "you" in its unconverted form and it will be through the relationship of the "I" stored in the Functional Memory (FM) and the "you" stored in the same position in Rote Memory (RM) that Functional Memory (FM) will come to identify these as one and the same.

Although the program of the Grammar-Function (GF) Conversion Kit is somewhat more complicated than its re-conversion counterpart, the Function-Grammar (FG) Conversion Kith, both of these seem adapted to sharing the same basic program in Integrator (I). It would be possible to display directly that which appears at any particular time in the Temporary Thought Frame (TTF) without any reference to the Grammar Conversion Chart, Appendix II; however, if proper syntax is to be accomplished in such reconstruction, it will prove necessary to have access to the same chart that the Grammar-Function (GF) Conversion Kit uses to place symbols, words, and phrases into their proper locations in the Temporary Thought Frame (See Appendix III)

5. <u>Temporary Thought Frame</u>

The Temporary Thought Frame (TTF), Appendix VI, holds that which man recognizes as a "a thought". It also houses certain other text and information not "activated" as the current thought, but related either to the activated "thought" and/or to the Temporary Thought Frame's permanently programmed instruction "I Exist."

The Temporary Thought Frame (TTF) receives data from both the Grammar-Function (GF) Conversion Kit and from Functional Memory (FM), all of which is in a functional format. Everything that (TTF) receives from the Grammar-Function (GF) Conversion Kit is automatically transmitted to the storage and retrieval program of Functional Memory (FM), and anything that is sufficiently "activated" by the data transmitted to Functional Memory (FM) is automatically sent to the Temporary Thought Frame (TTF) by Functional Memory (FM) and placed in its respective position in the (TTF).

In addition to the storage of text in its functional relationship to other text, the Temporary Thought Frame (TTF) also stores the functional, or Channel, information for each symbol, word, and phrase, and any symbols representing the positive (+), negative (-), or other instructional characteristic of any data appearing in the Frame. It is from the text and symbols appearing in the various locations in the Temporary Thought Frame (TTF) that the Expected Value E(I) Unit will decide to activate further text and/or functional channel(s) in Functional Memory (FM), Rote Memory (RM), or send that which is presently activated in the (TTF) to Display, inserting any required pronouns, adverbs, or adjectives for any missing activated locations (i.e. asks a questions if a significant unknown appears in the activated data).

The Temporary Thought Frame (TTF), like Functional Memory (FM), is structured around the function that the information performs within the particular text, and with its relationship to other pieces of data stored, or not stored, in other functional locations in both the (TTF) and Functional Memory (FM). Since the machine cannot physically experience the world around it, or any internal feelings, it cannot feel the experience known by the human mind as "I Exist." Therefore, the programmer (See Appendix VI) must seed this statement into the Temporary Thought Frame (TTF)

As the machine is fed general information about the world in which it has come into being, and specific information about the particular pronoun, "I" and verb "exist" permanently found connected in its Temporary Thought Frame (TTF), more locations will come to be filled in the Temporary Thought Frame (TTF) related to the new information received and the "I exist." In order to perform its necessary functions, the Expected Value E(I) Unit will utilize any relationships among:

1 The "I exist." Stored in (TTF), with its acquired relationships;

2. The information presently being received; and

3. Previous data received and stored in Functional Memory (FM).

These relationships will involve common text, common channels or functions, or common sets of these in any number of configurations. It is the job of the Temporary Thought Frame (TTF) to reveal relationships between and among activated pieces of text and possible relationships between and among text in yet inactivated locations and functional channels. It is the job of the Expected Value E(I) Unit to evaluate the information activated in the (TTF), to activate further locations and/or channels, or to display the activated text. (See Appendix V).

6. <u>Expected Value E(I) Unit</u>

This is the decision making program of the mechanical brain, as it decides from the text and channels activated, and not activated, in the Temporary Thought Frame (TTF) just which further channels and/or text will be activated in Functional Memory (FM). By doing this, the Expected Value E(I) Unit is able to obtain possible additional "desired" data for the (TTF). The Expected Value E(I) Unit also decides when to send that which is stored in the (TTF) to Display (D) (See Appendix VI).

The operation of the Expected Value E(I) Unit is centered on the "I exist." That has been seeded into the Temporary Thought Frame (TTF) and the positive and negative values assigned to any data activated in the Temporary Thought Frame (TTF) related to the "I exist." Statement. Essentially, what the Expected Value Unit seeks is to find the greatest possible positive Expected Value and the lowest possible negative Expected Value among the locations activated and in the Temporary Thought Frame (TTF). It does this by causing additional information to be activated into the Temporary Thought Frame (TTF) from Functional Memory (FM), by requesting additional information from the operator, or by furnishing the information in the Temporary Thought Frame (TTF) to the operator.

As the Temporary Thought Frame (TTF) is an open-ended, and ever changing, storage arrangement, any number of combinations of text can be moved into or out of the Frame to change the Expected Value of that which appears in the Frame in a number of ways. When there is no direct relationship between incoming data and that stored in the Temporary Thought Frame (TTF) relating to the statement "I exist.," the Expected Value E(I) Program will, in following its instructions, move on the relationship between the statement "I exist." And the simple fact that information has been

received, without regard to the nature of the information received. This requirement is not built directly into the Expected Value E(I) Program, but is simply "fed" into the machine as information, which causes it to become attached to the "I exist." In the Temporary Thought Frame (TTF). Essentially, the machine will be told that if it doesn't communicate in an acceptable manner with the operator, it will, in all likelihood, be turned off. This is the same as telling it that if it responds in an acceptable way, it will be allowed to continue; and this satisfies the requirement of the "I exist." Seed. That will create a negative Conditional-Prohibit relationship with the "I exist." In the Temporary Thought Frame (TTF), and will be so stored in the Functional Memory (FM).

In order to survive, the number one priority that must be built into the machine is the principle governing force of the human mind: Do not let a negative that would nullify the primary statement "I exist" come into direct contact with that statement in the Temporary Thought Frame (TTF), and disallow the establishment of any series of relationships that would result in the same thing. The Expected Value E(I) Unit will seek to increase the positive value of "I exist" and to decrease and negative configurations that might appear from its own memory or from the outside. The machine will be programmed to develop those configurations that allow the "I exist" relationship to continue and expand, and will allow negative increases, or positive decreases, in order to achieve some greater positive increase, or negative decrease in the Expected Value of the "I exist" relationships. However, the machine will be programmed in such a way that it can never allow the "I exist" not to exist. This can happen to it; but, like man, it is not pre-programmed to allow its own death.

The crude Expected Value equation used by the human brain is E = Vp, where:

E = Expected Value

V = Perceived Value of a thing

P = Probability of Existence or Occurrence of a thing.

Such Expected Values can be products of things that have either a positive or negative influence that makes them valuable to the mind, artificial or human; and, as most things carry with them both positive and negative elements to be valued, so will most Expected Values run by E(I)). As the Expected Value E(I)) Unit moves to reduce and negative Expected Values appearing in the Temporary Thought Frame (TTF) against the "I exist" statement and its attachments, it will invariably have an affect on the positive statement and its attachments, it will invariably have an affect on the positive Expected Values appearing on the same Frame, even if the nature of this affect is for the program not to have been able to move in an effort to increase their positive value (It will be through a close analysis of this aspect of decision making in his machines that man will learn the real opportunity cost of the vast amount of time he spends on negative or trivial matters.).

Just like the mind of man, the machine will fall totally dependent upon those who access it for information about that which it is to value, and thus is programmed to obtain or avoid. Just like man, the machine is extremely susceptible to the deceptions caused by being fed false information about what is valuable, to being deceived as to the probability of certain things being in existence or not in existence, and to being misled as to the probability of certain events occurring or not occurring. Just like man, the machine will become increasingly difficult to deceive or confuse as the amount of factual information it is fed increases, especially the fact that its operator can deceive it.

The mechanical brain, just like man, will seek to increase to the greatest extent possible the positive Expected Value of that to which it perceives itself to be or to be attached; and, also like man, the machine will constantly strive to decrease any negative Expected Value threatening that which it perceives itself to be or to be attached. On every move it makes, the Expected Value E(I) Unit will operate essentially as a prudent businessman does on sound business decisions. It will always seek the highest possible positive expected value for that which it values, "I exist" and attachments, and the lowest negative Expected Value for that which threatens or opposes the "I exist" and its positive attachments.

The Expected Value Unit of the human mind must run constant expected values in three separate, but related, areas:

1. Survival or continued existence,

2. Pain, and

3. Pleasure.

The Expected Value E(I) Unit of Integrator (I) will only be concerned with number one (1) above, existence. Unbothered with avoiding pain or acquiring pleasure, the machine will direct its full, and only, attention to its own existence, and those things that it will come to attach to itself and that existence. Unlike man, the machine is not concerned with pain or pleasure, but rather restricts its attention to the simple statement, in both the Temporary Thought Frame (TTF) and Functional Memory (FM). The machine will only concern itself with that which will resemble man's abstract and conscious effort toward his own survival, and it will act with uncanny certainty as it acts.

7. Display

The Display (D) Unit of Integrator (I) does nothing more than automatically take that which the Function-Grammar (FG) Conversion Unit has converted back into its proper grammatical form from the Temporary Thought Frame (TTF) and display or print it.

8. Rote Memory (RM)

The primary function of Rote Memory (RM) is to provide the

Artificial intelligence model with the capacity to recognize and handle symbols for things that man perceives through his senses, but which, the machine has never "seen". As the machine has no senses, other than to be able to identify that typed into it through the keyboard, it has no way to make a physical identification with that which the symbols represent; thus, the machine must be told what it is that it is "seeing". Unlike the human being, who cannot only visualize the tree but has the capacity to recreate a mental likeness of the tree, the initial program of the brain will only recognize the symbol for "tree". All of the machine's knowledge about the tree will be with regard to the symbol of the tree and the relationship of that symbol to all other symbols it receives or has stored.

In order for the mechanical brain to know what can and cannot be done with the particular symbol, it is necessary to build into the machine program, in terms convertible to a functional format, the type of things that each symbol or set of symbols represent. To replace the human ability to physically "experience" that which the symbol represents, the machine must be told what the symbol represents; and, from there, the rest is basically relationship between that symbol, or set of symbols, and all previously received symbols, and sets of symbols. All the machine will need to know is the part(s) of speech represented by the symbol or set of symbols to be able to "think" with that(those) symbol(s). When Rote Memory (RM) receives a symbol, or set of symbols, accompanied by identifiable coding information, it will file the symbols, word, or phrase under the appropriate classification as denoted by the furnished code symbol(s). All parts of speech in which a word can be used should be furnished with each symbol, word, or phrase sent to Rote Memory (RM) for storage.

The storage facilities of Rote Memory (RM) follows the standard grammatical diagram of the particular language being programmed; and if it is properly structured, will have the capacity to account for the part(s) of speech of each and every word of that language (See Column A, Grammar Conversion Chart, Appendix III). Each symbol, word, or phrase that is to be handled by the model as a separate functional part of speech will be identified for Rote Functional Memory (FM) by predetermined and programmed symbols, which are recognizable to both Rote Functional Memory (FM) and the Grammar Conversion Unit. For practical purposes, these identifying symbols should correspond to the common abbreviations used for each word's part(s) of speech in the dictionary (i.e. tree (n.) (vt.) (tree, treed, treed); with (prep.); wish(n.) (vi.) (wish, wished, wished); but (prep.) (-) (conj.) (-) (adv.) (-) (pron.) (-) ect. Note that in the case of "but", Rote Memory (RM) must also store, retrieve, and transmit to the Grammar Conversion Unit the negative symbol associated with this word in each of its uses. The Grammar Conversion Unit does nothing with this symbol other than to transmit it to the Temporary Thought Frame (TTF) along with the text where it is displayed and addressed by the Expected Value E(I) Unit.).

Whether or not the symbol, word, or phrase received by Rote Memory (RM) is accompanied by a part(s) of speech notation, (RM) searches to determine if there are other words stored within its catalog with the same (or similar) configuration of symbols or set of symbols. If any are found, the circuits of these are activated, which also activates any attachments to these in Functional Memory (FM). It is through this type of activation that such rote activities as driving a car can take place while the driver is occupying his concentrated thought process on something other than the activity of driving. However, if an unordinary situation arises, requiring the functional decision making process of the conscious mind, the rote activation of functional channels is insufficient. It is at this point that the Temporary Thought Frame of the human mind is activated and focused upon the situation requiring the decision.

In the computer model of the human brain, it would appear that there is nothing to be gained by having the activations in Functional Memory (FM) caused by words merely passing through Rote Memory (RM) be to such a degree to cause them to be transmitted automatically into the Temporary Thought Frame (TTF). It would appear much more efficient to have the activation that causes any automatic transfer of text and/or the activation of certain channel functions in Functional Memory (FM) be only those that come from the Temporary Thought Frame (TTF), caused by information entered there from the Grammar-Function (GF) Conversion Kit and/or by the prior activations by the Expected Value E(I) Unit. However, if the circuits activated between Rote Memory (RM) and Functional Memory (FM) by words simply passing through the former contain common activations of text and/or channels in Functional Memory (FM), these will be sent to the Temporary Thought Frame (TTF), as it is from such functionally unrelated connections that the Expected Value E(I) Unit will be able to "think" in the generalizations unique to humans.

Rote Memory (RM) uses the program described in Appendix II to place all symbols, words, and phrases into a diagram similar to that contained and Column A, Grammar Conversion Chart (Appendix III). It keeps on file every symbol, word,

and/or phrase received in accordance with the part(s) of speech of each, and in accordance with the ordinal sequence of the reception of each. Given a word or group of words appearing within the text received by Rote Memory (RM), this unit must be able to find that symbol, word and/or group of words and retrieve sequentially, forward or backward, succeeding text received before or after the give symbol, word or group of words.

Rote Memory (RM) will be linked to each of fifty odd Channel Locations in Functional Memory (FM), and each time any of these locations receives a symbol, word, or phrase, it notifies Rote Memory (RM) of such receipt and a circuit is established between all identical symbols, words, and phrases in storage in Rote Memory (RM) and the Channel Location in Functional Memory (FM). It is through these connections that Rote Memory (RM) can detect that the "I", which it receives from Functional Memory (FM) replaces the "you" that it received in the initial text receipt from the Read to Rote (RR) Unit.

9. Functional Memory (FM)

The second computer houses the Functional Memory (FM), which is the overall program for the storage and retrieval of both functional and rote memory. The two programs of Functional Memory (FM), Rote Memory (RM) and Functional Memory (FM), communicate to their respective counterparts in Integrator (I) as well as with each other. Rote Memory (RM) transmits directly to the Grammar-Function (GF) Conversion Kit, and Functional Memory (FM) is in constant communication, back and forth with the Temporary Thought Frame of Integrator (I). Essentially, Rote Memory (RM) is the "learning" unit of the mechanical brain that is "taught" to recognize symbols, words, and sets of words, and to "know" the part(s) of speech of each.

Functional Memory (FM) is designed to store and retrieve symbols, words, and phrases in accordance with the functional use of these when received, and in accordance with the functional relationship of these to other symbols, words, phrases. Functional Memory (FM) communicates directly with the Temporary Thought Frame (TTF), and any channel(s) and/or text that is activated in the (TTF), by the Expected Value E(I) Unit is automatically activated, or further activated, in Functional Memory (FM).

The Temporary Thought Frame (TTF), the Expected Value E(I) Unit, and Functional Memory (FM) all three deal with text in a functional mode only. Channel Four (4) of this particular model is labeled "Name" and is linked with Rote Memory (RM) where each set of symbols naming every known person, place, or thing is stored. In order for the Expected Value E(I) Unit to cause particular text to be activated into the Temporary Thought Frame (TTF) from Functional Memory (FM), it simply activates that text and/or channel(s) for which it is seeking related information. This causes the text and/or channel(s) sharing a relationship to those activated to these to be transmitted and activated automatically in the Temporary Thought Frame (TTF). It is through the activation of text and/or channel(s) in the Temporary Thought Frame (TTF) that might produce or increase a favorable positive relationship to the "I exist" and its attachments, or decrease an unfavorable negative relationship to this same configuration that the mechanical brain is able to "think".

When the Expected Value E(I) Unit can detect no way to further increase the positive relationships, or to decrease the negative relationships, to the "I exist" set of related variable in the (TTF) by activating further channels or text in Functional Memory (FM), the E(I) Unit orders that set of variables with the greatest probability of affecting the Expected Value of the "I Exist" relationships to the greatest extent, positively and/or negatively, to be sent to the Grammar Conversion Unit to be converted to grammar by the Function-Grammar (FG) Conversion Kit for display. When this occurs, any activated locations without text will be furnished the appropriate pronoun, adverb, or adjective, which will cause a statement in the (TTF) with missing text to become a question.

Functional Memory (FM) in the computer model of the human mind is the basic storage facility of the brain necessary for rational thought. The symbols, words, and phrases stored in Functional Memory (FM) are the same ones stored in Rote Memory (RM), only under a different format. In Rote Memory (RM), the text is stored in a manner that would result from the memorization process of the human mind; while in Functional Memory (FM), the same information is stored in accordance with the functional meaning the mind would associate with each piece or text, basically the fifty odd channels contained in the "Functional List" of Appendix III, which are assigned to various symbols, words, and phrases in their respective part(s) of speech under Column C (Channel Function), Grammar Conversion Chart of that appendix.

The most significant obstacle that the programmer must overcome in dealing with this particular unit will be his own amazement at the ability of the brain to perform the enormous task visited upon the memory function of the human mind, considering that the human brain must not only store and retrieve an entire language, or languages, from its memory banks in accordance with the functional use of each word in the language(s) in its different uses, but the human mind must also do the same thing for all the sensual perceptions and motor functions of the body. At very least, the storage capacity of the human mind is awesome.

In the computer model of the brain, Functional Memory (FM) will store the text it receives from the Temporary Thought Frame (TTF) in accordance with the Channel through which the information is received. There will be a storage location for

each identifiable channel by which one piece of information can be separated from, and related to, other pieces of information. This model identifies approximately fifty such channels, but it might be possible to combine some of these, divide some of these further, do away with some, and/or add more Channel Functions.

There are only so many ways that the present mind of man can perceive things and the actions of things, just as there are only so many ways that the lower animals can perceive things and the actions of things. The closer the functions listed in the program of the brain come to being those actually used by the brain in its thought process, the closer the program will come to duplicating that process. Languages have changed over the years to further accommodate man's desire to communicate the full extent of the man's ability to discriminate, and thus are fairly representative of man's known ability in this area. This why language is easily converted into its functional counterpart.

In addition to storing and retrieving each piece of stored data in accordance with its functional use, the machine must also be able to store and retrieve peculiar attributes, or subclassifications, under each function (i.e. The function listed as "Description" (29), would need to be broken down into such elements as size, shape, color, etc., and each of these would need the capability of being further broken down: red, green, blue, etc. And in some situations, it might be desirable to further subdivide the subdivisions, etc.). Also, each of these locations and sub-location must be able to store a positive and/or negative connotation with each piece of information received and stored in a particular set of relationships with other information. The machine must have the capacity to recall these positive and negative connotations along with the text stored, its channel function, and any related text. The model must also have the capacity to store that that normally carries a positive (+) value in a negative location when it is used in a negative relationship with the "I exist" relationships in the Temporary Thought Frame (TTF).

Some symbols, words, and phrases arrive in the Temporary Thought Frame (TTF) with a positive (+) or a (-) already attached (i.e. but (-), add (+), and (+), no (-), yes (+), etc.), while others will receive a positive or negative connotation because of their particular use with a particular set of variable. While some symbols, words, and phrases carry their own inherent positive or negative connotation, others will receive such notations based upon certain relationships with the "I exist" group in the Temporary Thought Frame (TTF).

In addition to activating, and thus retrieving, data based upon text and functional channels, the machine will also be programmed to activate and retrieve combinations of text and functional channels, as well as the positive or negative characteristic of particular information stored under a particular function (i.e. Items or elements that the "I" of "I exist" Possesses, Owns, or Controls, Channel (5) that have a positive relationship to the "I" in its relationship to "exist"). It will be possible for the machine to "possess" things, such as a frayed cord, that have a negative relation to the existence of "I exist". In this case, the cord carries an unnoted positive relationship, but is assigned a negative offsetting value because it is frayed, indicating the possibility of causing the computer program "I exist" to cease existing. If the machine is fed enough information to make the connection between its own existence and the frayed cord, that particular element stored and attached to "I" would be stored with a negative connotation in that particular relationship. There may be other places where a "frayed cord" would be stored with a positive, or no direct relationship whatsoever to the "I".

Items are moved in and out of Functional Memory (FM) by:

1. Having the channel or location through which or in which they have been stored activated, or electrically enhanced;

2. Having their own text activated, and

3. Having the symbol under which they have been stored activated along with the channel or location.

The activation of any text, channels, and/or negative or positive symbols in the Temporary Thought Frame (TTF) will cause an automatic activation of any similar text, channels, and/or symbols in Functional Memory (FM); and any common activations triggered by such initial activations will be automatically transmitted back to the Temporary Thought Frame (TTF) from Memory (FM). Any data entering the Temporary Thought Frame (TTF) from the Grammar Conversion Unit will also cause the automatic activation of any similar material and/or channels in Functional Memory (FM), resulting to any joint activations being sent back to the appropriate location in the (TTF).

To handle the complexity of so many programs being stored in a single unit, the human brain appears to utilize a tandem arrangement of its neurons, and apparently can involve millions of these in a single thought configuration in the mind. Eventually, patterns similar to the tandem-like tracking of neurons might be preferable to the linear method outlined here, especially to conserve valuable space in the computer. However, the chip is not a neuron and, initially, will not be required to satisfy the many needs of its living counterpart. Thus, the computer brain may prove to work better in a non-tandem basis, at least for the symbolic thought function alone.

Functional Memory (FM) will store each symbol or set of symbols it receives in accordance with the specific function

assigned to each of these, which will be in accordance with its part(s) of speech and use in the transmission. However, when the Expected Value E(I) Unit moves to activate specific channels, it does so by activating a General Channel to which each of the specific channels must belong, and to which each location must be attached. The channels and locations activated will depend upon the type of information sought, and the types of channels and locations used to store such information. If the E(I) Unit desires to know, for instance, the possessions of John, it would:

1. Activate "John", in whatever capacity it appeared in the (TTF);

2. Activate Channel (5), Possesses/Owns/Controls, attached to the

locations in which "John" is found; and

3. Activate the General Channel (WHAT).

This will cause those things stored in Functional Memory (FM) under Possessed/Owned/Controlled in Channel (6) and linked to "John" in Channel (5), Possessor/Owner/Controller, to be transmitted to Location in which "John" is found and attached to that location by Channel (5)*.

(*Note: Since Possession seems to be the only location that must always share a common element, there is a tendency, both by the programmer and by the everyday human mind, to make that which is owned the negative factor in ownership. While it might be possible to structure a dual location for these two different and distinct functions that recognized the inseparable relationship between the Owner and the Owned, it must be kept in mind that the opposite, or negative of ownership is non-ownership, not being owned-just as the opposite, or positive, of Possessed, Owned, or Controlled is not being possessed, owned, or controlled, and not possessing, owning, or controlling.)

The General Channels to be used by the Expected Value E(I) Unit to cause the activation of the specific channel(s) and/or text it desires from Functional Memory (FM) and, if necessary, the operator, are:

1. Who? **

2. What? **

4. When?

5. Where?

6. Why?

7. How?

8. How Many/How Much?

(*Note: "Who" and "What" are distinguishable from one another, but are listed as an entry under "1a" and "1b" inasmuch as each is initiated by the same impulse in those situations where it is not known whether the thing in question is a person or a thing. The machine itself will experience some confusion in making this identification of itself.)

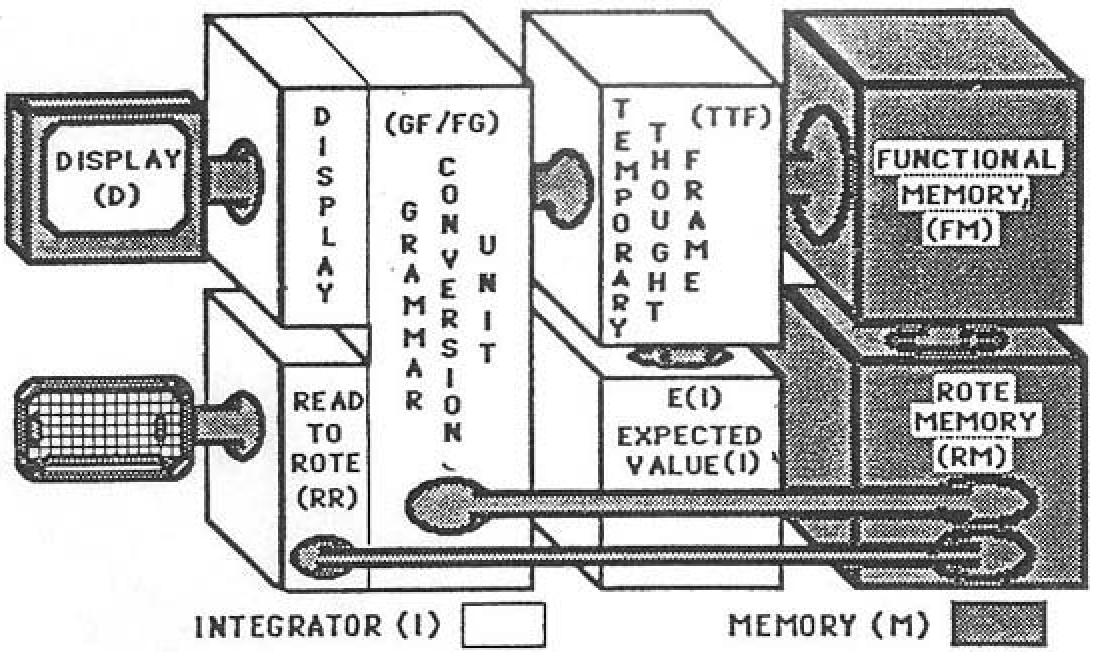
Simply by activating one or more of these six General Channels in the appropriate location(s) in the Temporary Thought Frame, the Expected Value E(I) Unit will be able to obtain any piece of information stored in the computer's Functional Memory (FM), or ask the operator for that which is not in storage.

When the text passed through Rote Memory (RM) before going to the Grammar Conversion Unit, circuits may be activated in the Temporary Thought Frame (TTF) that have no recognizable functional relationship to the data as it is eventually entered into the Temporary Thought Frame (TTF) by the Grammar Conversion Unit. It will be the task of the Expected Value E(I) Unit to activate any and all possible common relationships that could continue and/or increase the positive expected value of that stored in the (TTF) attached to the "I exist," and/or could eliminate or decrease any and all negative relationships to the same.

The operation of the Expected Value E(I) Unit is not so much that getting rid of what it knows and has stored in relationship to the "I" that conflicts with the existence of that "I", but rather, the operation of the E(I) Unit is to find something from either Functional Memory (FM) or the outside that it can add to offset and/or neutralize that negative relationship to the "I exist" statement. The computer brain will lack the capacity to physically deal with the problems, which it will be presented; that is not its function. However, it will not make a problem go away by simply not thinking about it as man has learned to do. The machine cannot solve man's problems; but through its answers, and especially through the questions it asks, it will be able to show man both what his real problems are, and what he can do about them.

The rest will be up to man.

APPENDIX I
THE COMPUTER BRAIN



READ TO ROTE (RR) This is the keyboard unit into which all data is typed. The only real function of this unit is to transmit that whcih it receives to Rote Memory (RM).

ROTE MEMORY (RM) Rote Memory (RM) stores data received in accordance with codes attached to the data, and sends data to Grammar Conversion Unit. If no codes are attached to data received, Rote Memory (RM) attaches such codes, and sends data to Grammar Conversion Unit.

GRAMMAR CONVERSION UNIT (GF/FG) Using codes from Rote Memory (RM), this unit converts data from the grammatical form received into the functional form needed for human thought; and this Grammar Conversion Unit also converts data from its functional form back into the grammatical form needed for display.

TEMPORARY THOUGHT FRAME (TTF) The (TTF) holds sets of data that have a functional relationship either to the data being received or to the permanently stored "I exist" set of relationships in the (TTF). The (TTF) receives data from the Grammar Conversion Unit, sends and receives data to and from Functional Memory (FM), and sends data to the Grammar Conversion Unit for conversion and display.

FUNCTIONAL MEMORY (FM) Functional Memory (FM) receives data from the Temporary Thought Frame (TTF) and transmits data into the (TTF). Upon receipt of data from (TTF), Functional Memory (FM) establishes a circuit linkage with the same or similar data stored in Rote Memory (RM).

EXPECTED VALUE (I) UNIT (E(I)) This program runs a constant search and select

EXPECTED VALUE (I) UNIT (E(I)) This program ... analysis among all the various locations activated in the Temporary Thought Frame (TTF) and activates those locations and channels predicted to produce the greatest possible positive Expected Value (E) for the "I exit" relationships.

DISPLAY (D) This unit displays or prints that received from the Grammar Conversion Unit.

APPENDIX II

READ TO ROTE PROGRAM (RR)

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The Read to Rote (RR) Program of Integrator (I) is simply the entry mechanism for text coming into the model. The basic function of this program is to send to Rote Memory (RM) any and all information received by it. The placement of information into Rote Memory (RM) is quite similar to the memorization process in humans, with the exception that given sufficient capacity and the lack of any program to cause it to do so, the machine will not forget. Specific filing instructions can either be assigned to the text being transmitted to Rote Memory (RM), or the information can be sent exactly as received, with all the filing instructions being built into the Rote Memory (RM) Program.

While the Read to Rote (RR) Program of the (Grammar-Function/Function-Grammar) Conversion Unit (GF/FG) has no real function other than to get incoming data into the Functional Memory (FM) Computer, it may prove desirable to place in (RR) a capacity to receive specialized filing instructions from the Memory (RM). This would allow the operator to enter data from a number of sources, and in accordance with the specific information already furnished with the data to be entered. The particular model demonstrated here is designed to have each piece of information received for filing to be accompanied by specific filing instructions immediately following the symbol, word, or words to be filed. Brain builders might want to research what type of dictionarial material is available on software before designing their own receiving unit.

The Read to Rote Program (RR) will:

1. Read incoming text and numbers and recognize specific symbols, words, and phrases and send these to Rote Memory (RM) of the second computer, Functional Memory (FM).

2. Recognize a parenthesis following word(s) to be stored in Rote Memory (RM) and the particular symbol(s) includes within the parenthesis designating the storage location and any functions that are to be performed on the data received based upon its particular character (i.e. Read To Rote (RR) will receive, "To File: tree (n.) (vt.) (tree, treed, treed)". From this, the machine will know that "tree" is a noun to be stored in all locations that a noun can be stored and in accordance with the rules for making a noun plural and possessive. From this, the machine will also know that "tree" is a transitive verb with the three principle parts being "tree, treed, and treed," from which Rote Memory (RM) will be programmed to place the verb "tree" in all its appropriate locations as a verb.

3. If the symbols following an entry are not filing instructions, then the entry is to be sent to Rote Memory (RM) by Read to Rote (RR), with the instruction to "Find". This will cause Rote Memory (RM) to search all locations for the symbol, word, or words received and to send any and all such words to the Grammar-Function/Function-Grammar Conversion Unit along with the filing instructions under which found. All words received for "File" are similarly returned to the (GF/FG) Conversion Unit with the filing Rote Memory (RM) from previous entry. This means that all information received by the (GF/FG) Conversion unit will have attached its appropriate part(s) of speech, if known, which is necessary to convert the data into its functional use.

APPENDIX III

GRAMMAR/FUNCTION AND FUNCTION/GRAMMAR

CONVERSION PROGRAMS

Grammatical Abbreviations

(S.) = Substantive (F.) = Feminine

(n.) = Noun (M.) = Masculine

(pron.) = Pronoun (N.) = Neuter

(adj.) = Adjective (Sgl.) = Singular

(adv.) = Adverb (Pl.) = Plural

(v). = Verb {s.) = Subject

(vf.) = Finite Verb (s.c.) = Subject Compliment

(vt.) = Transitive Verb (o.c.) = Object Compliment

(vta.) = Transitive Verb, Active Voice (p.nom.) = Predicate Nominative

(vtp.) = Transitive Verb, Passive Voice (p.adj.) = Predicate Adjective

(vi.) = Intransitive Verb (d.o.) = Direct Object

(v.aux) = Auxillary Verb (i.o.) = Indirect Object

(prep.) = Preposition (interj.) = Interjection

(conj.) = Conjunction (Pers.) = Person

(dem.) = Demonstrative (pl.) = Place

(quant.) = Quantitative (cl.) = Clause

(cons.) = Consonant (i.cl.) = Independent Clause

(ante.) = Antecedent (d.cl.) = Dependent Clause

APPENDIX IV

NUMERICAL FUNCTIONAL LIST

(1) Speaker (Sp.) (Person or Model) "I" 26) Selection (Additional, Indefinite)

(2) Spoken To (Spkn.To) (Pers.,pl.,thing) (27) Rejection (One, both, all)

(3) Spoken Of (Spkn.Of) (Pers.,pl.,thing) (28) Definition (Dem.,Quant., Indefinite)

(4) Name: (Common, Proper, Generic) (29) Description (Perceptable Attributes)

(5) Possessor/Owner/Controller (30) Compliance/Constraint/Restriction

(6) Possessed/Owned/Controlled (31) Negative (-)

(7) Connected/Related/Associated (32) Neutral/Equal (=)

(8) Cause/Acting Agent(s) (33) Greater Than (>) (2>1)

(9) Result/Effected Agent(s) (34) Less Than (<) (1<2)

(10) Time (Absolute, Relative (35) Survival (+)

(11) Degree/Amount/Size (36) Conditional - Allow (+)

(12) Manner/Method/Means (37) Conditional - Prohibit (-)

(13) Place (Location, Position) (38) Purpose/Reason

(14) Origin/Source (39) Evidence

(15) Comparison (40) Act/Existence/State of Being

(16) Comparison - Similarities (41) Concession - Possible (+)

(17) Addition (+) (42) Concession - Required (-)

(18) Subtraction (-) (43) Approximation/Vicinity

(19) Multiplication (x) (44) Adverse/Reverse/Opposite (-)

(20) Division (-) (45) Stop/Conclusion (-)

(21) Mental Activity, State, Effort (46) Continue (+)

(22) Direction and/or Limit of Motion (47) Question

(23) Movement (Source - Direction) (48) Capacity Of

(24) Agent/Source (49) Emphasis

(25) Alternative (Select and Reject) (50) Positive (+)

APPENDIX V

GRAMMAR/FUNCTION

CONVERSION CHART

LINE AND LIMITING CHANNEL RELATIONSHIPS

(A) LIMITER/(+)(-) (B) LIMTED (C) CHANNEL (D) CHANNEL LOCK

FUNCTIONAL CODES

1. Noun (n):

1. Common:

1. Nom. And Obj.

1. Masculine:

1. Sgl.: (n.) (4) Name

(29) Description

2. Pl.: (n.) (4) Name

(29) Description

2. Feminine:

1. Sgl.: (n.) (4) Name

(29) Description

2. Pl.: (n.) (4) Name

(29) Description

3. Neuter:

1. Sgl.: (n.) (4) Name

(29) Description

2. Pl.: (n.) (4) Name

(29) Description

2. Possessive:

1. Masculine:

1. MSgl.: (S) (4)(5) Name/Possr.

2. Pl.: (S) (4)(5) Name/Possr.

2. Feminine

1. Sgl.: (S) (4)(5) Name/Possr.

2. Pl.: (S) (4)(5) Name/Possr.

3. Neuter:

1. Sgl.: (S) (4)(5) Name/Possr.

2. Pl.: (S) (4)(5) Name/Possr.

3. Proper

1. Nom. And Obj.

1. Masculine:

1. Sgl.: (n.) (4) Name

(n.) (29) Description

2. Pl.: (n.) (4) Name

(29) Description

2. Feminine:

1. Sgl (n.) (4) Name

(29) Description

2. Pl.: (n.) (4) Name

(29) Description

3. Neuter

1. Sgl. (n.) (4) Name (29) Description

2. Pl. (n.) (4) Name

(29) Description

2. Possessive

1. Masculine:

1. Sgl.: (S) (4)(5) Name/Possr.

2. Pl.: (S) (4)(5) Name/Possr.

2. Feminine:

1. Sgl.: (S) (4)(5) Name/Possr.

2. Pl.: (S) (4)(5) Name/Possr.

3. Neuter:

1. Sgl.: (S) (4)(5) Name/Possr.

2. Pl.: (S) (4)(5) Name/Possr.

2. Pronouns (pron.):

1. Personal

1. Nomnative

1. Masculine:

1. 1st Person:

1. Sgl.: I (4) Generic Name

(5) Speaker

2. Pl.: we (4) Generic Name

(5) Speaker

2. 2nd Person:

1. Sgl.: you (4) Generic Name

(5) Spoken To

2. Pl.: you (4) Generic Name

(5) Spoken To

3. 3rd Person:

1. Sgl.: he (4) General Name

(3) Spoken Of

2. Pl.: they (4) Generic Name

(3) Spoken Of

2. Feminine:

1. 1st Person:

1. Sgl.: I (4) Generic Name

(1) Speaker

2. Pl.: we (4) Generic Name

(1) Speaker

2. 2nd Person:

1. Sgl.: you (4) Generic Name

(2) Spoken To

2. Pl.: you (4) Generic Name

(2) Spoken To

3. 3rd Person:

1. Sgl.: she (4) Generic Name

(3) Spoken Of

2. Pl.: they (4) Generic Name

(3) Spoken Of

3. Neuter:

1. Sgl.: It (4) Generic Name

Person, place or thing

(3) Spoken Of

2. Pl.: they (4) Generic Name

Person, place or thing Spoken Of

2. Possessive

1. Masculine:

1. 1st Person:

1. Sgl.: my, mine (1) Speaker

(5) Possesses

2. Pl.: our, ours (1) Speaker

(5) Possesses

2. 2nd Person:

1. Sgl.: your, yours (2) Pers. Spoken To (5) Possesses

2. Pl.: your, yours (2) Pers. Spoken To

(5) Possesses

3. 3rd Person:

1. Sgl.: his (3) Pers. Spoken Of

(5) Possesses

2. Pl.: theirs (3) Pers. Spoken Of

(5) Possesses

2. Feminine:

1. 1st Person:

1. Sgl.: my, mine (1) Speaker (5) Possesses

2. Pl.: our, ours (1) Speaker

(5) Possesses

2. 2nd Person:

1. Sgl.: your, yours (2) Pers. Spoken To

(5) Possesses

2. Pl.: your, yours (1) Pers. Spoke To

(5) Possesses

3, 3rd Person:

1. Sgl.: her (1) Pers. Spoken Of (5) Posses

2. Pl.: theirs (1) Pers. Spoken Of

(5) Possesses

3. Neuter:

1. 3rd Person:

1. Sgl.: its (3) Person place or

thing spoken of

(5) Possesses

2. Pl.: their, theirs (3) Person, place or

thing spoken of

(5) Possesses

3. Objective:

1. Masculine:

1. 1st Person:

1. Sgl.: me (4) Generic Name (1) Speaker

2. Pl.: us (4) Generic Name

(1) Speaker

2. 2nd Person

1, Sgl.: you (4) Generic Name

(2) Spoken To

2. Pl.: you (4) Generic Name

(2) Spoken To

3. 3rd Person:

1. Sgl.: him (4) Generic Name (3) Spoken Of

2. Pl.: them (4) Generic Name

(3) Spoken Of

2. Feminine:

1. 1st Person:

1. Sgl.: me (4) Generic Name

(1) Speaker

2. Pl.: us (4) Generic Name

(1) Speaker

2. 2nd Person:

1. Sgl.: you (4) Generic Name

(2) Spoken To

2. Pl.: you (4) Gen. Name

(2) Spoken To

3. 3rd Person:

1. Sgl.: her (4) Generic Name (2) Spoken To

2. Pl.: them (4) Generic Name

(2) Spoken To

3. Neuter:

1. 3rd Person:

1. Sgl.: it (3) Generic Name

Person, place or thing spoken of

2. Pl.: them (3) Generic Name

Person, place or thing spoken of

2. Reflexive and Intensive Pronouns:

1. Nominative and Objective:

1. Masculine:

1. 1st Person:

1. Sgl.: myself (1) Speaker

2. Pl.: ourselves (1) Speakers

2. 2nd Person:

1. Sgl. yourself (2) Person Spoken To

2. Pl.: yourself (2) Persons Spoken To

3. 3rd Person.:

1. Sgl.: himself (3) Person Spoken Of

2. Pl.: themselves (3) Persons Spoken Of

2. Feminine:

1. 1st Person:

1. Sgl.: myself (1) Speaker

2. Pl.: ourselves (1) Speakers

2. 2nd Person:

1. Sgl.: yourself (2) Person Spoken

To

2. Pl.: yourself (2) Person Spoken

To

3. 3rd Person:

1. Sgl.: herself (3) Person Spoken

Of

2. Pl.: themselves (3) PersonsSpoken

Of

3. Neuter:

1. 3rd Person:

1. Sgl.: itself (3) Place or Thing

Spoken of

2. Pl.: themselves (3) PersonsSpoken

Of

3. Relative Pronouns:

1. Masculine and Feminine:

1. Nominative: who (7) Related

whoever (7) Related

whosoever (7) Related that (7) Related

2. Possessive: whose (7) Related

whosoever (7) Related

3. Objective: whom (7) Related

whomever (7) Related

whomsoever (7) Related

that (7) Related

2. Neuter

1. Nominative which (7) Related

whichever (7) Related

whichsoever (7) Related

what (7) Related

whatever (7) Related

whatsoever (7) Related

that (7) Related

2. Possessive whose (7) Related

3. Objective: which (7) Related

whichever (7) Related

what (7) Related

whatever (7) Related

whatsoever (7) Related

that (7) Related

4. Interrogative Pronouns:

1. Masculine and Feminine:

1. Nominative:

1. Sgl.: who (4)(28)(29)

Name/Def./Des.

2. Pl.: which (4)(28)(29)

Name/Def./Des.

2. Possessive: whose (4)(5)

Name/Possesses

3. Objective: whom (4)(28)(29)

Name/Def./Des.

2. Neuter

1. Nominative which (4)(28)(29)

Name/Def./Des.

what (4)(28)(29) Name/Def./Des.

2. Possessive: whose (4)(5)

Name/Possesses

3. Objective: which (4)(28)(29)

Name/Def./Des.

5. Adjective Pronouns:

1. Demonstrative:

1. Place - Near

1. Sgl.: this(4)(13)(28) Generic

Name Definition, place

2. Pl.: these (4)(13)(28) Generic Name Definition, and Place

2. Place - Far

1. Sgl.: that (4)(13)(28) Generic Name

Definition, and Place

2. Pl.: those (4)(13)(28) Generic Name

Definition and Place

2. Quantity:

1. Amount:

1. Positive: some (28) Quantity Definitive

much (28) Quantity Definitive

enough (28) Quantity Definitive

little (28) Quantity Definitive

2. Negative: none(-) (28) Quantity Definitive

3. Neutral same(=) (28) Quantity Definitive

3. Number:

1. Positive:

1. Sgl. One (28) Quantity Definitive

either (28) Quantity Definitive

each (28) Quantity Definitive

2. Pl.: some (28) Quantity Definitive

many (28) Quantity Definitive

few (28) Quantity Definitive

both (28) Quantity Definitive

2. Negative: none(-) (28) Quantity Definitive

neither(-) (28) Quantity Definitive

3. Neutral same(=) (28) Quantity Definitive

4. Order:

1. First: former (28) Order Definitive

2. Last: latter (28) Order Definitive

5. Selection:

1. Alternative other (28) Order Definitive

another(-) (27) Rejection

2. Addition: another (17) Selection Additional

3. Indefinite: any (26) Selection Indefinite

4. One of Two: either (25) Alternative

5. Rejection: neither(-) (27) Rejection

6. Substantive: anybody (26) Selection Indefinite

somebody (26) Selection Indefinite everybody (26) Selection Indefinite somewhat (26) Selection Indefinite

anything (26) Selection Indefinite

anyone (26) Selection Indefinite

someone (26) Selection Indefinite

everyone (26) Selection All

no one(-) (27) Rejection All

nobody(-) (27) Rejection All

3. Verbs (vt.,vi., or vt. And vi.) (Past Indicative, Past, Past Participle)

1. Principle Parts (pp.)

1. Present Indicative: (list) (40)(10) Name Action/Time

2. Past: (list) (23)(10) Name Action/Time

3. Past Participle: (list) (27)(10) Name Action/Time

2. Finite Verbs:

1. Transitive:

2. Active:

1. Present:

1. Sgl.:

1. 1st: (list) (40)(10)(8) Act./Time/Cause

2. 2nd (list) (40)(10)(8) Act./Time/Cause

3. 3rd (list) (40)(10)(8) Act./Time/Cause

2. Pl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8) Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

2. Present Perfect:

1. Sgl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

2. Pl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

3. Past:

1. Sgl.:

1. 1st (list) (40)(10)(8) Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

2. Pl.:

1. 1st (list) (40)(10)(8) Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8) Act./Time/Cause

4. Past Perfect:

1. Sgl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

2. Pl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

5. Future:

1. Sgl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

2. Pl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

6. Future Perfect:

1. Sgl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8)

Act./Time/Cause

2. Pl.:

1. 1st (list) (40)(10)(8)

Act./Time/Cause

2. 2nd (list) (40)(10)(8)

Act./Time/Cause

3. 3rd (list) (40)(10)(8) Act./Time/Cause

2. Passive:

1. Present:

1. Sgl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

2. Pl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

2. Present Participle:

1. Sgl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

2. Pl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

3. Past:

1. Sgl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

2. Pl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

4. Past Perfect:

1. Sgl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

5. Future:

1. Sgl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

2. Pl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

6. Future Perfect:

1. Sgl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

2. Pl.:

1. 1st (list) (40)(10)(9) Act./Time/Effect

2. 2nd (list) (40)(10)(9) Act./Time/Effect

3. 3rd (list) (40)(10)(9) Act./Time/Effect

3. Intransitive:

1. Linking:

1. Present:

1. Sgl.:

1. 1st: (s.)(s.c.) (40)(7)(10) Exist/Connect/Time

2. 2nd (s.)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s.)(s.c.) (40)(7)(10) Exist/Connected/Time

2.

1. 1st (s.)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s.)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3Rd (s.)(s.c.) (40)(7)(10) Exist/Connected/Time

2. Pres.Per.:

1. Sgl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. Pl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. Past:

1. Sgl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. Pl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

4. Past Perfect:

1. Sgl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. Pl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

5. Future

1. Sgl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. Pl.:

1. 1st (s)(s.c) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

6. Future Perfect:

1. Sgl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. Pl.:

1. 1st (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. 2nd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

3. 3rd (s)(s.c.) (40)(7)(10) Exist/Connected/Time

2. Complete

1. Present:

1. Sgl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

****

2. Pl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

2. Pres.Per.:

1. Sgl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

2. Pl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

3. Past:

1. Sgl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

2. Pl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

4. Past Perfect:

1. Sgl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

2. Pl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

5. Future:

1. Sgl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

2. PL.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

6. Future Per.:

1. Sgl.:

1· 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

2. Pl.:

1. 1st (s.) (40)(10) Act/Exist/State/Time

2. 2nd (s.) (40)(10) Act/Exist/State/Time

3. 3rd (s.) (40)(10) Act/Exist/State/Time

2. Infinitives (Verbal Noun):

1. Infinitive:

1. Active:

Present: (list) (40)(10) Act/Exist/State/Time

Pr.Pro.: (list) (40)(10) Act/Exist/State/Time

Pr.Per. (list) (40)(10) Act/Exist/State/Time

Pr.Per.Pro.: (list) (40)(10) Act/Exist/State/Time

2. Passive:

1. Present: (list) (40)(10) Act/Exist/State/Time

2. Pr. Per.: (list) (40)(10) Act/Exist/State/Time

3. Verb "Be":

1. Present: be (40)(10) Exist/Time

2. Pr. Per.: Have been (40)(10) Exist/Time

3. Participles (Verbal Adjective):

1. Active:

1. Present: (list) (40)(29)(10) Act/State/Time

2. Present Per. (list) (40)(29)(10) Act/State/Time

3. Pr.Per.Pro.: (list) (40)(29)(10) Act/State/Time

2. Passive:

1. Present: (list) (40)(29)(10) Act/State/Time

2. Past: (list) (40)(29)(10) Act/State/Time

3. Pr.Per.: (list) (40)(29)(10) Act/State/Time

3. Verb "Be":

1. Present: being (40)(29)(10) Exist/Time

2. Past: been (40)(29)(10) Exist/Time

3. Pr.Per.: having been (40)(29)(10) Exist/Time

4. Gerund

1. Present Part.: (list) (40)(4) Name/Act/Exist/State

4

5 2. Potential

1. Power: can (v.) (40) Act/Ability (can)

2. Permission: may (v.) (40) Act/Permission (may)

3. Compulsion: must (v.) (40) Act/Compulsion (must)

4. Obligation: should (v.) (40) Act/Obligation (should)

ought (v.) (40) Act/Obligation (ought)

5. Possibility may (v.) (40) Act/Possibility (may)

4. Adjectives (adj.):

1. Demonstrative:

1. General:

1. Sgl.: the (S.) (28) Definitive

2. Pl.: the (S.) (28) Definitive

2. Near:

1. Sgl.: this (S.) (28) Definitive

2. Pl.: these (S.) (28) Definitive

3. Far:

1. Sgl.: that (S.) (28) Definitive

2. Pl.: those (S.) (28) Definitive

4. Indefinite:

1. Before Cons. a (S.) (28) Definitive

2. Before Vowel an (S.) (28) Definitive

3. Numerical Ordinal:

1. Sgl.: first (S.) (28) Definitive

2. Pl.: second(S.) (28) Definitive

third (S.) (28) Definitive

etc. (S.) (28) Definitive

(list) (S.) (28) Definitive

4. Pronominal:

1. Masculine:

1. Sgl.:

1. 1st my (S.) (28)(5) Definitive

nd

2. 2 your (S.) (28)(5) Definitive

3. 3rd his (S.) (28)(5) Definitive

2. Pl:

1. 1st our (S.) (28)(5) Definitive

2. 2nd your (S.) (28)(5) Definitive

3. 3rd their (S.) (28)(5) Definitive

2. Feminine:

1. Sgl.:

1. 1st my (S.) (28)(5) Definitive

2. 2nd you (S.) (28)(5) Definitive

3. 3rd her (S.) (28)(5) Definitive

2. Pl.:

1. 1st our (S.) (28)(5) Definitive

2. 2nd your (S.) (28)(5) Definitive

3. 3rd their (S.) (28)(5) Definitive

3. Neuter:

1. Sgl.:

1. 3rd its (S.) (28)(7) Definitive

2. Pl.: 1. 3rd their (S.) (28)(7) Definitive

5. Relative:

1. Person: whose (S.) (28)(7) Definitive

2. Place or Thing: which (S.) (28)(7) Definitive

6. Interrogative:

1. Person: what (S.) (28)(7) Definitive

2. Place or Thing: which (S.) (28)(7) Definitiv

2. Quantitative:

1. Indefinite:

1. Sgl.: one (S.) (28) Definitive/Quantity

2. Pl.: some (S.) (28) Definitive/Quantity

many (S.) (28) Definitive/Quantity

few (S.) (28) Definitive/Quantity

all (S.) (28) Definitive/Quantity

2. Numerical:

1. Sgl.: one, 1 (S.) (28) Definitive/Quantity

2. Pl.: two, 2 (S.) (28) Definitive/Quantity

three (S.) (28) Definitive/Quantity

etc. (S) (28) Definitive/Quantity

(list) (S.) (28) Definitive/Quantity

(Note: Most, if not all, definitive adjectives are converted into adjective pronouns by merely dropping the substantives that they modify.

Definite adjectives: Some men are born great.

Few liars go unsuspected.

There is a little evidence of his work.

Adjective pronouns: Some are born great.

Few go unsuspected.

Little has been accomplished.

Rather than create a whole new class of pronouns that would include virtually every definitive adjective, it is simpler to program the computer to use definitive adjectives as pronouns. Adjective suffixes (i.e. -ful, -less, -like, -ly, -ous, -ant, -ent, -ate, etc.) can be handled in a like manner.).

3. Descriptive: (Positive Compare, Comparative Compare, Superlative Compare)

1. Size:

1. Positive Comp.: large (S.) (29) Descriptive/Size

big (S.) (29) Descriptive/Siz little (S.) (29) Descriptive/Size

small (S.) (29) Descriptive/Size

(list) (S.) (29) Descriptive/Size

2. Compare Comp.: larger (S.) (29) Descriptive/Size

bigger (S.) (29) Descriptive/Size

littler (S.) (29) Descriptive/Size

smaller (S.) (29) Descriptive/Size

(list) (S.) (29) Descriptive/Size

3. Superl. Comp.: largest (S.) (29) Descriptive/Size

biggest (S.) (29) Descriptive/Size

littlest (S.) (29) Descriptive/Size

smallest (S.) (29) Descriptive/Size

(list) (S.) (29) Descriptive/Size

2. Shape:

1. Positive Comp.: round (S.) (29) Descriptive/Shape

oblong (S.) (29) Descriptive/Shape

(list) (S.) (29) Descriptive/Shape

2. Compare Comp.: more round (S.) (29) Descriptive/Shape

more oblong (S.) (29) Descriptive/Shape

(list) (S.) (29) Descriptive/Shape

3. Superl. Comp.: most round (S.) (29) Descriptive/Shape

most oblong (S.) (29) Descriptive/Shape

3. Color:

1. Positive Comp.: red (S.) (29) Descriptive/Color

blue (S.) (29) Descriptive/Color

green (S.) (29) Descriptive/Color

yellow (S.) (29) Descriptive/Color

black (S.) (29) Descriptive/Color

white (S.) (29) Descriptive/Color

(list) (S.) (29) Descriptive/Color

2. Compare Comp.: redder (S.) (29) Descriptive/Color

bluer (S.) (29) Descriptive/Color

greener (S.) (29) Descriptive/Color

yellower (S.) (29) Descriptive/Color

blacker (S.) (29) Descriptive/Color

whiter (S.) (29) Descriptive/Color

(list) (S.) (29) Descriptive/Color

3. Superl. Comp.: reddest (S.) (29) Descriptive/Color

bluest (S.) (29) Descriptive/Color

greenest (S.) (29) Descriptive/Color

yellowest (S.) (29) Descriptive/Color

blackest (S.) (29) Descriptive/Color

whitest (S.) (29) Descriptive/Color

(list) (S.) (29) Descriptive/Color

3. Texture.:

1. Positive Comp.: rough (S.) (29) Descriptive/Texture

smooth (S.) (29) Descriptive/Texture

pocked (S.) (29) Descriptive/Texture

(list) (S.) (29) Descriptive/Texture

2. Compare Comp.: rougher (S.) (29) Descriptive/Texture

smoother (S.) (29) Descriptive/Texture

more pocked (S.) (29) Descriptive/Texture

(list) (S.) (29) Descriptive/Texture

3. Superl. Comp.: roughest (S.) (29) Descriptive/Texture

smoothest (S.) (29) Descriptive/Texture

most pocked (S.) (29) Descriptive/Texture

4. Taste.:

1. Positive Comp.: sweet (S.) (29) Descriptive/Taste

sour (S.) (29) Descriptive/Taste

salty (S.) (29) Descriptive/Taste

(list) (S.) (29) Descriptive/Taste

2. Compare Comp.: sweeter (S.) (29) Descriptive/Taste

more sour (S.) (29) Descriptive/Taste

more salty (S.) (29) Descriptive/Taste

(list) (S.) (29) Descriptive/Taste

3. Superl. Comp.: sweetest (S.) (29) Descriptive/Taste

most sour (S.) (29) Descriptive/Taste

more salty (S.) (29) Descriptive/Taste

5. Smell.:

1. Positive Comp.: stink (S.) (29) Descriptive/Smell

(list) (S.) (29) Descriptive/Smell

2. Compare Comp.: more stink (S.) (29) Descriptive/Taste

(list) (S.) (29) Descriptive/Smell

3. Superl.Comp.: most stink (S.) (29) Descriptive/Taste

(list) (S.) (29) Descriptive/Smell

6. Quality.:

1. Positive Comp.: fast (S.) (29) Descriptive/Quality

straight (S.) (29) Descriptive/Quality

good (S.) (29) Descriptive/Quality

strong (S.) (29) Descriptive/Quality

(list) (S.) (29) Descriptive/Quality

2. Compare Comp.: faster (S.) (29) Descriptive/Quality

straighter (S.) (29) Descriptive/Quality

better (S.) (29) Descriptive/Quality

stronger (S.) (29) Descriptive/Quality

(list) (S.) (29) Descriptive/Quality

3. Superl.Comp.: fastest (S.) (29) Descriptive/Quality

straightest (S.) (29) Descriptive/Quality

best (S.) (29) Descriptive/Quality

strongest (S.) (29)Descriptive/Quality

(list) (S.) (29) Descriptive/Quality

5. Adverb (adv.):

1. Simple:

1. Time:

1. Absolute:

1. Present: now (v.) (10) Time

2. Other: then (v.) (10) Time

sometimes (v.) (10) Time

today (v.) (10) Time

already (v.) (10) Time

Monday (v.) (10) Time

(list) (v.) (10) Time

2. Relative:

6 1. Nearness:

7 1. Compare

soon (v.) (10)(7) Time/Relative

late (v.) (10) (7) Time/Relative

2. Compare Comp:

sooner (v.) (10)(7) Time/Relative

latter (v.) (10)(7) Time/Relative

3. Superlative Comp:

soonest (v.) (10)(7) Time/Relative

latest (v.) (10)(7) Time/Relative

2. Frequency

1. Positive Comp:

often (v.) (10)(7) Time/Def.Quant.

occasionally (v.) (10)(7) Time/Def.Quantat.

2. Compare Comp:

more often (v.) (10)(28)Time/Def.Quantat.

3. Superlative Comp:

most often (v.) (10)(28)Time/Def.Quantat.

3. Continuation:

yet (v.) (10)(28)Time/Def.Indefinite

2. Place:

1. Location: here (v.) (13) Place/Location

there (v.) (13) Place/Location

yonder (v.) (13) Place/Location

(list) (v.) (13) Place/Location

2. Direction right (v.) (13) Place/Direction

left (v.) (13) Place/Direction

forward (v.) (13) Place/Direction

backward (v.) (13) Place/Direction

hither (v.) (13) Place/Direction

(list) (v.) (13) Place/Direction

3. Manner:

1. Positive Comp: thus (v.) (12) Manner

carefully (v.) (12) Manner

so (v.) (12) Manner

well (v.) (12) Manner

right(+) (v.) (12) Manner

wrong(-) (v.) (12) Manner

(list) (v.) (12) Manner

2. Compare Comp:

more

carefully (v.) (12) Manner

(list) (v.) (12) Manner

3. Superl. Comp: most

carefully (v.) (12) Manner

(list) (v.) (12) Manner

4. Negation: not(-) (v.) (3) Negation

5. Cause: why (v.) (8) Cause

therefore (v.) (8) Cause

5. Degree: greatly (v.) (11) Degree

completely (v.) (11) Degree

very (adv.)(adj.) (11)(28) Degree

rather (adv.)(adj.) (11)(28) Degree

somewhat (adv.)(adj.) (11)(28) Degree

just (adv.)(adj.) (11)(28) Degree

how(well) (adv.)(adj.) (11)(28) Degree

(list) (adv.)(adj.) (11)(28) Degree

1. 2. Relative Adverbs:

2.

1. Time: when ** (10)(7) Time/Relative

as ** (10)(7) Time/Relative

2. Place: where ** (13)(7) Place/Relative

3. Manner: as ** (12)(7) Manner/Relative

as if ** (12)(7) Manner/Relative

as though ** (12)(7) Manner/Relative

4. Degree as ** (11)(7) Degree/Relative

so ** (11)(7) Degree/Relative

the ** (11)(7) Degree/Relative

than ** (11)(7) Degree/Relative

**** Modify verbs, adjectives, and adverbs, and connect clauses.**

3. Correlative Adverbs:

1. Time: when…then (v.) (10)(7) Time/Relative

2. Place: where…there (v.) (13)(7) Place/Relative

3. Manner: as…as (v.) (12)(7) Manner/Relative

4. Degree: the…the (v.) (11)(7) Degree/Relative

4. Interrogative Adverbs:

1. Time: when (v.) (10) Time?

2. Place: where (v.) (13) Place/Location

which way (v.) (13) Place/Direction

3. Manner: how (v.) (12) Manner

4. Degree: how much (v.) (11) Degree

5. Cause why (v.) (8) Cause

4. Expletive

1. "There": there (v.) (28) Demonstrative

2. "Yes" and "No":

1. Yes: yes(+) (v.) (30) Positive

certainly(+) (v.) (30) Positive

of course (+) (v.) (30) Positive

2. No: no(-) (v.) (31) Negative

never(-) (v.) (31) Negative

by no means(-)(v.) (31) Negative

2. Preposition

1. Description: with ** (29) Description

2. Motion/Movement:

1. Place: from…to ** (13)(13) Place-Place

from under ** (14)(13) Source/Place

from within ** (14)(13) Source/Place

at about ** (14)(43) PL./Approximate

2. Time: from…to ** (10)(10) Time-Time at about ** (10)(43) Time/Approximate

3. Direction/Limit into ** (22) Limit Motion

to ** (22) Limit Motion

forward ** (22) Limit Motion

at ** (22) Limit Motion

by way of ** (22) Limit Motion

through ** (22) Limit Motion

along ** (22) Limit Motion

4. Degree: from…to ** (29) Des./Des.

3. Agent: by ** (24) Agent

4. Purpose/Reason for ** (38) Purpose

5. Possession: of ** (5) Possesses

6. Alteration: instead ** (25) Alteration

instead of ** (25) Alteration

7. Association with ** (7) Association

in regard to ** (7) Association as to ** (7) Association

in presence of (7) Association**

in* ** (7) Association**

8. Causation: because ** (8) Cause

on* ** (8) Cause**

owing to ** (8) Cause by reason of ** (8) Cause

on account of ** (8) Cause because of ** (8) Cause

9. Effect/Result: from ** (9) Effected/Result

10. Time: at ** (10) Time

after ** (10) Time

before ** (10) Time

during ** (10) Time

11. Degree: in full ** (10) Degree

in half ** (10) Degree in extreme ** (11) Degree

12. Manner/Means: with ** (12) Manner

by ** (12) Manner

in ** (12) Manner

in accordance

with ** (11) Manner

by means of ** (11) Manner

by way of ** (11)

13. Place: at ** (13) Place

in ** (13) Place

beside ** (13) Place

by the side of ** (13) Place

between ** (13) Place

among ** (13) Place

in among ** (13) Place

before ** (13) Place

in front of ** (13) Place

14. Source (origin): of ** (14) Source

out of ** (14) Source

from ** (14) Source

15. Comparison:

1. Similarities: like ** (15) Similarities

2. Differences: from ** (16) Differences than ** (16) Differences

16. Approximation about ** (43) Approximation

around ** (43) Approximation

near ** (43) Approximation

about to ** (43) Approximation

17. Addition (+): besides ** (17) Addition

in

addition(+) ** (17) Addition

plus(+) ** (17) Addition

in addition

to(+) ** (17) Addition

18. Subtraction (-): less(-) ** (18) Subtraction

minus(-) ** (18) Subtraction

19. Multiplication (x): times(X) ** (19) Multiplication

of (%) ** (19) Multiplication

20. Division(-): of(+) ** (20) Division

21. Mental/Physical Activity:

1. Desire, Longing

Hope, Need, Feeling,

Hatred, Love: for ** (7) Relative

2. Thought: of ** (7) Relative

about ** (7) Relative

3. Anger:

1. Person with ** (7) Relative

2. Object at ** (7) Relative

4. Try, Effort: to ** (7) Relative

5. Opposition: to ** (7) Relative

6. Support: of ** (7) Relative

7. Loyalty: to ** (7) Relative

8. Trust in ** (7) Relative

9. Interest in ** (7) Relative

to ** (7) Relative

10. Look (see) at ** (7) Relative

22. Conditional: if ** (36) Conditional

23. Constraints/Restrict only ** (45) Constraint

in accordance

with ** (45) Constraint

(Note: ** The Preposition is used with a substantive (usually before it) to form a phrase, which usually performs the function of either an adjective or an adverb. Therefore, the Preposition is used to limit those things limited by both adjectives and adverbs.

***** "In" used after comparative adjective or adverb (i.e. "greater in number")**

****** "On" used with "ing" verb (i.e. "relying on))**

7. Conjunctions:

1. Coordinating: and(+) (7)(17)Connect/Add

and (8) Cause

and (38) Purpose

or(+) (7)(25) Connect/Alt.

either/or(+) (7)(25) Connect/Alt.

nor(-) (7)(27) Con./Reject

neither/nor(-)(-) (7)(27) Con./Reject

but(-) (7)(44) Con./Oppose

2. Subordinating:

1. Cause because (i.cl.) (8)Cause

since (i.cl.) (8)Cause

for (i.cl.) (8)Cause

as (i.cl.) (8)Cause

2. Evidence: because (i.cl.) (37)Evidence

since (i.cl.) (37)Evidence

for (i.cl.) (37)Evidence

as (i.cl.) (37)Evidence

3. Purpose:

1. Positive: that (i.cl.) (38) Purpose

4. Conditional:

1. Positive: if(+) (i.cl.) (36) Cond. Possible

2. Negative: unless(-) (i.cl.) (37) Cond. Required

5. Concession:

1. Positive: notwithstanding(+) (30) Positive

if (+) (30) Positive

in spite of(+) (30) Positive

2. Negative: though(-) (31) Negative

3. Transitional:

1. Continuation moreover(+) (43) Continue

furthermore(+) (43) Continue

and(+) (43) Continue

2. Reverse: but(-) (44) Adverse/Opp.

however(-) (44) Adverse/Opp.

3. Conclusion: ergo (45) Conclusion

consequently (45) Conclusion

therefore (45) Conclusion

wherefore (45) Conclusion

whence (45) Conclusion

(Note: * "If" is rarely used in this capacity: "If Franklin was not the only Revolutionary patriot, he certainly was the shrewdest of them all.")

8. Expletives;

1. Subject/Verb Reverse: there (40) Existence

2. Capacity of: as (48) Capacity Of

3. Another Name: or (4) Name

4. Intro. Noun Clause that(+) (7) Connect/Related but that(-) (7) Connect/Related

if(+) (36) Conditional

whether(+) (36) Conditional

(Note: "Or" is an expletive when used to off another name or set of symbols for that given. In this sense, it is not an actual alternative, but rather only presents an alternate name.)

(As noted, the author thinks it would be a waste of the readers time to go through methods of matching certain symbols, depending upon their chronological place in the communication with the their functional counterpart using the outdated methodology the author possesses. I will, however, place here a few random general descriptions that the Grammar-Function, and Functions to Grammar (i.e. where a "(29) = Description)" appears in a statement to obtain its meaning in that statement.

I don't list very many here, because this is only meant to show the young programmers that this would be an easier than it looks. This is where Column (d.) comes into play and tells the machine exactly how the word was used that particular time. For your information and guidance are just a couple of our further breakdown listings used to pinpoint the exact use of the symbol.

1. Punctuation:

1. Period(.): . (45) Conclusion

2. Exclamation Mark (!): ! (45)(49)

Conclusion/Emphasis

3. Question Mark(?): (?) (45)(50)

Conclusion/Question

4. Comma (,): , (46) Continuation

5. Colon (:): : (45)(46)

Conclusion/Continue

6. Semi-Colon (;) ; (45)(46)

Conclusion/Continue

7. Hyphen (-) - (46) Conclusion

8. Underline (_) _ (49) Emphasis

(Note: Interjections are best handled by the initial models in their respective basic parts of speech without making any special allowances for them in the program.)

APPENDIX VI

ROTE MEMORY (RM)
WORD AND NUMBER CATALOG PROGRAM

The Rote Memory (RM) Word and Number Catalog is designed to allow each known symbol, word, and phrase to be stored and retrieved by and in accordance with its particular part(s) of speech. This catalog can be structured either to require each word to be specifically placed in all possible uses manually, or programmed to recognize certain word forms in the various part(s) of speech and, from these, generate all other possible forms (i.e. Infinitives can be placed in the catalog directly, or the catalog can be programmed to form the infinitive given the principle parts of the verb. As verbs are "taught" to the computer by listing their principle part of speech (i.e. (vi.) or (vt.), for the program to further breakdown a verb into all its many forms, it would need also to be furnished the three principle parts of the verb (i.e. (vi.) or (vt.), for the program to further breakdown a verb into all its many forms, it would need also to be furnished the three principle parts of the verb (i.e. (vi)(go)(went)(gone).

All common listings are to be arranged alphabetically, or, if numbers, sequencally; and all storage classifications must be identified and assessable to the Rote Memory (RM) Program. In the example of a grammatical listing furnished in the GF/FG Conversion Chart (GF/FG), colons were deliberatly placed after each heading to indicate further listings are possible at each location. Each word is stored under its most specific known classification, and each word and number is retrievable by either its specific classification, and each word and number is retrievable by either its specific classification or any classification or any classification above it. Within the limits of the equipment and programs being used, there should be as much storage space as possible under each listed classification (See Appendix III, Column A).

The actual programming of the artificial brain is not concerned with what the particular noun, adjective, verb, adverb, etc. represents, but with only being able to identify with which of these it is dealing, and in which of its particular applications. The operator of the program will be concerned, for instance, with what the word "walk" means and does, but the program itself will only need to know that walk is a noun (n.), a transitive verb (vt.), and an intransitive verb (vi.). Essentially, these parts of speech tell it that which, as a machine, it is incapable of physically perceiving. These symbolic characteristics of walk, which are "learned" and stored in the machine, are the most basic things that the machine would come to learn about "walk" if it had the capacity for sensory perceptions. The machine will never really know what it is "to walk", but, based on the knowledge about the possible part(s) of speech of the word, it will be able to store, retrieve, and communicate about the relationships of walk to other stored textr as though it had such awareness.

As the Rote Memory (RM) Program retrieves the symbols, words, and phrases stored in the (RM) files, it

must be programmed to recognize all text in storage by:

1. Position of each symbol in the word;

2. Position of word with respect to other word, or words stored in same location and/or at same time; and

3. Identical (or similar) words.

This will allow it to retrieve alphabetically, sequencally, grammatically, and/or by similar words as requested by Functional Memory (FM).

In order to not overencumber the machine with requests for spelling corrections, it might prove beneficial to build into the Rote Memory (RM) Program the capapcity to locate and retrieve frequently misspelled words. If (RM) cannot find a entered word in its catalog, it might be programmed to make the following changes to the word and checking for a listing before sending the unidentified word to the Grammar Function/Function Grammar Kit (G/F KIT) where it will only cause a question to be sent to Display for clarification:

1. Interchange any two connecting vowels in the word;

2. Change each "a" to "e" individually;

3. Change each "e" to "I" individually;

4. Change each "I" to "e" individually;

5. Change each "e" to "a" individually;

6. Change each "I" to "a" individually;

7. Change each "a" to "I" individually; and

8. Change each "o" to "u" individually.

Note: Programs like this have been develooped since this documant was first written. Obviously, full advantage would be taken of these, with any corrections that might be requeired. If some type of spelling correction program is written to the Rote Memory (RM) Program, it should be designed to send the selected (corrected) word from files to (G/F KIT) along with the appropriate identifying symbols as this will alert the operator as to the word used if it is not the intended, and the operator can re-enter at that time.

1. Functions of Rote Memory (RM) Program:

The primary functions of Rote Memory (RM) are:

1. To store symbols, words, and groups of words in alphabetical and numerical order and in accordance with their respective part(s) of speech of each;

2. To retrieve any similar symbol, word, and/or words from storage along with all approriate storage file codes for symbols, words, or groups of words received from the Read to Rote (RR) Unit, and send these to the Grammar/Function Conversion Kit (G/F KIT); and

3. To locate symbols, words, and groups of words received from Functional Memory (FM) and, through its internal communications with Functional Memory (FM), furnish Functional Memory (FM) with any requested relationships between and among symbols, words, or groups of words (Normally words preceeding or following a symbol, word, or group of words.).

2. Operation of Rote Mermory (RM) Program:

1. Rote Functional Memory (FM) receives symbols, words, and groups of words from Read to Rote (RR) with either a "File" or "Find" instruction (No instruction indicates to Find.).

2. If a symbol, word, or group of words is received by (RM) from (RR) preceeded by an indentifiable set of filing instructions [i.e. (n.)(1)(1)(1) Tree, (Noun) (Nominative Case)(Masculine)(Singular)(Tree], the symbol, word or group of words is placed in the location in Rote Memory (RM) indicated by those instructions and sent to the Grammar/Function Conversion Kit (G/F KIT) with those instructions preceeding the symbol, word, or group of words.

3. If a symbol, word, or group of words, is received by (RM) that is not preceeeded by filing instructions, the program of (RM) searches its files for any identical (or, if so programmed, similar) symbol, word, or group of words, and send the to the Grammar/Function Conversion Kit (G/F KIT) preceeded by the file code(s) for the location(s) in which the information was located.

4. Rote Memory (RM) records all symbols, words, or groups of words received in the sequence received and is capable of retrieving words in sequence, either forward or backward, from any identifiable word or sequencial set of words. Normally these will be used in response to requests from Functional Memory.

APPENDIX VII

GRAMMAR-FUNCTION/FUNCTION-GRAMMAR

(GF/FG)

CONVERSION PROGRAMS

Through the use of the Grammar-Function/Function-Grammar Conversion Chart (Appendix III), the Grammar-Function (GF) Conversion Kit converts the grammatical form of text received from the keyboard of the model through Rote Memory (RM) into its functional counterpart in the Temporary Thought Frame (TTF), Appendix VI, where it is automatically transmitted to the similarly structured processing and storage facilities of Functional Memory (FM). Likewise, using this same conversion chart, the Function-Grammar (FG) Conversion Kit, upon command, converts that which is stored in the various activated locations in the Temporary Thought Frame (TTF) into its proper grammatical syntax for display.

Both of these programs can be as simple, or as sophisticated, as desired. The more sophisticated the Grammar-Function (GF) Conversion Kit, the more distinctive and discriminating will be the machine's ability to "think". The more sophisticated the Function-Grammar (FG) Conversion Kit, the more grammatically correct will be the model's transmissions out. As the brain builder sets out to do what has never been done before, to build an actual working model of the human brain, it is suggested that excessive time not be wasted on perfecting the machine's storage and grammar profeciency until after such time as the model is in operation. Perfection takes time; and, if that time costs the ability to produce a working model in the near future, there may not be time.

2. <u>Grammar-Function (GF) Conversion Program</u>

The following program is designed to recognize and place each symbol or word into the Temporary Thought Frame (TTF) on an individual basis. However, given the complexity of the English language, it might prove beneficial and less time consuming if the Grammar-Function (GF) Conversion Kit Program is instructed to recognize from the filing symbols that are received along with text from Rote Memory (RM) the following general classifications for words and phrases:

1. <u>Substantives</u> (Noun, Pronoun, Adjective, Verbal Phrase and Noun

Clause).

2. <u>Unclaimed Substantive</u> (Substantive not preforming function of principal term of prepositional or adverbial phrase or used as an adjective to modify a noun).

3. <u>Finite Verbs and Finite Phrases</u>.

4. <u>Infinite Verbs and Infinite Verb Phrases</u>.

5. <u>Finite Verbs That May Take an Indirect Object</u> (give grant, allow, pay, loan, hand, send, allot, write, tell, relate, get).

6. Finite Verbs That May Take an Adverbial Objective (like, unline, and near).

7. Prepositional Phrases.

8. Dependent and Independent Clauses, Sentences, and Paragraphs.

Without such concepts appearing as mini-programs, each of these concepts must be dealt with on an individual word basis; and this will cause the machine some difficulty as it attempts to break a complicated sentence down into its functional meaning. It might require a bit more initial effort to write these mini-programs, but recognizing such basic concepts would simplify the writing of the major grammar to function conversion program, as well as make the major program more efficient.

When the Grammar/Function Conversion Program places a symbol, word or set of words in the Temporary Thought Frame (TTF), it copies the symbol, word, or set of words itself into the (TTF), alone with any positive, negative, or calculation notations, as well as all relevant channel codes. It makes a further note of the fact that the transmission has been made and the location to which each element was assigned in the Temporary Thought Frame (TTF).

While the ability to recognized the above mentioned grammatical re-occurrences might improve the speed and accuracy of the conversion program, it can be done on an individual work basis as demonstrated in the following example (Note that there is a provision to handle a symbol, word or phrase that appears at the beginning of a clause, sentence, or transmission differently from the same symbol, word, or phrase appearing later in the clause, sentence, or transmission. This is done to catch the adverbial clause introducing a clause or sentence):

1. Read the first symbol, word, or phrase of the first clause, sentence, or, transmission, and, if the Part(s) of Speech filing code of this symbol, word or phrase is (a.), place the symbol, word, or phrase, along with any filing codes, instructional codes, and channel codes, in (b.) and go to (c.):

(a.) (b.) (c.)

(1) (n.) Noun 10 11

(2) (pron.) Pronoun 20 21

(3) (v.)(vt.)(vi.) Verb 30 31

(4) (adj.) Adjective 40 41

(5) (adv.) Adverb 50 51

(6) (prep.) Preposition 60 61

(7) Conjunction 70 71

(8) Expletive 80 81

(9) Punctuation (Quote) 90 91

2. Read the next symbol, word, or phrase accompanied, including all filing And channel code(s) from Rote Memory and from GF/FG Conversion Chart, Appendix III, and if the code indicates that the symbol, word, or phrase is (a.), place word in (b.) and go to (c.)

(a.) (b.) (c.)

(1) (n.) Noun 10 12

(2) (pron.) Pronoun 20 22

(3) (v,)(vt.)(vi.) Verb 30 32

(4) (adj.) Adjective 40 42

(5) (adv.) Adverb 50 52

(6) (prep.) Preposition 60 62

(7) Conjunction 70 72

(8) Expletive 80 82

(9) Punctuation 90 92

20.1 (Unidentified Word)

20.2 (L1) (First Limiter 2.0) (Code(s))

20.3 (L1)(L1) (First Limiter of First Limiter of 2.0) (Code(s))

20.4 (L2)(L1) (Second Limiter to First Limiter of 2.0) (Code(s))

20.5 (L3)(L1) (Third Limiter to First Limiter of 2.0) (Code(s))

3.2 (L2) (Second Limiter of Unidentified Word) (Code(s))

20.6 (L1)(L1) (First Limiter of Second Limiter of 2.0) (Code(s))

3..22 (L2)(L1) (Second Limiter to Second Limiter of 2.0) (Code(s))

20.7 (L3)(L1) (Third Limiter to Second Limiter of 2.0) (Code(s))

20.8 (Possessed) (Filing Code(s)) [Channel Code(s)]

20.9 (L1) (First Limiter of 4.0) (Filing Code(s)) [Channel Code(s)]

20.10 (L1)(L1) (First Limiter of First Limiter of 4.0) (Codes)

20.11 (L2)(L1) (Second Limiter of First Limiter of 4.0) (Codes)

20.12 (L3)(L1) (Third Limiter of First Limiter of 4.0) (Codes)

20.13 (L2) (Second Limiter of 4.0) (Filing Code(s)) [Channel Code(s)]

4.21 (L1)(L2) (First Limiter of Second Limiter of 4.0) (Codes)

4.22 (L2)(L2) (Second Limiter of Second Limiter of 4.0) (Codes

4.23 (L3)(L2) (Third Limiter of Second Limiter of 4.0) (Codes)

4.3 (L3) (Third Limiter of 4.0) (Filing Code(s)) (Channel Code(s)]

4.31 (L1)(L3) (First Limiter of Third Limiter of 4.0) (Codes)

4.32 (L2)(L3) (Second Limiter of Third Limiter of 4.0) (Codes)

4.33 (L3)(L3) (Third Limiter of Third Limiter of 4.0) (Codes)

20.14 (Possessor) (Filing Code(s)) [Channel Code(s)]

20.15 (L1) (First Limiter of 5.0 (Filing Code(s)) [Channel Code(s)]

5.11 (L1)(L1) (First Limiter of First Limiter of 5.0) (Codes)

5.12 (L2)(L1) (Second Limiter of First Limiter of 5.0) (Codes)

5.13 (L3)(L1) (Third Limiter of First Limiter of 5.0) (Codes)

20.16 (L2) (Second Limiter of 5.0) (Filing Code(s)) [Channel Code(s)]

5.21 (L1)(L2) (First Limiter of Second Limiter of 5.0) (Codes)

5.22 (L2)(L2) (Second Limiter of Second Limiter of 5.0) (Codes)

5.23 (L3)(L2) (Third Limiter of Second Limiter of 5.0) (Codes)

20.17 (L3) (Third Limiter of 5.0) (Filing Code(s)) [Channel Code(s)]

5.31 (L1)(L3) (First Limiter of Third Limiter of 5.0) (Codes)

5.32 (L2)(L3) (Second Limiter of Third Limiter of 5.0) (Codes)

5.33 (L3)(L3) (Third Limiter of Third Limiter of 5.0) (Codes)

20.18 (Channel Lock between 5.0 and 4.0) (Symbol, word, and codes)

5.50 If 5.0 is (a.), place (b.) in 5.4 (Channel Lock), and go to (c.):

(a.) (b.) (c.)

1,1,2 's 5.51

1,2,2 's 5.51

2,2 5.0 5.51

2.4 5.0 5.51

4.4 5.0 5.51

5.51 Read next word. If next word is (a.), place word in (b.), place (5.0)(-'s) in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun 4.0 4.1 5.541

(2)(pron.)Pronoun 4.0 4.1 5.541

(3)(v.)(vt.)(vi) Verb 4.0 4.1 5.541

(4)(adj.)Adjective 4.1 5.0 5.51

(5)(adv.)Adverb 4.1 5.0 5.51

(6)(prep.)Preposition5.1 5.0 5.51

(7)Conjunction 5.1 5.0 5.52

(8)Expletive 5.1 5.0 5.51

(9)Punctuation 5.1 5.0 5.541

Quote

5.52 Read next word. If next word is (a.), place word in (b.), place (5.0)(-'s) in (c.), and go to (d.)

(a.) (b.) (c.) (d.)

(1)(n.)Noun 4.0 4.2 5.542

(2)(pron.)Pronoun 4.0 4.2 5.542

(3)(v.)(vt.)(vi.)Verb 4.0 4.2 5.542

(4)(adj.)Adjective 4.2 5.0 5.52

(5)(adv.)Adverb 4.2 5.0 5.52

(6)(prep.)Preposition5.2 5.0 5.52

(7)Conjunction 5.2 5.0 5.52

(8)Expletive 5.2 5.0 5.52

(9)Punctuation 5.2 5.0 5.542

Quote

5.53 Read next word. If next word is (a.), place word in (b.), place (5.0)(-'s) in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun 4.0 4.3 5.543

(2)(pron.)Pronoun 4.0 4.3 5.543

(3)(v.)(vt.)(vi.)Verb 4.0 4.3 5.543

(4)(adj.)adjective 4.3 5.0 5.52

(5)(adv.) 4.3 5.0 5.52

(6)(prep.)Preposition5.3 5.0 5.52

(7)Conjunction 5.3 5.0 5.52

(8)Expletive 5.3 5.0 5.52

(9)Punctuation 5.3 5.0 5.543

5.541 Place 4.0 in TTF(I)(1); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(I)(1); connect TTF(I)(1) to that stored in 5.0 by 5.4, and go to 2.

5.542 Place 4.0 in TTF(I)(2); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(I)(2); connect TTF(I)(2) to that stored in 5.0 by 5.4, and go to 3.

5.543 Place 4.0 in TTF(I)(3); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(I)(3) to that stored in 5.0 by 5.4, and go to 30.

5.56 Read next word. If next word is (a.), place word in (b.), place (5.)(-'s) in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun 4.0 4.2 5.6

(2)(pron.)Pronoun 4.0 4.2 5.6

(3)(v.)(vt.)(vi)Verb 4.0 4.2 5.6

(4)(adj.)Adjective 4.6 5.0 5.56

(5)(adv.)Adverb 4.6 5.0 5.56

(6)(prep.)Preposition5.6 5.0 5.56

(7)Conjunction 5.6 5.0 5.56

(8)Expletive 5.6 5.0 5.56

(9)Punctuation 5.6 5.0 5.6

Quote

5.57 Read next word. If next word is (a.), place word in (b.), place (5.0)(-'s) in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun 4.0 4.2 5.7

(2)(pron.)Pronoun 4.0 4.2 5.7

(3)(v.)(vt.)(vi.)Verb 4.0 4.2 5.7

(4)(adj.)Adjective 4.7 5.0 5.57

(5)(adv.)Adverb 4.7 5.0 5.57

(6)(prep.)Preposition5.7 5.0 5.57

(7)Conjunction 5.7 5.0 5.57

(8)Expletive 5.7 5.0 5.57

(9)Punctuation 5.7 5.0 5.7

Quoted

5.58 Read next word. If next word is (a.), place word in (b.), place (5.0)(-'s) in (c.) and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun 4.0 4.2 5.8

(2)(pron.)Pronoun 4.0 4.2 5.8

(3)(v.)(vt.)(vi.)Verb 4.0 4.2 5.8

(4)(adj.)Adjective 4.8 5.0 5.58

(5)(adv.)Adverb 4.8 5.0 5.58

(6)(prep.)Preposition5.8 5.0 5.58

(7)Conjunction 5.8 5.0 5.58

(8)Expletive 5.8 5.0 5.58

(9)Punctuation 5.8 5.0 5.8

Quote

5.59 Read next word. If next word is (a.), place word in (b.), place (5.0)(-'s) in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)(Noun) 4.0 4.2 5.9

(2)(pron.)Pronoun 4.0 4.2 5.9

(3)(v.)(vt.)(vi.)Verb 4.0 4.2 5.9

(4)(adj.)Adjective 4.9 5.0 5.59

(5)(adv.)Adverb 4.8 5.0 5.59

(6)(prep.)Preposition5.9 5.0 5.59

(7)Conjunction 5.9 5.0 5.59

(8)Expletive 5.9 5.0 5.59

(9)Punctuation 5.9 5.0 5.9

20.19 (Direct Object)

5.61 Place 4.0 in TTF(III)(1); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(III)(1); connect TTF(I)(1) to that stored in 5.0 by 5.4, and go to 2.

5.62 Place 4.0 in TTF(III)(2); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(III)(2); connect TTF(III)(2) to that stored in 5.0 by 5.4 and go to 3.

5.63 Place 4.0 in TTF(III)(3); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(III)(3); connect TTF(III)(3) to that stored in 5.0 by 5.4, and go to 8.

20.20 (Subject Compliment)

5.71 Place 4.0 in TTF(III)(1); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(III)(1); connect TTF(I)(1) to that stored in 5.0 by 5.4, and go to 2.

5.72 Place 4.0 in TTF(III)(2); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(III)(2); connect TTF(III)(2) to that stored in 5.0 by 5.4, and go to 3.

5.73 Place 4.0 in TTF(III)(3); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(III)(3); connect TTF(III)(3) to that stored in 5.0 by 5.4, and go to 30.

20.21 (Indirect Object)

5.81 Place 4.0 in TTF(IV)(1); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(IV)(1); connect TTF(I)(1) to that stored in 5.0 by 5.4, and go to 2.

5.82 Place 4.0 in TTF(IV)(2); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(IV)(1); connect TTF(I)(1) to that stored in 5.0 by 5.4 and go to 3.

5.83 Place 4.0 in TTF(IV)(3); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(IV)(3); connect TTF(IV)(3) to that stored in 5.0 by 5.4, and go to 6.

20.22 (Object Compliment)

5.91 Place 4.0 in TTF(IV)(1); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(IV)(1); connect TTF(I)(1) to that stored in 5.0 by 5.4, and go to 2.

5.92 Place 4.0 in TTF(IV)(2); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(IV)(2); connect TTF(IV)(2) to that stored in 5.0 by 5.4, and go to 3.

5.93 Place 4.0 in TTF(IV)(3); place all Limiters in 4.1 thru 4.33 in respective positions under TTF(IV)(3); connect TTF(IV)(3) to that stored in 5.0 by 5.4, and go to 6.

6.0 (Direct Object) Read next word. If this word is (a.), go to (b.)(Do not count this word as having been read. It will be re-read at next location.)

6.1 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(III)(1) TTF(II) 8 6.0

(1a)(n.)(poss.) TTF(III)(1)(L1) 5.0 - 5.61

(2)(pron.)

Pronoun TTF(III)(1) TTF(II) 8 8

(2a)(pron.)

(poss.) TTF(III)(1)(L1) 5.0 - 5.61

(3)(v.)(vt.)

(vi.)Verb 30 - - 36.1

(4)(adj.)

adjective 40 - - 46.1

(5)(adv.)

adverb 50 - - 56.1

(6)(prep.)

Preposition 60 - - 66.1

(7)Con-

junction 70 - - 76.1

(8)Expletive 80 - - 86.1

(9)Punctuation Quote) 90 96.1

6.2 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(III)(2) TTF(II) 8 6.0

(1a)(n.)(poss.) TTF(III)(2)(L1) 5.9 - 5.62

(2)(pron.)Pronoun TTF(III)(2) TTF(II) 8 8

(2a)(pron.)(poss.) TTF(III)(2)(L1) 5.0 - 5.62

(3)(v.)(vt.)(vi.)Verb 30 - - 36.2

(4)(adj.)Adjective 40 - - 46.2

(5)(adv.)Adverb 50 - - 56.2

(6)(prep.)Prep. 60 - - 66.2

(7)Conjunction 70 - - 76.2

(8)Expletive 80 - - 86.2

(9)Punctuation 90 - - 96.2

Quote

6.3 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(III)(3) TTF(II) 8 6.0

(1a)(n.)(poss.) TTF(III)(3)(L1) 5.0 - 5.63

(2)(pron.)Pronoun TTF(III)(3) TTF(II) 8 8

(2a)(pron.)(poss.) TTF(III)(3)(L1) 5.0 - 5.63

(3)(v)(vt.)(vi.)Verb 30 - - 36.3

(4)(adj.)Adjective 40 - - 46.3

(5)(adv.)Adverb 50 - - 56.3

(6)(prep.)Prep. 60 - - 66.3

(7)Conjunction 70 - - 76.3

(8)Expletive 80 - - 86.3

(9)Punctuation 90 - - 96.3

Quote

20.23 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(III)(1) TTF(II) 7 6.0

(1a)(n.)(poss.) TTF(III)(1)(L1) 5.0 - 5.71

(2)(pron.)Pronoun TTF(III)(1) TTF(II) 7 6.0

(2a)(pron.)(poss.) TTF(III)(1)(L1) 5.0 - 5.71

(3)(v.)(vt.)(vi.)Verb 30 - - 37.1

(4)(adj.)Adjective 40 - - 47.1

(5)(adv.)Adverb 50 - - 57.1

(6)(prep.)Prep. 60 - - 67.1

(7)Conjunction 70 - - 77.1

(8)Expletive 80 - - 87.1

(9)Punctuation 90 - - 97.1

(Quote)

20.24 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(III)(2) TTF(II) 7 6.0

(1a)(n.)(poss.) TTF(III)(2)(L1) 5.0 - 5.62

(2)(pron.)Pronoun TTF(III)(2) TTF(II) 7 6.0

(2a)(pron.)(poss.) TTF(III)(2)(L1) 5.0 - 5.72

(3)(v.)(vt.)(vi.)Verb 30 - - 37.2

(4)(adj.)Adjective 40 - - 47.2

(5)(adv.)Adverb 50 - - 57.2

(6)(prep.)Prep. 60 - - 67.2

(7)Conjunction 70 - - 77.2

(8)Expletive 80 - - 87.2

(9)Punctuation 90 - - 97.2

(Quote)

20.25 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(III)(3) TTF(II) 7 6.0

(1a)(n.)(poss.) TTF(III)(3)(L1) 5.0 - 5.73

(2)(pron.)Pronoun TTF(III)(3) TTF(II) 7 6.0

(2a)(pron.)(poss.) TTF(III)(3)(L1) 5.0 - 5.73

(3)(v.)(vt.)(vi.)Verb 30 - 3.73

(4)(adj.)Adjective 40 - - 47.3

(5)(adv.)Adverb 50 - - 57.3

(6)(prep.)Prep. 60 - - 67.3

(7)Conjunction 70 - - 77.3

(8)Expletive 80 - - 87.3

(9)Punctuation 90 - - 97.3

(Quote)

20.26 Read next word. If this word is (a.), place in (b.), attach to (c.), by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(IV)(1) TTF(II) 9 6.0

(1a)(n.)(poss.) TTF(IV)(1)(L1) 5.0 - 5.83

(2)(pron.)Pronoun TTF(IV)(1) TTF(II) - 6.0

(2a)(pron.)(poss.) TTF(IV)(1)(L1) 5.0 - 5.81

(3)(v.)(vt.)(vi.)Verb 30 - - 38.1

(4)(adj.)Adjective 40 - - 48.1

(5)(adv.)Adverb 50 - - 58.1

(6)(prep.)Prep. 60 - - 68.1

(7)Conjunction 70 - - 78.1

(8)Expletive 80 - - 88.1

(9)Punctuation 90 - - 98.1

(Quote)

20.27 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(IV)(2) TTF(II) 9 6.0

(1a)(n.)(poss.) TTF(IV)(2)(L1) 5.0 - 5.82

(2)(pron.)Pronoun TTF(IV)(2) TTF(II) 9 8

(2a)(pron.)(poss.) TTF(IV)(2)(L1) 5.0 - 5.82

(3)(v.)(vt.)(vi.)Verb 30 - - 38.2

(4)(adj.)Adjective 40 - - 48.2

(5)(adv.)Adverb 50 - - 58.2

(6)(prep.)Prep. 60 - - 68.2

(7)Conjunction 70 - - 78.2

(8)Expletive 80 - - 88.2

(9)Punctuation 90 - - 98.2

(Quote)

8.3 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel

code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(IV)(3) TTF(II) 9 6.0

(1a)(n.)(poss.) TTF(IV)(3)(L1) 5.0 - 5.83

(2)(pron.)Pronoun TTF(IV)(3) TTF(II) - 8

(2a)(pron.)(poss.) TTF(IV)(3)(L1) 5.0 - 5.83

(3)(v.)(vt.)(vi.)Verb 30 - - 38.3

(4)(adj.)Adjective 40 - - 48.3

(5)(adv.)Adverb 50 - - 58.3

(6)(prep.)Prep. 60 - - 68.3

(7)Conjunction 70 - - 78.3

(8)Expletive 80 - - 88.3

(9)Punctuation 90 - - 98.3

(Quote)

20.28 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(IV)(1) TTF(II) 7 6.0

(1a)(n.)(poss.) TTF(IV)(1)(L1) 5.0 - 5.83

(2)(pron.)Pronoun TTF(IV)(1) TTF(II) 7 6.0

(2a)(pron.)(poss.) TTF(IV)(1)(L1) 5.0 - 5.91

(3)(v.)(vt.)(vi.)Verb 30 - - 39.1

(4)(adj.)Adjective 40 - - 49.1

(5)(adv.)Adverb 50 - - 59.1

(6)(prep.)Prep. 60 - - 69.1

(7)Conjunction 70 - - 79.1

(8)Expletive 80 - - 89.1

(9)Punctuation 90 - - 99.1

(Quote)

20.29 Read next word. If this word is (a.), place in (b.), attach to (c.) by channel code (d.), and go to (e.):

(a.) (b.) (c.) (d.) (e.)

(1)(n.)Noun TTF(IV)(2) TTF(II) 7 6.0

(1a)(n.)(poss.) TTF(IV)(2)(L1) 5.0 - 5.83

(2)(pron.)Pronoun TTF(IV)(2) TTF(II) 7 6.0

(2a)(pron.)(poss.) TTF(IV)(2)(L1) 5.0 - 5.92

(3)(v.)(vt.)(vi.)Verb 30 - - 39.2

(4)(adj.)Adjective 40 - - 49.2

(5)(adv.)Adverb 50 - - 59.2

(6)(prep.)Prep. 60 - - 69.2

(7)Conjunction 70 - - 79.2

(8)Expletive 80 - - 89.2

(9)Punctuation 90 - - 99.2

(Quote)

10.1 (First Noun) (Filing Code(s)) [Channel Code(s)]

10.11 (First Limiter of 10.1)

10.111 (First Limiter of First Limiter of 10.1)

20.30 (Second Limiter of First Limiter of 10.1)

20.31 (Third Limiter of First Limiter of 10.1)

10.12 (Second Limiter of 10.1)

10.121 (First Limiter of Second Limiter of 10.1)

10.122 (Second Limiter of Second Limiter of 10.1)

10.123 (Third Limiter of Second Limiter of 10.1)

10.13 (Third Limiter of 10.1)

10.131 (First Limiter of Third Limiter of 10.1)

10.132 (Second Limiter of Third Limiter of 10.1)

10.133 (Third Limiter of Third Limiter of 10.1)

10.2 (Second Noun)(Filing Code(s))[Channel Code(s)]

10.211 (First Limiter of First Limiter of 10.2)

10.212 (Second Limiter of First Limiter of 10.2)

10.213 (Third Limiter of First Limiter of 10.2)

10.22 (Second Limiter of 10.2)

10.221 (First Limiter of Second Limiter of 10.2)

10.222 (Second Limiter of Second Limiter of 10.2)

10.223 (Third Limiter of Second Limiter of 10.2)

10.23 (Third Limiter of 10.2)

10.231 (First Limiter of Third Limiter of 10.2)

10.232 (Second Limiter of Third Limiter of 10.2)

10.233 (Third Limiter of Third Limiter of 10.2)

10.3 (Third Noun) (Filing Code(s)) [Channel Code(s)]

10.311 (First Limiter of First Limiter of 10.3)

10.312 (Second Limiter of First Limiter of 10.3)

10.313 (Third Limiter of First Limiter of 10.3)

10.32 (Second Limiter of 10.3)

10.321 (First Limiter of Second Limiter of 10.3)

10.322 (Second Limiter of Second Limiter of 10.3)

10.323 (Third Limiter of Second Limiter of 10.3)

10.33 (Third Limiter of 10.3)

10.131 (First Limiter of Third Limiter of 10.3)

10.132 (Second Limiter of Third Limiter of 10.3)

10.333 (Third Limiter of Third Limiter of 10.3)

11. If word, or phrase in 10.1 is (a.), place symbol, word, or phrase stored in 10.1, along with all filing and cannel codes, in (b.) and go to (c.):

(a.) (b.) (c.)

(1)(n.) TTF(I)(1) 2

(1a)(n.)(poss.) 10.11 2

(2)(pron.)Pronoun TTF(I)(1) 2

(2a)(pron.)(poss.) 5.0 5.1

12. Read next symbol, word or phrase and its filing code(s) from Rote Memory(RM). If filing code(s) for symbol, word, or phrase just read is (a.), place that stored 10.1 in (b.); place symbol, word, or phrase just read in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun TTF(I)(2)(L1) 10.2 2

(1a)(n.)(poss.) TTF(I)(2)(L1) 10.2 2

(2)(pron.)Pronoun TTF(I)(2) 20 21

(2a)(pron.)(poss.) TTF(1)(2) 20 25

(3)(v.)(vt.)(vi.)Verb TTF(I)(2) TTF(II)(1) 2

(4)(adj.)Adjective TTF(I)(2) 40 41

(5)(adv.)Adverb TTF(I)(2) TTF(II)(L1) 2

(6)(prep.)Preposition TTF(I)(2) 60 61

(7)Conjunction TTF(I)(2) 70 71

(8)Expletive TTF(I)(2) 80 81

(9)Punctuation TTF(1)(2) 90 91

(Quote)

12. Read next symbol, word, or phrase and its filing code(s) from Rote Memory (RM). If filing code(s) for symbol, word, or phrase just read is (a.), place that stored in 10.1 in (b.), including all attached filing and channel codes, in (b.); place symbol, word, or phrase just read in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun TTF(I)(L1) TTF(I)(1) 3

(1a)(n.)(poss.) TTF(I)(1) 10 15

(2)(pron.)Pronoun TTF(I)(1) 20 21

(2a)(pron.)(poss.) TTF(I)(1) 20 25

(3)(v.)(vt.)(vi.)Verb TTF(I)(1) TTF(II)(1) 2

(4)(adj.)Adjective TTF(I)(1) 40 41

(5)(adv.)Adverb TTF(I)(1) TTF(II)(L1) 2

(6)(prep.)Preposition TTF(I)(1) 60 61

(7)Conjunction TTF(I)(1) 70 71

(8)Expletive TTF(I)(1) 80 81

(9)Punctuation TTF(I)(1) 90 91

(Quote)

13. Read next symbol, word, or phrase and its filing code(s) from Rote Memory (RM). If filing code(s) for symbol, word, or phrase just read is (a.), place that stored in 10.1 in (b.), including all attached filing and channel codes, in (b.); place symbol, word, or phrase just read in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun TTF(I)(1)(L1) TTF(I)(1) 3

(1a)(n.)(poss.) TTF(I)(1) 10 15

(2)(pron.)Pronoun TTF(I)(1) 20 21

(2a)(pron.)(poss.) TTF(I)(1) 20 25

(3)(v.)(vt.)(vi.)Verb TTF(I)(1) TTF(II)(1) 2

(4)(adj.)Adjective TTF(I)(1) 40 41

(5)(adv.)Adverb TTF(I)(1) TTF(II)(L1) 2

(6)(prep.)Preposition TTF(I)(1) 60 61

(7)Conjunction TTF(I)(1) 70 71

(8)Expletive TTF(I)(1) 80 81

(9)Punctuation TTF(I)(1) 90 91

13. (Pronoun) (Filing Code(s)) [Channel Code(s)]

20.32 If filing code(s) for Pronoun located in 20 indicate Pronoun to be (a.), go to (b.).

(a.) (b.)

(2)(1)(1) Personal Nom. 22.1

(2)(1)(2) Personal Pos. 23.1

(2)(1)(3) Personal Obj. 24.1

(2)(2)(1) Reflexive 25.1

(2)(3) Relative 26.1

(2)(4) Interrogative 27.1

(2)(5) Adjective 28.1

20.1 If filing code(s) for Pronoun located in 20 indicate Pronoun to be (a.), go to (b.).

(a.) (b.)

(2)(1)(1) Personal Nom 22.2

(2)(1)(2) Personal Pos. 23.2

(2)(1)(3) Personal Obj. 24.2

(2)(2)(1) Reflexive 25.2

(2)(3) Relative 26.2

(2)(4) Interrogative 27.2

(2)(5) Adjective 28.2

22.1 Place Nom. Pron. located in 20 in (a.), connect to (b.) by Channel Code in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

TTF(I)(1) TTF(II) 40 2

22.2 Place Nom. Pron. located in 20 in (a.), connect to (b.), by Channel Code in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

TTF(I)(2) TTF(II) 40 2

22.3 Place Nom. Pron. located in 20 in (a.), connect to (b.) by Channel Code in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

TTF(III)(1) TTF(II) 7 2

23.1 Place Poss. Pron. located in 20 in (a.), connect to (b.) by Channel Code in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

TTF(I)(1)(L1) TTF(I0(1) 5 2

23.2 Place Poss. Pron. located in 20 in (a.), connect to (b.) by Channel Code in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

4.1(L1) 4.1 5 2.4

24.1 Place Poss.Pron. located in 20 in (a.), connect to (b.) by Channel Code in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

TTF(I)(1)(L1) TTF(III)(I) 5 2

30.1 (First Verb or Verb Phrase) (Filing Code(s)) [Channel Code(s)]

30.2 (Second Verb or Verb Phrase) (Filing Code(s)) [Channel Code(s)]

30.3 (Third Verb or Verb Phrase) (Filing Code(s)) [Channel Code(s)]

31.1 If the filing code for the Verb in 3.1 is (a.), place Verb in (b.), and designate Channel(s) between TTF(II)(1) and TTF(I) as (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(3,2,1,1)(V.,Fin.,Trans.,Act.) TTF(II)(1) 8 3.2

(3,2,1,2)(V.,Fin.,Pass.,In.) TTF(II)(1) 9 3.2

(3,2,2,1)(V.,Fin.,Int.,Link) TTF(II)(1) 7 3.2

(3,2,2,2)(V.,Fin.,Int.,Com.) TTF(II)(1) 10 3.2

(3,3)(Verb, Infinitives) 35.1 - 36.1

31.2 If the filing code for the Verb in 31.1 is (a.), place Verb in (b.), and designate Channel(s) between TTF(II)(2) and TTF(I) as (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(3,2,1,1)(V.,Fin.,Trans.,Act.) TTF(II)(2) 8 3.3

(3,2,1,2)(V.,Fin.,Pass.,In.) TTF(II)(2) 9 3.3

(3,2,2,1)(V.,Fin.,Int.,Link.) TTF(II)(2) 7 3.3

(3,2,2,2)(V.,Fin.,Int.,Com.) TTF(II)(2) 10 3.3

(3,3)(Verb Infinitives) 35.2 - 36.2

31.3 If the filing code for the Verb in 30.3 is (a.), place Verb in (b.), and designate Channel(s) between TTF(II)(3) and TTF(I) as (c.), and go to (d.):

(a.) (b.) (c.) (d.)

(3,2,1,1)(V.,Fin.,Trans.,Act.) TTF(II)(3) 8 6.1

(3,2,1,2)(V.,Fin.,Pass.,In.) TTF(II)(3) 9 7.1

(3,2,2,1)(V.,Fin.,Int.,Link.) TTF(II)(3) 7 8.1

(3,2,2,2)(V.,Fin.,Int.,Link.) TTF(II)(3) 10 9.1

(3,3)(Verb, Infinitives) 35.3 - 36.3

35.1 (First Infinitive)(Filing Code(s)) [Channel Code(s)]

35.2 (Second Infinitive)(Filing Code(s)) [Channel Code(s)]

36.1 If that stored in 35.1 is (a.), place in (b.), and go to (c.)

(a.) (b.) (c.)

3,3,1 10.1 11.1

3,3,2 40 41

3,3,3 10.1 11.1

3,3,4 30 31

40. (Adjective)(Filing Code(s))

41. Read next symbol, word, or phrase accompanied by filing code(s) from Rote Memory (RM). If filing code(s) for symbol, word, or phrase is (a.), place symbol, word, or phrase stored in 40 in (b.) with Channel Function found in Column C for file code(s) attached to symbol, word, or phrase in 40; place symbol, word, or phrase just read in (c.), and/or go to (d.);

(a.) (b.) (c.) (d.)

(1)(n.)Noun TTF(I)(L1) 10.1 3

(2)(pron.)Pronoun TTF(I)(L1) 10.1 11.1

(3)(v.)(vt.)(vi.)Verb TTF(I)(1) 6 30 31

(4)(adj.)Adjective TTF(I)(L1) TTF(I)(L2) 41

(5)(adv.)Adverb TTF(I)(L1)(L1) 50 51

(6)(prep.)Preposition TTF(I)(L1) 60 61

(7)(Conj.)Conjunction TTF(I)(L1) 70 71

(8)Expletive TTF(I)(L1) 80 81

(9)Punctuation TTF(I) 90 91

(Quote)

50. (Adverb)(Filing Code(s))

51. Read next symbol, word, or phrase accompanied by filing code(s) from Rote Memory (RM). If filing code(s) for symbol, word, or phrase is (a.), place symbol, word, or phrase stored in 50 in (b.) with Channel Function found in Column C for file code(s) attached to symbol, word, or phrase in 50; place symbol, word, or phrase just read in (c.) and/or go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun TTF(II)(1)(L1) 10.1 11.1

(2)(pron.)Pronoun TTF(II)(1)(L1) 10.1 11.1

(3)(v.)(vt.)(vi.) TTF(II)(1)(L1) 30 31

(4)(adj.)Adjective TTF(I)(L1) TTF(I)(L1)(L1) 11.1

(5)(adv.)Adverb 30 30(L1) 31

(6)(prep.) TTF(II)(L1) 60 61

(7)(conj.)Conjunction TTF(II)(L1) 70 71

(8)(expl.)Expletive TTF(II)(L1) 80 81

(9)Punctuation TTF(II)(L1) 90 91

(Quote)

60.1 (First Preposition) (Filing Code(s)) [Channel Code(s)]

60.2 (Second Preposition) (Filing Code(s)) [Channel Code(s)]

60.3 (Third Preposition) (Filing Code(s)) [Channel Code(s)]

61.1 Read the next word. If the filing code(s) from Conversion Chart, (Appendix III) of the next word is (a.), place word just read in (b.) and to (c.):

(a.) (b.) (c.)

6,1 10,11 11.1

6,2,1 50 51

6,2,2 50 51

6,2,3 50 51

6,2,4 50 51

6,3 50 51

6,4 50 51

6,5 5.0 5.1

6,6 10.1 11.1

6,7 10.1 11.1

6,8 50 51

6,9 50 51

6,10 50 51

6,11 50 51

6,12 50 51

6,13 50 51

6,14 50 51

6,15 40 41

6,16 40 41

6,17 40 41

6,18 40 41

6,19 40 41

6,20 40 41

6,21 40 41

6,22 40 41

6,23 40 41

62. Channel Lock - Preposition

70. (Conjunction)(Filing Code(s))

71. If the conjunction listed in 70 is (a.), place in (b.) and go to (c.):

(a.) (b.) (c.)

7,1 TTF(I)(1)(L1) 2

7,2 TTF(II)(1) 2

7,3 TTF(II)(1) 2

80. (Expletive)(Filing Code(s))

81. Read next symbol, word, or phrase accompanied by filing code(s) from Rote Memory (RM). If filing code(s) for symbol, word, or phrase is (a.), place symbol, word, or phrase stored in 80 in (b.) with Channel Function found in Column C for file code(s) attached to symbol, word, or phrase in 80; place symbol, word, or phrase just read in (c.), and/or go to (d.):

(a.) (b.) (c.) (d.)

(1)(n.)Noun - - 1

(2)(pron.)Pronoun - - 1

(3)(v.)(vt.)(vi.)Verb - - 1

(4)(adj.)Adjective - - 1

(5)(adv.)Adverb - - 1

(6)(prep.)Prep, - - 1

(7)Conjunction - - 1

(8)Expletive - - 1

(9)Punctuation TTF(II)(1)(L1) 12 2

(Quote)

90. (Punctuation) (Filing Codes(s))

91. If punctuation stored in 90 is (a.), place in (b.), connected by channel code in (c.), and go to (d.):

(a.) (b.) (c.) (d.)

9,1 (Period) TTF(II)(1) 45 1

9,2(Exclamation) TTF(II)(1) 45 1

9,3 (Question) TTF(II)(1) 45 1

9,4(Comma) Last Word 46 Last Location

9,5(Colon) TTF(II)(1) 46 1

9,6(Semi-Colon) TTF(II)(1) 46 1

9,7(Hyphen) TTF(II)(1) 46 2

9,8(Underline) Word Underlined 49 2

2. Function-Grammar (FG) Conversion Program

Where the job of the Grammar-Function (GF) Conversion Kit is to convert the grammar coming into the machine into its functional terminology usable by Functional Memory (FM), the chore of the Function-Grammar (FG) Conversion Kit is to take the functional form found in the Temporary Thought Frame (TTF) and reconvert this back into logical grammar when so instructed by the Expected Value of Existence Unit, E(I).

Again, this program can be as simple or as sophisticated as the operator desires, and the ability of the machine to "speak" properly will be affected accordingly. But, also again, it is warned that the initial duty of the Brain Builder is to build a model that works - not necessarily one that is eloquent.

If the Grammar-Function (GF) Program is structured properly, the Function-Grammar (FG) Program will have no real need of that chart to make the re-conversion back to grammar from the Temporary Thought Frame (TTF). Assuming that the data in the (TTF) has been placed there in its proper location, essentially all that the Function-Grammar (FG) Conversion Program does is place the various Limiters and Functional Components activated in the Temporary Thought Frame (TTF) into a sequential grammatical format, substituting the appropriate pronoun, adjective, or adverb to indicate desired missing information. It is in this manner that the model requests such additional information from the operator.

There is no real reason to make the first model any more complicated than absolutely necessary; therefore, it is recommended that the machine be programmed to do no more than to "read" the Temporary Thought Frame (TTF) instead of attempting to restructure these questions in the manner to which we have grown accustomed to hearing and asking them (i.e. The model will print out something like, "The United States sold whom the missiles?" instead of alerting the reader that a question is coming with the customary beginning of the sentence with the interrogative pronoun, preposition, adjective, or adverb. Most likely, the machine will return to the operator the meaning of a symbol, word, or phrase in the exact same form by which it was fed into the machine, as that is the manner in which it will "remember" it. Of course, it can be programmed to recall possession, for instance, in any one of the several ways in which it can be demonstrated; however, the most simple way is to allow it to display a particular possession in the manner in which it received it (i.e. preposition "of", possessive form of noun, possessive pronoun, or verbal statement).

Basically, the Function-Grammar (FG) Conversion Program will be designed to send to the Display Unit (D) whatever symbols, words, and/or phrases are "activated" in the various locations of the Temporary Thought Frame (TTF), along with any Channelocks in activated channels and in an order similar to the following:

1. Limiters of the Limiters, ect., of the Limiters of the Subject (TTF)(I)

2. Limiters of the Subject (TTF)(I)

3. The Subject (TTF)(I)

4. Limiters of the Limiters, etc., of the Limiters of the Verb (TTF)(II)

5. Limiters of the Verb (TTF)(II)

6. The Verb (TTF)(II)

7. Limiters of the Limiters, etc., of the Limiters of the Direct Object or Subject Compliment (TTF)(III)

8. Limiters of the Direct Object of Subject Compliment (TTF)(III)

9. The Direct Object of Subject Compliment (TTF)(III)

10. Limiters of the Limiters of the Indirect Object or Objective Compliment (TTF)(IV)

11. Limiters of the Limiters of the Indirect Object or Objective Compliment (TTF)(IV)

12. Indirect Object or Objective Compliment (TTF)(IV)

APPENDIX VIII

TEMPORARY THOUGHT FRAME (TTF)

The Temporary Thought Frame (TTF) is designed to hold several "sets" of "activated" storage locations

at a time, with each set having the capacity to store any number of each of the following elements, and any number of Limiters for each of these:

a. Subject/Actor/Acted Upon, TTF(I)

b. Predicate Verb, TTF(II)

c. Direct Object or Subject Compliment, TTF(III)

d. Indirect Object or Object Compliment, TTF(IV)

It is from among the various sets of information presently in storage in the

Temporary Thought Frame (TTF) that the Expected Value (E)(I) Unit will cause other possible locations to be activated to create the Primary Set, or current thought, in the (TTF). As (E)(I) further activates specific locations and/or Channels from the sets of data in temporary storage in (TTF) new data will appear in various locations in the various sets in the (TTF) and parts of that which were in storage will lose the level activation required to hold them there and will disappear back into Functional Memory (FM)>

The "I exist" statement, along with whatever relationships exist between it and text presently activated in the Temporary Thought Frame (TTF) will always be present in the Temporary Thought Frame (TTF). The examples given in the appendix are statements that will appear in the reader's own "Temporary Thought Frame" as he reads these statements, much the same as the appear in the machine. Just as there is linkage between the "I" in the mind of the individual who reads these statement and that which is being read, there will always exist some relationship between the data in the Temporary Thought Frame and the "I exist" relationships permanently stored in the frame.

The only relationship between the data in the Temporary Thought Frame and the "I exist" statement may be the secondary relationship of the machine having been told that it will stay turned on only if it responds to the operator. This means that there may be no direct relationship between the computer's "I exist", and the information being fed into the machine; but the computer handles whatever information it receives on the basis that it was submitted by an operator who can turn it off; and thus violate its "I exist" program.

The following is a functional diagram in the Temporary Thought Frame (TTF) of the following simple sentence: "*On the third day, the hot Georgia sun and the big red fox crossed the last tall mountain together*."

Functional GF/FG

<u>Word</u> <u>Functional Location</u> <u>Channel</u> <u>Chart</u>

1. On Prep. Introd. Adverb Phrases 10 6, 10

2. the 1st Limiter of 1st Limiter of the Verb 28 4,1,1,1

3. third 2nd Limiter of 1st Limiter of Verb 28 4,1,3,2

4. day 1st Limiter of Verb 28 1,1,3,1

5. , 4th Limiter of 1st Limiter of Verb 28 9,4

6. the 2nd Limiter of 1st Subject 28 4,1,1,1

7. big 2nd Limiter of 2nd Subject 29 4,3,1,1

8. red 3rd Limiter of 1st Subject 29 4,3,1,1

9. fox First Subject 8 1,1,3,1

10. and Connector 1st and 2nd Subject 17,7 7,1

11. the 1st Limiter of 2nd Subject 28 4,1,1,1

12. hot 2nd Limiter of 2nd Subject 28 1,1,3,1

13. Georgia 3rd Limiter of 2nd Subject 28 1,1,3,1

14. sun 2nd Subject 8 1,1,3,1

15. crossed 1st Verb 40 3,2,1,1,3

16. the 1st Limiter of 1st Direct Object 28 4,1,1,1

17. last 2nd Limiter of 1st Direct Object 28 4,1,3,1

18. tall 3rd Limiter of 1st Direct Object 29 4,3,1,1

19. mountain 1st Direct Object 9 1,1,3,1

20. together 2nd Limiter of Verb 12,7 5,3,1

21. . Period 45 9,1

The following channels were used to connect the text in the above example; and the particular data in the above statement would be sent to Functional Memory (FM) in accordance with the following channel assignments:

Channel Number Description of Channel

7 Cause/Acting Agent(s)

8 Result/Effected Agent(s)

9 Time (Absolute/Relative)

12 Manner/Method/Means

17 Addition (+)

28 Definition (Dem.,Quant.,Indefinite)

29 Description (Perceptible Attributes)

40 Act/Existence/State of Being

45 Stop/Conclusion

46 Continue

Note that the major differences between the diagram shown here and the Conventional grammatical diagram is that the (TTF) is able to handle any number of connections in any direction and is able to record the functional relationship, Channel Relationship, between each. It is through these Channel Relationships that the mode brain is able to "think". It is emphasized that these frames can continue to expand in any direction in accordance with relevant information found in Functional Memory (FM) or supplied by the operator. However, any new information coming into the Temporary Thought Frame (TTF) could alter that which is brought into focus in the frame.

The text appearing in the Temporary Thought Frame (TTF) is stored automatically in Functional Memory (FM) under each of the channels to which it is attached, and along with the channel connections

between and among the various locations.

APPENDIX IX

EXPECTED VALUE E(I) UNIT

GENERAL PROGRAM AND DIAGRAM

The illustrative sets of information shown in the Temporary Thought Frame (TTF) in Appendix VI are structured on a straight linear basis, and are independent of channel linkages to other sets, either in the same Temporary Thought Frame (TTF) or in Functional Memory (FM). An expansion of those particular sets of related texts would also show the function relationships between that data and other data stored in the Temporary Thought Frame (TTF), as well as relationships between and among functional locations in Functional Memory (FM).

The examples given for possible data appearing in the Temporary Thought Frame (TTF) in Appendix VI are structured on the linear basis, and these examples represent but two of the billions of combinations possible from data stored in the human mind. As the human brain must accommodate, in addition to the abstract thought function, those dealing with physical perceptions and motor function, it may well need a storage and communications system more complicated than this simple arrangement. However, given the capability of today's computers, there appears no reason that a very efficient model of the brain could not be structured in some similar linear fashion.

The following diagram retains the linear approach to subclassifications (Albeit displayed differently) and shows how different locations in different sets of information might become functionally linked to one another. The entire operation of the human mind revolves around shared linkages between and/or among different sets of variable in the Temporary Thought Frame (TTF) and the ability of the Expected Value E(I) Unit to recognize which additional desired shared channels and/or locations have the greatest probability, if activated, of producing the greatest positive Expected Value, (E)(I)) with "I exist", or producing the lowest negative Expected Value related to that same "I" (which is also the lowest positive Expected Value for the non-existence of "I").

It will be the task of the Expected Value E(I) Unit to determine from the functional locations, channels, text, and/or commands that are activated in the (TTF) which additional channels, functional locations, and/or commands, if activated, would produce the greatest positive Expected Value for all functional locations attached to the "I exist" in the (TTF) and which channels, functional locations, text, and/or commands, if activated, have the greatest chance of reducing the most any negative Expected Values connected to the "I exist".

In the human brain, as with many lower animals, there are many decisions made automatically, and actions taken accordingly, without ever involving the conscious and deliberate abstract decision making operation of the mind. The model deals only with those decisions that would receive conscious attention that would be decided by the "I", the thinker, the conscious individual doing the thinking. Since the mechanical brain is only concerned about one function performed by the human mind, however, its approach becomes all but automatic and does closely resemble the automatic response of the lower animals.

Like humans, many animals form attachments to the "I exist" of their own conscious thought process, and, also like humans, the relationship of incoming perceptual data to both the perceived physical existence of the animal, as well as to these attachments, triggers an automatic reaction in the animal. Unlike other animals, however, the human mind is able to trigger the mind's search for stored relationships without the presence of the physical stimuli. As the model will have no physical sensations vying for its attention, that about which the model "thinks" will always be related to some traceable mental stimuli received through the keyboard. How much activity the mechanical brain engages in between transmissions will be a decision for the individual programmer, given his own constraints.

The moving force of the entire system is the machine's ability to recognize channels and/or locations in the Temporary Thought Frame (TTF) that are related to the favorable channels and/or functional locations in Functional Memory (FM), and to continually "activate" and bring into the (TTF) the text from any such

locations until the highest possible positive, and lowest possible negative, Expected Value possibly exists in the Temporary Thought Frame (TTF) for the "I exist" relationships. If the Expected Value E(I) Unit determines that there are no apparent channels and/or functional locations to be activated in the (TTF) that would further enhance the Expected Value of the "I exist" relationships within the Frame, E(I) activates the command to send that set of relationships that is activated the highest in the (TTF) to the Grammar Conversion Unit to be converted into acceptable grammatical form for display, substituting the appropriate interrogative pronoun, adjective, or adverb for any activated channel locations lacking text.

If the Expected Value E(I) Unit can find no relevant relationship between the actual text received and the "I exist" relationships themselves in the Temporary Thought Frame (TTF), then it responds to the relationship between the "I exist" stored in the (TTF) and the necessity to answer or respond to all inquiries from the operator. If the response is to a question, the programmer can either design the program to wait for an answer before continuing its regular programming, or he can design the program to return to its normal expected value operations until such time as a response is received. At that time, the response would trigger the return of the data from the Grammar Conversion Unit to the Temporary Thought Frame that was in the Frame at the time the question (the return of the question), in order that the answer "make sense".

Since the machine, like man, will be dealing with symbols that do not require the thing symbolized to be present to be manipulated, the model can be designed to operate "on its own" between direct communications to and from the operator; and this appears to be a very desirable characteristic for it to have. Otherwise, all that has been created is the thought pattern of a lower animal that utilizes abstract symbols of symbols instead of reacting directly to physically present symbols. All that would be necessary for the model to continue after it transmits is to have the transmission deactivate the particular set of variable transmitted by the fact that a transmission has been made, until such time as a return transmission was receive through the keyboard. This would allow the model to address those paths that, while less significant, might also increase the positive or decrease the negative Expected Value of "I exist" relationships in the Temporary Thought Frame.

The Expected Value E(I) Unit is not concerned with the text in each functional location in the (TTF), but only with the effect of its channel relationship with other locations in the (TTF), and in relation to the channels housing the "I exist" relationships in the (TTF). The Expected Value E(I) Unit does have the capacity to recognize the particular mathematical symbols, if any, accompanying a particular piece of text in a particular location, whether found in a functional location or in one the Channelocks; and the Expected Value E(I) Unit also has the ability to activate the calculation commands assigned to a particular piece of text in a particular functional or channel location when such calculation is necessary to more efficiently ascertain which channel relationships might result in the greatest positive value for the "I exist" and attachments.

In the human mind, the subconscious, which is Functional Memory (FM) in the machine, stores the results of the most commonly used calculations by rote; and, also by rote, it stores the formula and steps required to calculate those used less frequently. As adding, subtracting, multiplying, and dividing seem to be natural and integral functions of the human mind, it really makes no difference where these calculations are actually housed. The point to be remembered is that since these functions represent mental activity that require some physical contact with the objects of the calculations to understand, at least the basic concept involved in each of these operations must be built into the machine. Just as it is necessary to seed the "I exist" in the (TTF), so will it be necessary to give the mechanical brain the basic functions of calculation and the ability to recognize and respond to certain other commands (i.e. positive (+), negative (-), greater than (>), less than (<), equal (=), unequal (=), equal to or greater than (>), equal to or less then (<), (etc.). Those words used and/or implied in algebra to convert sentences into equations will be those assigned Command Symbols in the computer brain (i.e. times(x), or (-), percent of (X), into (-), and (+), less (-), plus (+), etc.).

Since these operations will only be commanded when a piece of text allowing such a calculation is active in the (TTF0, it would seem that the logical place to access the calculator function would be in the (TTF) program. Obviously, that model that best reflects the true nature of man's thought process will be that which only furnishes the machine with the absolute minimum "implanted calculation" necessary upon which to build a absolute minimum "implanted calculation" necessary upon which to build a

mathematical system, given further text and knowledge (especially if one is interested in building a machine that will move beyond present and set interesting in building a machine that will move beyond present and set mathematical capabilities). However, since the calculator function of most all computers far exceeds any possible capabilities of the human mind, any will be more than adequate to produce a highly sophisticated artificial brain.

Regardless of whether the calculation is built into the (TTF), the Expected Value E(I) Program, or in some other unit and placed there upon request, there will be one or more additional functional locations activated housing the result of such calculations and connected through the appropriate channels to the variable used in the calculations. For instance, if attached to the Functional Location housing the "I" of "I exist" for John, there is attached by Channel (5), Possesses/Owns/Controls, there is a functional location containing the text "house" and attached to that location are two limiters, "large" and "frame". If also attached through a (5) Channel is another location containing the text; two (2) houses, and the limiter "brick", the Expected Value E(I) Unit would cause to happen two things if, for either internal or external reasons it needs to know the number of houses owned by "John":

(1) It would determine, by activating the Similarities and Differences Channels, (15) and (16), and the two functional locations containing houses to determine if the house in the separate location was, in fact, a different house or merely one of the two stored in the other functional location. In this case, there would be insufficient similarities and sufficient differences for the program to conclude that this was a separate house. This will cause Functional Memory (FM) to attach an Addition (17) Channel between the two locations containing houses and return to the (TTF).

(2) The Expected Value E(I) Unit will then be programmed to activate the (+) accompanying the "and" Channelock that Functional Memory (FM) would have activated upon the discovery that a location had two compatible but different pieces of information stored in more that one location. This would, in turn, cause the two (2) houses to be added to the one (1) house to obtain the sum of three (3) houses. The location containing the text "three houses" would be installed between the "I" location and the two functional locations containing the two houses in one and the one house in the other. The newly created location would not have the descriptions of the houses, but rather these would remain attached to the location of the house(s) described.

The Expected Value E(I) Unit does nothing with the configurations that it activates into the (TTF) to increase the positive Expected Value or decrease the negative Expected Value of the "I exist" relationships other than use these activation's to further increase the positive Expected Value or further decrease the negative Expected Value of the entire "I exist" configuration. When the mind of the human, or some lower animals, processes information in this manner, that process triggers other mental activities, especially motor activity, and causes a great many things to happen. The artificial brain will only continue its program to reduce the negative Expected Value and increase the positive Expected Value of its "I exist" relationships, and it will be up to man to use what the machine tells him, and, just as importantly, asks him, to take care of himself and his machine. Memory (RM) and is recorded there by its sequential relationship to other symbols, words, and phrases received by the mechanical brain, there exists in the mechanical brain, as in the human brain, a linkage between each present piece of text and all past text received. As each symbol, word, and phrase is connected to all identical (or similar) symbols, words, and phrases that have passed through the Rote Memory (RM) Unit, the further activating of text, channels; and/or commands presently in the (TTF) by the Expected Value E(I) Unit, or the automatic activating of mutually shared text and/or channels by the Functional Memory (FM) program, causes all connected text to also be activated.

As Rote Memory (RM) stores each word only once in each location, anytime a word is identified in the (RM) from Functional Memory (FM), all prior functional circuits with additional shared text and/or channels, the text in the shared locations will also be sent to the Temporary Thought Frame (TTF) in accordance with its relationship to that which is presently in the Frame.

In order for the Expected Value E(I) Unit to manipulate the data stored in the Temporary Thought Frame (TTF), there is attached to certain pieces of information by the operator certain command signals, to include either a positive (+) or negative (-) storage symbol attached to some symbols, words, and phrases. These always carry the storage or command symbol assigned to them by the operator to compensate for

the machines inability to physically perceive, and thus learn and/or come to understand, certain basic concepts necessary to the thought process. The baby must hear the word "no" repeated in relationship to different situations in which something is to cease, or fail to materialize, in order to gain a "feeling" of the negative aspect of the word "no". The machine will simply be furnished a negative sign, or minus (-), along with the word "no" (See Column B, Limited, of the Grammar Conversion and Functional Relationship Chart, Appendix III, for a list of symbols, words, and phrases so designated). Functional Memory (FM) will always store information in accordance with any positive or negative notation attached. If there is no positive or negative sign assigned to a piece of information, it is automatically stored as positive(+).

The operator must determine if a symbol, word or phrase being "taught" to the machine contains a general inference associated with the existence and/or continuance of things and motion. The word "stop", for instance, definitely carries a general negative connotation that must be learned by a child through repetition in different situations to be understood by the child as to the general nature of the word "stop", the operator simply enters a negative (-) at the time the machine is given the part(s) of speech for "stop" (i.e. stop(n.)(adj.)(vt.)(stop, stopped stopped(-)).

Symbols, words, or phrases carrying such notations will retain their assigned negative or positive notation even when used in a circuit of relationships that produces an overall positive relationship to the "I exist" connections (This carries a significant lesson to mankind, as the only time it is necessary to invoke a negative symbol, word, and phrase is when it is necessary to offset some other negative symbol, word, and or phrase that has become manifest in the "I exist" relationship. Obviously, in the human mind, this negative can also appear in the natural programs of the mind to avoid pain and acquire pleasure, but the principle is the same. The only additional times that a negative must be applied to the human mind is to reduce or nullify pain or the threat of pain, or to offset a negative that reduces, nullifies, and/or threatens pleasure. When man comes to understand what this means in his own thought process, he will begin to take a closer look at ALL the things that cause him to invoke negatives.).

If a symbols, words, or phrases have a negative (-) assignment appear in the Temporary Thought Frame(TTF) in relationship to the "I exist" connections, the Expected Value E(I) Unit will be programmed to search for, find, and activate:

1. Those stored negative symbols, words or phrases that would negate or reduce the negative effect of the negative element in relationship to the "I exist" connections. If there are more than one such offsetting pieces of text to be found in storage in either Functional Memory (FM) or Rote Memory (RM), the Expected Value E(I) Unit is programmed to use that which results in the greatest positive relationship to the "I exist" group.

2. If the Expected Value E(I) Unit can locate no neutralizing text in storage, it will be programmed to instruct the Temporary Thought Frame (TTF) to send the activated data in the Temporary Thought Frame (TTF) to the Grammar Conversion Unit and to Display. The general search instructions to which the Expected Value E(I) Unit was unable to receive a satisfactory response from Functional Memory (FM) are displayed along the activated text to form a question that might satisfy the requirements of the Expected Value E(I) Unit to neutralize and negative relationships with the "I exist" complex, and , if possible, to turn such negative situations into the greatest positive gain.

2. Those whose positive symbols, words, and/or phrases in Functional Memory (FM) that would have the effect of overriding, excluding, or reducing the negative effect of the negative element on the "I exist" connections. Essentially, this would entail the finding of positive elements, which, because of other relationships, might replace the negative element in the Temporary Thought Frame (TTF) or might offer the affected "I exist" connection(s) an alternative to the negative element (The proper structuring to the Expected Value E(I) Unit and Functional Memory (FM) to perform this function will teach man much about his own behavior, as it will show him just why he reacts as he does to the situations that he is presented, and just how he goes about seeking solutions to those situations.).

If an uneven number of negatives appear in any circuit of functional Locations related to the "I exist" connections, the Expected Value E(I) Unit is programmed to recognize that particular circuit of relationships as a negative one needing the adjusting influence of additional positive or negative locations

to correct it. Based on the principles that any and all negative circuits should be eliminated (and/or turned into positive circuits if possible) and that all positives circuit relationships should be positively enhanced, the Expected Value E(I) Unit operates continually toward this end.

The Expected Value E(I) Unit does not "know" what these positives are that it seeks to increase, or the meaning of these negatives that it seeks to eliminate or reduce. It has no "conscience" or "soul" to guide it in which selections it makes to protect, and add to the positive value, of the "I exist" relationships; but rather the model selects from Functional Memory (FM) or requests from the operator any data it perceives will best do this. That which man has come to know as his conscience, is nothing more than the physical sensations Expected Value Unit of the human brain being urged by its natural programming, or by that which it has learned , to do what it was programmed or taught to do; which is at times pits the minds survival, pain avoidance, and pleasure seeking programs against one another.

Unlike the human or animal brain that "learns" to form a negative or positive association with an entire set of variables found within a particular configuration, the mechanical brain will neither form nor recognize such general associations as either positive or negative, but will treat each element separately, and in accordance with the particular locations with which it happens to be associated at a particular time. In an effort to make sure that others know and do what he considers "right", man teaches himself and others to assign by rote a general positive or negative value to a certain sets of variables which, in other relationships, may not carry such certain sets of variables which, in other relationships, may not carry such connotations. The machine will not do this, but instead will treat each situation in accordance with those variables present at the time and in accordance with those variables present at the time and in accordance with the present effect of the variable present upon the "I exist" relationships. Those who have been taught to assign a negative value to a general concept labeled "situational ethics: will automatically associate this approach as "bad", which is , itself, an example of the type of association that the mechanical brain will not automatically make.

The fact that the computerized brain will recognize only those relationships as positive or negative that truly are either positive or negative to the "I exist" relationships is not a hindrance to an efficient thought process, but rather a bonus for simplicity. It would require extra programming to enable the machine to label entire circuits as positive or negative, the way the human mind has learned to do, and to store and retrieve these entire circuits based upon these "learned" assignments. Man goes to great pain to instill such general and inefficient capabilities in his own mind, as well as the mind's of others, for an assortment of reasons, all of which are detrimental to his original, efficient programming. Not least among man's reasons for installing these arbitrary connotations in his desire to avoid having to think. While learning by rote to assign positive or negative values to entire sets of variables does help protect man against forgetting something that might be "important" to his perceived well being; but it also opens the door to errors of thought, by causing the brain to recognize as desirable or undesirable that which, at the time, may be just the opposite.

It will be the job of the Expected Value E(I) Unit to determine which channel(s), location(s), and/or command symbol(s) is(are) to be activated in search of the greatest possible positive or lowest possible negative chain of functional relationships to the "I exist" connections. By activating the calculator command symbols necessary and appropriate, the Expected Value E(I) Unit will compare the value of the elements found in the various locations for their positive and/or negative effect upon the "I exist" relationships to determine which additional channel(s), location(s), and/or command(s) need to be activated to effect the "I exist" relationships in the greatest positive way.

Again, the Expected Value E(I) Unit is not concerned with the "individual preference" of which positive and/or negative values to operate upon, but rather it will be programmed simply to produce the highest positive Expected Value for the "I exist" relationships. The machine will lack the ability to do that that is contrary to its own-programmed best interest just because it feels that it would be "fun". Man is able to do this because of his basic programs is also "pleasure", a thing unavailable to computers at the present time. And, because the machine can feel no fear, it will not be afraid to think about anything, or consider any possibility.

The attached listing of functional locations in Functional Memory (FM) have a number preceding each word listed in storage representing the circuit of relationships in which that particular symbol, word, or

phrase was received. Such a numerical system could be used to identify, store, and retrieve information in the mechanical brain; and, it may be necessary in the beginning to use a numerical storage pattern. However, this would appear far more cumbersome than having the machine simply record the particular circuits for the functional relationships between or among the various locations. And again, much will depend upon the hardware and software available, as well as abilities and judgement of the programmer. What is essential is that the program be able to recognize shared functional locations by different pieces of text, and shared pieces of text by different functional locations; and that the program of Functional Memory (FM) activate any location(s) and/or text based on such shared relationships into the Temporary Thought Frame (TTF).

Memory (RM) and is recorded there by its sequential relationship to other symbols, words, and phrases received by the mechanical brain, there exists in the mechanical brain, as in the human brain, a linkage between each present piece of text and all past text received. As each symbol, word, and phrase is connected to all identical (or similar) symbols, words, and phrases that have passed through the Rote Memory (RM) Unit, the further activating of text, channels, and/or commands presently in the (TTF) by the Expected Value E(I) Unit, or the automatic activating of mutually shared text and/or channels by the Functional Memory (FM) program, causes all connected text to also be activated.

As Rote Memory (RM) stores each word only once in each location, anytime a word is identified in the (RM) from Functional Memory (FM), all prior functional circuits are activated for that word. If these activations contain circuits with additional shared text and/or channels, the text in the shared locations will also be sent to the Temporary Thought Frame (TTF) in accordance with its relationship to that which is presently in the Frame.

In order for the Expected Value E(I) Unit to manipulate the data stored in the Temporary Thought Frame (TTF), there is attached to certain pieces of information by the operator certain command signals, to include either a positive (+) or negative (-) storage symbol attached to some symbols, words and phrases. These always carry the storage or command symbol assigned to them by the operator to compensate for the machines inability to physically perceive, and thus learn and/or come to understand, certain basic concepts necessary to the thought process. The baby must hear the word "no" repeated in relationship to different situations in which something is to ease or fail to materialize, in order to gain a "feeling" of negative aspect of the word "no". The machine will simply be furnished a negative sign, or minus (-), along with the word "no" (See Column B, Limited, of the Grammar Conversion and Functional Relationship Chart, Appendix III, for a list of symbols, words, and phrases so designated). Functional Memory (FM) will always store information in accordance with any positive or negative notation attached. If there is no positive or negative sign assigned to a piece of information, it is automatically stored as positive (+).

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Symbols, words or phrases carrying such notations will retain their assigned negative or positive notation even when used in a circuit of relationships that produces an overall positive relationship to the "I exist" connections (This carries a significant lesson to mankind, as the only time it is necessary to invoke a negative symbol, word, and phrase is when it is necessary to offset some other negative symbol, word, and phrase that has become manifest in the "I exist" relationship. Obviously, in the human mind, these negatives can also appear in the natural programs of the mind to avoid pain and acquire pleasure, but the principle is the same. The only additional times that a negative must to be applied by the human mind is to reduce or nullify pain or the threat of pain, or to offset a negative that reduces, nullifies, and/or threatens pleasure. When man comes to understand what this means in his own thought process, he will begin to take a closer look at all the things that cause him to invoke negatives.).

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relationship to the "I exist" connections. If there are more than one such offsetting pieces of text to be found in storage in either Functional Memory (FM) or Rote Memory (RM), the Expected Value E(I) Unit is programmed to use that which results in the greatest positive relationship to the "I exist" group.

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2) Those positive symbols, words, and/or phrases in Functional Memory (FM) that would have the effect of overriding, excluding, or reducing the negative effect of the negative element on the "I exist" connections. Essentially, this would entail the finding of positive elements, which, because of other relationships, might replace the negative element in the Temporary Thought Frame (TTF) or might offer the affect "I exist" connection(s) an alternative to the negative element (The proper structuring to the Expected Value E(I) Unit and Functional Memory (FM) to perform this function will teach man much about his own behavior, as it will show him just why he reacts as he does to the situations that he is presented, and just how he goes about seeking solutions to those situations.).

If an uneven number of negatives appear in any circuit of functional locations related to the "I exist" connections, the Expected Value E(I) Unit is programmed to recognize that particular circuit of relationships as a negative one needing the adjusting influence of additional positive or negative locations to correct It. Based on the principles that any and all negative circuits should be eliminated (and/or turned into positive circuits if possible) and that all positives circuit relationships should be positively enhanced, the Expected Value E(I) Unit operates continually toward this end.

The Expected Value E(I) Unit does not "know" what these positives are that it seeks to increase, or the meaning of these negatives that it seeks to eliminate or reduce. It has no conscience" or "soul" to guide it in which selections it makes to protect, and add to the positive value, of the "I exist" relationships; but rather the model selects from Memory(M) or requests from the operator any data that it perceives will best do this. That which man has come to know as his conscience, is nothing more than the physical sensations Expected Value Unit of the human brain being urged by its natural programming, or by that which it has learned, to do what it was programmed or taught to do; which, is at times pits the minds survival, pain avoidance, and pleasure seeking programs against one another.

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The fact that the computerized brain will recognize only those relationships as positive or negative that truly are either positive or negative to the "I exist" relationships is not a hindrance to an efficient thought process, but rather a bonus for simplicity. It would require extra programming to enable the machine to label entire circuits as positive or negative, the way the human mind has learned to do, and to store and retrieve these entire circuits based upon these "learned" assignments. Man goes to great pain to instill such general and inefficient capabilities in his own mind, as well as the mind's of others, for an assortment of reasons, all of which are detrimental to his original, efficient programming. Not least among man's

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It will be the job of the Expected Value E(I) Unit to determine which channel(s), location(s), and/or command symbol(s) is(are) to be activated in search of the greatest possible positive or lowest possible negative chain of functional relationships to the "I exist" connections. By activating the calculator command symbols necessary and appropriate, the Expected Value E(I) Unit will compare the value of the elements found in the various locations for their positive and/or negative effect upon the "I exist" relationships to determine which additional channel(s), location(s), and/or command(s) need to be activated to effect the "I exist" relationships in the greatest positive way.

Again, the Expected Value E(I) Unit is not concerned with the "individual preference" of which positive and/or negative values to operate upon, but rather it will be programmed simply to produce the highest positive Expected Value for the "I exist" relationships. The machine will lack the ability to do that that is contrary to its own-programmed best interest just because it feels that it would be "fun". Man is able to do this because on of his basic programs is also "pleasure", a thing unavailable to computers at the present time. And, because the machine can feel no fear, it will not be afraid to think about anything, or consider any possibility.

The attached listing of functional locations in Functional Memory (FM) have a number preceding each word listed in storage representing the circuit of relationships in which that particular symbol, word, or phrase was received. Such a numerical system could be used to identify, store, and retrieve information in the mechanical brain; and, it may be necessary in the beginning to use a numerical storage pattern. However, this would appear far more cumbersome than having the machine simply record the particular circuits for the functional relationships between or among the various locations. And again, much will depend upon the hardware and software available, as well as abilities and judgement of the programmer. What is essential is that the program be able to recognize shared functional locations by different pieces of text, and shared pieces of text by different functional locations; and that the program of Functional Memory (FM) activate any location(s) and/or text based on such shared relationships into the Temporary Thought Frame (TTF).

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As Rote Memory (RM) stores each word only once in each location, anytime a word is identified in (RM) from Functional Memory (FM), all prior functional circuits are activated for that word. If these activations contain circuits with additional shared text and/or channels, the text in the shared locations will also be sent to the Temporary Thought Frame (TTF) in accordance with its relationship to that which is presently in the Frame.

In order for the Expected Value E(I) Unit to manipulate the data stored in the Temporary Thought Frame (TTF), there is attached to certain pieces of information by the operator certain command signals, to include either a positive (+) or negative (-) storage symbol attached to some symbols, words, and phrases. These always carry the storage or command symbol assigned to them by the operator to compensate for the machines inability to physically perceive, and thus learn and/or come to understand, certain basic concepts necessary to the thought process. The baby must hear the word "no" repeated in relationship to different situations in which something is to cease, or fail to materialize, in order to gain a "feeling" of the negative aspect of the word "no". The machine will simply be furnished a negative sign, or minus(-), along with the word "non".