

Hofstra University – Fred DeMatteis School of Engineering and Applied Science

Spring Semester 2018

Graduate Project Thesis

NLP: Networks, Levels and Predictions

Using Inferential Statistics and Fuzzy Logic for Depression Prediction

Prepared for:

Computer Science Department

and

Interested Researchers

By:

Nicholas Kumia

Last Updated:

May 2018

ABSTRACT

As humans rely more and more on technology, the need for a computer to understand the ins and outs of information will grow exponentially. By combining existing statistical and engineering concepts, such as Maximum Likelihood Estimation and Fuzzy Logic Control, as well as various Semantic and Pragmatic concepts, this project works to formulate a new real-time model for learning words. In addition, there are two models proposed on how to approach and isolate the various problems when using NLP techniques. While these models are abstract, they are applied to the problem of identifying Depression within textual information. The system expresses events in terms of Energy and is able to extract meaning from text in a completely transparent and responsible manner. The resulting analysis shows that there are features that distinguish depressed from non-depressed individuals using the energy-based event model. These features, at the current system's standing, represent a way of flagging texts as problematic. They do not present definite decisions.

TABLE OF CONTENTS

Abstract.....	ii
TABLE OF CONTENTS	iii
TABLE OF FIGURES	v
Background.....	1
Historical AI Linguist Systems	3
Parry (1972)	4
Expert Systems.....	5
Frame Systems and Conceptual Dependency	6
REPETITION CREATES CONTEXT:.....	6
FINITE NUMBER OF LANGUAGE TEMPLATES:	6
CONVENTIONAL GRAMMAR IS NOT NECESSARY:	7
SEMANTIC CLOSENESS:	7
CONTEXTUAL STRETCHING OF WORD SENSES:.....	7
INFERENCES:	8
Applications of Neural Networks (NNs)	9
Today	10
THE PLAN FRAMEWORK	11
I. LAYER 1 – PROCESSING	11
II. LAYER 2 – LANGUAGE	12
III. LAYER 3 – NATURALLY	13
THE FOUR ELEMENT (FE) MODEL	13
Project Motivation	17
Layer 1 - Processing.....	17
English Ambiguity	18
Word Definitions	19
Contextual Understanding.....	21
Word Associations	21
Assigning Meaning via Traditional Control	22
Layer 3 – Assigning Meaning via Fuzzy Logic Control.....	24
Fuzzification	25
Rule Evaluation.....	28
Word Meaning	28
Maintaining Human-ability.....	30

Event Modeling.....	31
Intelligence and Decisions	32
FEATURE IDENTIFICATION	35
Word Effect.....	37
Corpus Analysis	39
CORPUS OBJECTIVE.....	40
CORPUS SPECIFICATIONS	42
REGISTER DIVERSIFICATION	42
TIME RANGE OF SAMPLES	42
ANNOTATED INFORMATION	43
SAMPLE LENGTH	44
CORPUS TOTAL SIZE	44
CORPUS DISCUSSION.....	45
Corpus Type Token Ratio	46
Corpus Top Ten Wordlist and “Aboutness”	47
Corpus Features	48
Implementation Details	50
LEVEL 0 – INPUT NORMALIZATION.....	51
LEVEL 1 – CONSCIOUSNESS	51
LEVEL 2 – EVENT MODELING	52
Results And Discussion	60
Conclusion	63
Future Work	63
REFERENCES	65
APPENDIX A	70
APPENDIX B.....	72
APPENDIX C	75
APPENDIX D	78
APPENDIX E.....	80
APPENDIX F	81
APPENDIX G	82
APPENDIX H	92
APPENDIX I.....	133

TABLE OF FIGURES

Figure 1 Public Trust in Government from Pew Research Center [3]	1
Figure 2 Turing Test: Indistinguishability	3
Figure 3 Conceptual Dependency sentence representation [51]	8
Figure 4 DeepMoji sample result (Courtesy of https://deepmoji.mit.edu/)	9
Figure 5 PLaN Model	11
Figure 6 The Four Element (FE) Model	14
Figure 7 Control System Block Diagram.....	22
Figure 8 Trapezoidal Membership Function.....	27
Figure 9 Confidence Defuzzification Function.....	27
Figure 10 Chakra Relativity Membership Function.....	37
Figure 11 Channel capacity as described in the speech	38
Figure 12 "tweet" usage between 1990 and 2017 [47]	43
Figure 16 A DRC TTR	80
Figure 16 B DRC.N TTR.....	80
Figure 16 D DRC.U TTR.....	80
Figure 16 C DRC.D TTR.....	80

BACKGROUND

Since the earliest civilizations, interaction has been a necessary and influential tool to the advancement of humanity. From solving problems to facing the consequences of those solutions, effective and meaningful interaction and communication is important. In today's age, understanding the exchange of information is more important than ever due to the wealth of data present through new mediums of communication. Miscommunication can lead to numerous outcomes varying from physical altercations, mental debilitation and most importantly societal trauma. In 2015, there were approximately three million U.S. adults who planned and/or attempted suicide [1]. There were also more than 43 million U.S. adults with Any Mental Illness (AMI) according to the National Institute of Mental Health [2]. Coupled with a 50% decline in public trust of the U.S. Government to do what is right since 1964 [3], the disconnection between large groups of people is becoming more evident with more severe consequences.

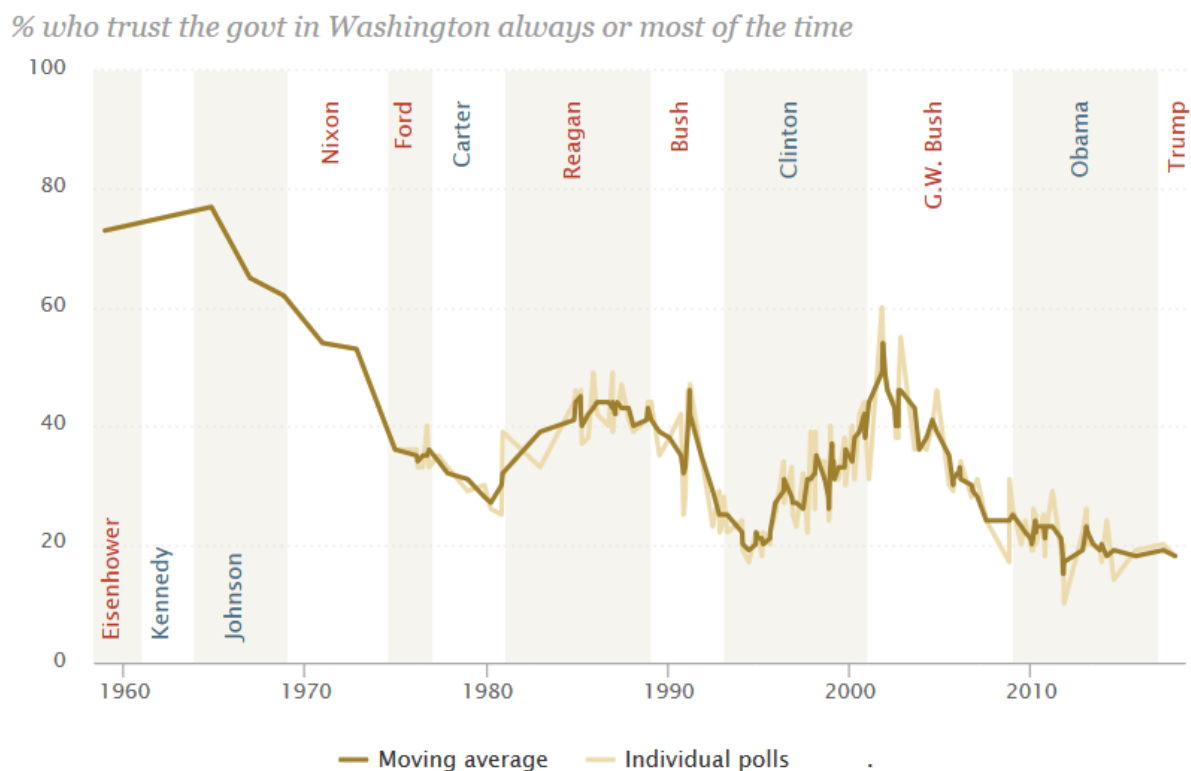


Figure 1 Public Trust in Government from Pew Research Center [3]

A large aggravator of these events can be argued as the inclusion of technology in areas where technology is not carefully understood. By addressing how computers understand and interpret information, this system draws knowledgeable conclusions from data that would otherwise be irrelevant and predict the likelihood of an outcome based on information gathered through text at the present time.

This design works in four simple steps: (1) Characterize words based on their lexical and contextual meanings, (2) Group characteristics into abstract unbiased conditions that must be met to achieve a certain outcome, (3) Run the groups of characteristics through a statistical model to determine which outcomes are most probable given the situational context and source of data, (4) Assess the trustworthiness of results and determine the necessary action to take. If the system can accurately assess whether a group of text displays a certain characteristic of an individual or a group of people, then the system will be deemed successful. How is a person diagnosed as depressed or suicidal? How is criminal intent identified? These are open-ended questions in nature and require the attention of knowledgeable people involved in the given situation, not necessarily experts in any particular field. As such, there isn't any direct metric that can assess the successfulness of this system.

A group of MIT students correlated text with emojis based on the context of the text to obtain emoji-representations of the text's mood using the Long Short-Term Memory (LSTM) Model [4]. However, their system cannot understand how the emojis are related to each other [5]. As a result, their system does not understand the meaning of the text to predict what will occur because of the text. Large groups of other work perform similar analysis using neural networks to model different theories of emotion and intelligence which is very inefficient and incomplete. Neural networks (NNs), by design, need to be retrained with the introduction of new data or new output features and work well in isolated situations where there are often closed-form solutions. With the continuous creation of text and data, models need to be abstract enough to incorporate new data into its decision model with minimum computational effort. By combining different existing theories in an innovative way, this project works to formulate a new model for words while applying similar techniques as EmoNet [6], Sentiment-Specific Word Embedding [7] and more.

Natural Language Processing (NLP) enables computers to process information that is "natural" for humans in ways that seem "unnatural" for computers. No matter the context, most sentences, like the previous one, remain ambiguous. For this reason, ambiguity is still a problem that handicaps this system. Disambiguating a sentence/idea can only be achieved reliably by the creator of the sentence/idea. Even when the source can provide an exact meaning, the trustworthiness of the source remains questionable. As a result, the effectiveness of any system (computer or human) will be limited.

This work aims to solve the problems of adaptability and overall scope of NLP. The scope of which is limited due to the lack of understanding and the lack of connections between ideas. This system connects concepts in otherwise

unassuming bodies of text to real outcomes in the physical world. Such a system does not currently exist; however, the benefits of predicting events can be life-saving on an individual level, as well as on a national level. Unlike others, this system also continuously learns in real-time, incorporating new data into its decision model without having to retrain neural networks.

HISTORICAL AI LINGUIST SYSTEMS

Despite the lack of technological resources, much of the early work with NLP started in the 1950s. Unlike many other fields of computer science, Natural Language Processing has two main components that define how successful a system can perform: (1) Language comprehension and (2) Computational design effectiveness and efficiency. Earlier systems focused more on the theoretical aspect of language comprehension which laid the groundwork for the developments that are seen in application today.

Before continuing, please note the following pieces of information as they will help simplify terminology moving forward. Computers (also “machines”) are any technological device that contains (at least) a processor, memory (volatile and non-volatile), some form of input/output (I/O) and necessary connecting circuitry. This includes, but is not limited to: laptops, desktops, smartphones, internet-enabled and/or programmable (or “smart”) home appliances or any other smart device. Computer programs (or “programs”) are any set of instructions that defines how a computer should do what it was developed to do. Because programs are written by humans, they may contain errors; nonetheless, unless otherwise specified, assume the programs perform as intended. Also note that the project that this work culminates in will be referred to as “Chandni.” This is to decrease ambiguity when discussing historical systems.

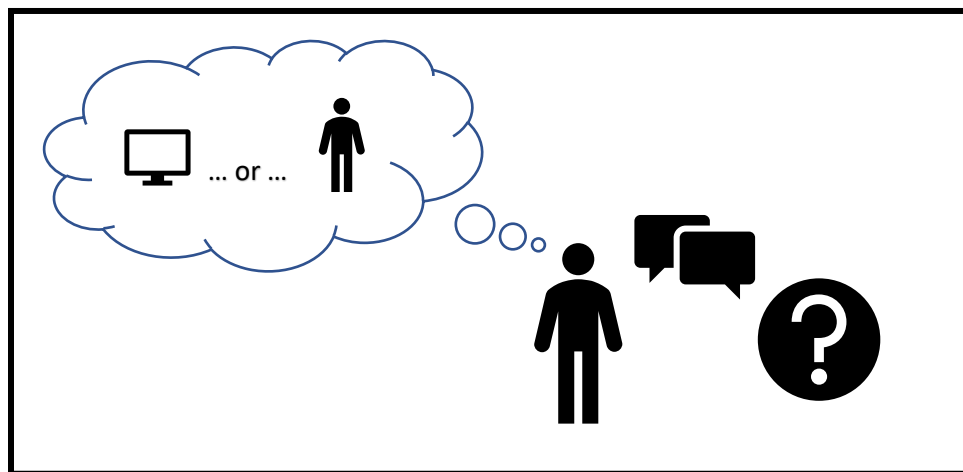


Figure 2 Turing Test: Indistinguishability

Artificial Intelligence (AI) deals with how computers can emulate high-level cognitive skills to the point where it rivals or surpasses human intelligence. NLP is the sub-branch of AI that studies how computers can understand and interact with other computers and humans to achieve the goals of AI. One of the first contributors to the field of AI was Alan Turing who devised the Turing Test which poses the question “Can machines think?” [8]. While this test has been criticized over the years, it has been improved and/or modified to hold true to the current standard of intelligence. In general, the test presupposes that if a human cannot distinguish whether he/she is communicating/interacting with a machine, then that machine can be deemed artificially intelligent.

PARRY (1972)

“Within the paradigm of computer science, distinctions are sometimes drawn between the activities of computer simulation and artificial intelligence. Yet in constructing models of psychological processes, the distinction can become blurred in places where overlaps emerge, as will be evident from our account of a model of artificial paranoia.”

Colby, Weber, Hilf (1971) [9]

Being a chatbot that emulated a human who suffered from paranoia, Parry was a niche system. However, it demonstrates the early acknowledgement that the language comprehension required for NLP transcended commonplace (or “normal”) functions and meanings. All humans know about and exhibit paranoia at some point in their lives; even if the severity and expression vary greatly. By examining and modeling the extremes in this way, all cases in between can be examined in suit. Parry was one of the first instances of a proficient artificially intelligent program. Even though the program had not been tested with the Turing Test, it did pass a modified version of it. In that version, a set of psychiatrists interviewed both parry and real patients and the interviews was recorded. Upon review of the interviews by both psychiatrists and computer scientists, neither set of experts could identify Parry from the real patients by anything greater than chance [10] [11].

Although there have been multiple iterations of it, the model has remained relatively simple. Analyze input. Modify variables (or the program’s “opinions”). Generate output. This cycle is very similar to what humans do. In Parry’s case, it’s variables are limited to: (1) anger, (2) fear and (3) mistrust. However, borrowing this methodology from humans is not a bad idea. Compared to previous systems, namely Eliza¹, Parry displayed adaptability and fluidity in

¹ Eliza was a program developed by Joseph Weizenbaum in 1966. It demonstrated a model of language using an interchangeable rule – based script. See Reference [50] for more detail.

the thoughts that it communicated. Keep in mind any system is only as successful as it satisfies its design purpose. Assessing an artificially intelligent system becomes more difficult as humans do not often share the same views on many topics. As the saying goes, there are always two sides to every story (Unknown Author). Or as Joe Wurzelbacher said, “I don't believe there's two sides to every story. It's black and white. There's right and wrong.”

EXPERT SYSTEMS

In contrast to the human-like implementation of Parry, expert systems do not try to imitate humans. They try to fill in the gaps that are impossible for humans by capitalizing on program's definitive objectivity and smaller human errors. There is no guarantee that a person will be able to retain 100% of the information that he/she reads in a textbook; whereas, a large-enough² computer would be able. There's no guarantee that a person will choose the most ethical option when asked to do so; whereas, a computer would be able (as defined by its program). Many of the problems that arise in expert systems are due to a lack of consensus between different experts. For example, what defines ethicality? Who is to say that there is not more than one possible appropriate ethical decision?

Numerous of the highly technical fields of study stand to benefit from expert systems because of their accessibility of information. A popular example of such an expert system is MYCIN, a medical system designed to diagnose patients with bacterial infections. Even though the system provided better prescriptions when compared to the average of five specialists [12], there were issues agreeing upon the exact treatment for each case. In many instances, MYCIN chose a single drug which was unacceptable by specialists who would prescribe a combination of two drugs. It is possible that drug compatibility was not programmed into the system which prohibited such outputs. For valid reasons, the effectiveness of each treatment was never tested. As a result, it can't be said for certain if the specialists' decisions were the better one. Nevertheless, this system highlights the problem of “who gets the final word?”

Another important note about expert systems is that they work better in situations where human interaction is not required as much. Within the medical field, proper patient care and treatment is necessary. Whether its providing company or describing medical issues, there's a certain attention that only humans can offer. In the case of MYCIN, if the system was supplemented by a human communicator, the applicability of the system would greatly improve. There are many interdisciplinary guidelines (across psychology, sociology, biology and much more) detailing

² “Large-enough” means that computer has enough nonvolatile storage as well as the ability to retrieve information efficiently.

methods, procedures, language and so forth on how to achieve appropriate communication. Chandni also inherits the issue of requiring a human communicator since it lacks a natural communication interface at the current stage.

FRAME SYSTEMS AND CONCEPTUAL DEPENDENCY

These two topics were early models for how to understand word senses and idea formulation with words. Yorick Wilks [13] who developed Frame Systems [14] [15] focused on the area of preference semantics which is how the semantic organization of words can be defined and understood without needing traditional classification into nouns, verbs, adjectives, et cetera... [16] Chandni was partially inspired by this work because when communicating, it's not common to think about the part of speech of words before speaking. It is not certain what happens in a person's brain when they are forming an idea to say or write. As such, it doesn't make sense to force computers to think in terms of well-defined rules that humans may not use. Part of speech helps to understand how to "format" ideas; however, they have a very limited application in understanding the meaning of an idea. Also, rules that might apply in one situation may be invalid in another situation. By thinking solely in terms of grammatical structures, normal communication is not possible. There were five main problems to which this system proposed solutions.

REPETITION CREATES CONTEXT:

There exists a repetition of ideas, a coherence, which almost certainly has to be present for language to be understood.

Table 1 Frame Systems - Example 1

<i>Sentence</i>	<i>Problem</i>	<i>Solution</i>	<i>Reason</i>
<i>Take these nails to the post.</i>	"post" is ambiguous	"post" means "a pole set upright in the ground supporting something"	"nails" are used to define that sense of "post"
<i>Take these letters to the post.</i>	"post" is ambiguous	"post" as in "post office"	"letters" are used to define that sense of "post"

FINITE NUMBER OF LANGUAGE TEMPLATES:

There exists a basic set of "gists", encoded in this system as "bare templates" where all elements start. This results in a finite set of "things which people say and write."

Table 2 Frame Systems - Example 2

Sentence	Gist
<i>The glass is full.</i>	THING + BE + KIND
<i>The bench in the park is out of place.</i>	THING + BE + KIND
<i>The water is clean and refreshing.</i>	THING + BE + KIND
<i>The chair is displeased and wants to move.</i>	THING + BE + KIND MAN + BE + <head for official position ³ >

CONVENTIONAL GRAMMAR IS NOT NECESSARY:

This model is replaced by the imposition of the “AGENT + ACTION + OBJECT” structure and the existence of preference semantics operating on different positions of the formula frame.

Table 3 Frame Systems - Example 3

Sentence	Possible Formula	Preferred
<i>John gave Mary a book.</i>	MAN + GIVE + MAN MAN + GIVE + THING	MAN + GIVE + THING (People don’t necessarily give “people” to anything.)

SEMANTIC CLOSENESS:

A speaker or writer may not be continuing a given discourse about the same exact “thing”; but may continue to speak or write about something within a similar semantic group or otherwise closely related.

Table 4 Frame Systems - Example 4

Sentence	Possible Formula	Closer
<i>The old salt⁴ is damp but the flour is dry.</i>	STUFF + BE + KIND + STUFF + BE + KIND MAN + BE + KIND + STUFF + BE + KIND	STUFF + STUFF

CONTEXTUAL STRETCHING OF WORD SENSES:

When at a breaking point, the system requests the operator⁵ to confirm that a word can indeed be used in some “expanded” or unconventional way (i.e. the second possible formula would be chosen in the above example).

³ Wilks’ official formula could be: MAN + BE + ((MUCH UP) MAN) + (WANT (CAUSE CHANGE))

⁴ Salt is ambiguous due to its dual meaning as: (1) the compound NaCl or (2) a very experienced sailor

⁵ In many situations, the only way to disambiguate a word is to have some form of widely accepted world – knowledge or a specific opinionated interpretation of the situation.

INFERENCES:

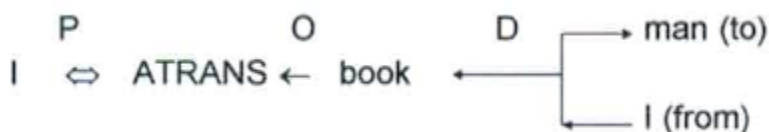
When all else fails, the system is designed to incorporate inference rules.

Table 5 Frame Systems - Example 5

Sentence	The soldiers fired at the women and I saw them fall.
Problem	“them” ambiguity (“soldiers” vs “women”)
Inference Rule	$x(\text{hurt}) \rightarrow x(\text{fall})$
Supporting Information	Formula for “fire at” states that the intention is to hurt.
Connection	Women are clearly the OBJ of the “fired at” formula.
Result	Them \rightarrow women

Frame Systems slightly crosses over into Conceptual Dependency when considering how the meaning of words can be inferred by the existence of surrounding words. There are six main categories that Roger Schank considered in this model: (1) actions (ACT), (2) objects (PP), (3) modifiers of actions (AA), (4) modifiers of objects (PA), (5) locations (LOC) and (6) times (T) [17]. Following a similar idea, ideas can be represented in non-grammatical, abstract ways. The procedure of forming and representing sentences is slightly more involved as seen in the figure below. There were a set of “primitive acts” that were defined by the theory. “ATRANS” was the primitive act of transferring some object or abstract relationship.

Sentence: I gave the book to the man.



Legend

- Arrows show the direction of dependency
(\leftrightarrow , \leftarrow , \rightarrow)
- P past tense
- O object requirement to “ATRANS”
- D recipient/donor

Figure 3 Conceptual Dependency sentence representation [51]

In either case, these models present innovative and language – independent ways of understanding language. However, it is still unclear how computers would be able to form these abstractions on their own. Would large

collections of words need to be tagged to know which operations apply to each word? Would a human need to program the word sense in terms of primitive types for all words? In other words, how would a computer determine an appropriate representation for objects/events/et cetera?

APPLICATIONS OF NEURAL NETWORKS (NNs)

NNs have a long history dating back to the 1940s [18] before their application in computer science models. The term “neural network” refers to any system that is based on scientific research studying how the human brain and nervous system operate. NNs, as it denotes the sub-discipline of Machine Learning (ML), capitalizes on certain features of the brain and nervous system, specifically neurons and its synapses (nodes and connections in NN jargon). Despite having the same foundational elements, NNs are large orders of magnitude less efficient than the human brain. Not enough is known about the brain to determine the exact cause. Moreover, the “training” idea behind neural networks is flawed theoretically because it assumes that learning is somehow stopped at some point implying that all relevant data about a particular idea is finite with a very small error rate. There’s countless variations of NNs [19] [20] and this paper only argues that NNs do not provide any insight to the solution to general NLP problems.

A recent example of system based on NNs dealing with emotion modeling and recognition is DeepMoji ^[4,5]. This application of a NN is an interesting example since it is trained on very unrestricted and mainstream (“subconscious”

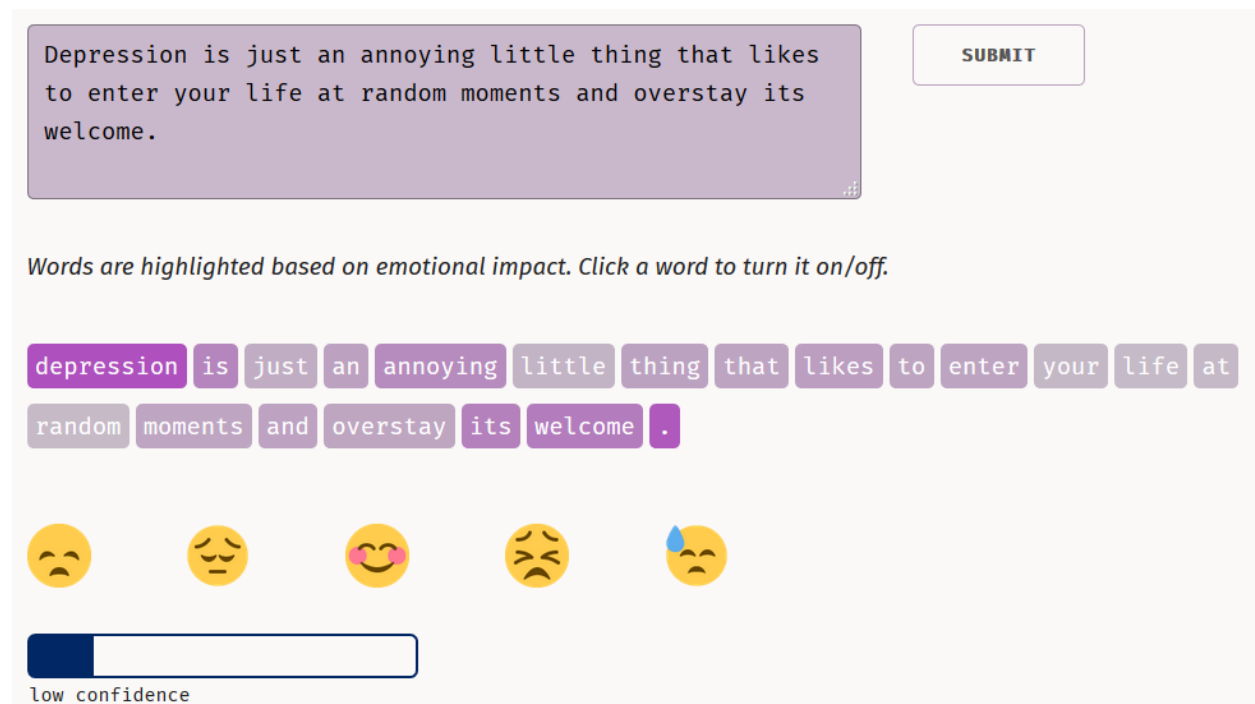


Figure 4 DeepMoji sample result (Courtesy of <https://deepmoji.mit.edu/>)

and simple?) textual data (from Twitter posts). It demonstrates the necessity to pay close attention to the type of training data that a NN uses. This system has relatively good accuracy when analyzing simple inputs and assigns appropriate confidence ratings. Its knowledge base makes it very applicable to the task it was defined for, namely sentiment analysis in social media. However, this sheds very little light on sentiment analysis in general which is vastly more important since it is scalable to a much greater audience. The statement in Figure 4 was taken from one of the video blogs (vlogs) that was gathered for this project. When the vlog was transcribed, the speaker seemed like she was expressing her annoyance at Depression and trying to communicate her understanding of the situation to help strengthen the viewer's conviction if they were in a similar situation as her. Feel free to make your own judgement of the vlogger's feelings found at the following link: <https://www.youtube.com/watch?v=eE1Wab2PrOk>.

The first thing to note about this trial is that the system's maximum input size is 140 characters and this input was 117 characters which was stressing the limits of the program. Nevertheless, the system was not able to capture any feelings with any significant confidence. The words that the system does emphasize do not appropriately capture the meaning of what was being said as well. Arguably, if the system was trained on a different set of data, it would be able to make a much more informed decision on the emotion present in this text. Even though this still fits the paradigm of social media, this system shows weakness. A system such as this would've fit nicely into Chandni (as seen later in the *Event Modeling* section); however, the problem of inaccurate sentiment in general cases can't be compromised.

TODAY

There are a myriad of applications doing a range of technical work in NLP from annotating textual data to programming highly-specific "incompetent" systems. Calling these systems "incompetent" is justified because there is not one system that understands why it does what it does. It is difficult to create true AI programs that are aware. It should be noted that many of the areas of NLP that are advancing, such a word suggestion/completion, conversational chat – bot systems (Siri, Google, Alexa, Cortana...), translation systems and more, do not require any understanding of the information it is processing. There is much to be said on these topics and developments; however, they are outside the scope of this paper.

THE PLAN FRAMEWORK

Despite all of that history, there are gaps between concepts which cause problems when merging different ideologies. One of the core computer science pillars is missing... Abstraction! Natural Language Processing is the study of how computers understand and interact with humans. But this raises the questions of: What does it mean to be human? And how do humans understand each other? The following

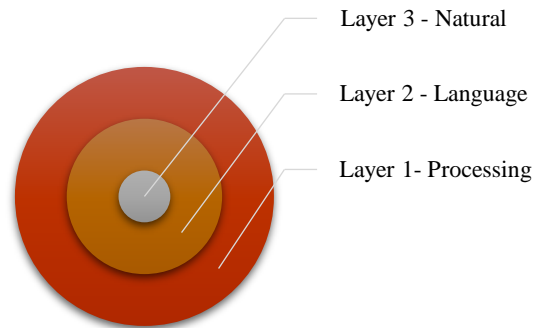


Figure 5 PLaN Model

Processing Language in a Natural way (PLaN) Framework has been devised to bring together all previous knowledge and to provide a guide for the future.

This scheme consists of layers modeled on the earth's crust. The outer most layer is the broadest and comes into contact with everything. This layer deals with how computers process input. Input can exist in a multitude of formats (visual, audial, textual...). By abstracting this layer away from the other two, input data can be properly structured into information which is the real purpose of language and, more importantly, communication. The middle layer condenses all of the information produced by the outer layer and represents the different languages and tongues in which humans speak. Different cultures have different languages that they use to communicate. Built into those languages are special characteristics that exemplify the beliefs and values inherent to those cultures. It holds the connecting fluid that binds the other two layers. The final layer, or the "core", concerns the natural part of language and the reason for language in the first place. Regardless of what language a person chooses to speak in, the core idea that he/she is trying to convey remains the same. This shows that, at the core, humans are all connected and can ultimately understand each other. This framework works on a large scale to divide the task of understanding language into more manageable pieces. However, each layer may need a few models to completely cover the scope of that particular layer as well as solve its problems.

I. LAYER 1 – PROCESSING

As mentioned previously, this layer normalizes all forms of input and captures it in a structured way. This includes, but is not limited to, determining proper data structures, filtering techniques and other algorithms to encompass every bit of data that is relevant to transmitting information. The input can be any form;

however, the output of this layer should be of a single universal type. For instance, if the input is audial, relevant analysis would be comprised of word pitch, word tone, proper tagging of phonemes, et cetera. All of those specifications contain meaning of some form and must be recognized and prepared for the next layer of analysis.

Each segment of data that a transmitting party transmits to a receiving party is defined by a Channel Capacity [21] which is the ratio of how much information was input (how much was heard) versus how much information the other person output (how much was said). As this ratio tends to 100%, the amount of understanding between the two parties tends to near perfect. With a computer and a proper processing model, the Channel Capacity can reach much better ratios than with humans who sometimes have subconsciously selective hearing or who sometimes skim documents.

For this project, the input was solely textual. As a result, this layer dealt only with word identification and the semantic recognition of various grammatical structures. Specifically, the results of this layer extracts: (1) words, (2) quotes, (3) sentences, (4) questions, (5) exclamations, (6) enclosing structures (parenthesis, curly braces and brackets), (7) numbers and (8) numbers with referring expressions. It should be noted that “words” includes normal English words (glass, wood, sky...), but also emails, abbreviations, contractions, acronyms and any other special words (m&m, st4r, ...). Concerning the sixth category (“enclosing structures”), these three structures were grouped together for simplicity of analysis since not enough was known about each structure individually to warrant special treatment. Lastly, to clarify category 8 (“numbers with referring expressions”), in the exclamation “I ate 45 apples and almost died!”, this distinction would simply show that “45” referred to “apples” and not anything else. From these eight categories, it was deemed all necessary semantic information was present.

II. LAYER 2 – LANGUAGE

Considering the breadth of languages that exist, properly analyzing each one is out of the scope of Chandni. Ideally, this layer would solve the issue of translating between languages to a very high degree of accuracy which is near impossible for even human. It would also be able to note a lot of the shared knowledge that speakers of the same language have. Intercultural and Cross-cultural Pragmatics [22] is the study of how the practical understanding of language changes between cultures and how the interpretation of each language

varies. Although this is a relatively new field of Linguistics, there is much to be acknowledged from cross-disciplinary studies in this regard. Without knowing how a language works on a subconscious level (inside the brains of humans), computers will continue to be the laughing stock of inside jokes.

This layer acts as the individual synapses that make up the brain. On their own, they do not mean much. However, collectively they form the mini concepts that support the major concepts being communicated.

Since this was not the main focus of this project and English was the only language being analyzed, this layer was omitted. This was acceptable because all of the testing data was from individuals who had very similar understandings of the English Language. Despite this fact, it would have been more accurate to account for the three sub-levels within English [23], namely the Inner Circle (native speakers), the Outer Circle (non-native speakers) and the Expanding Circle (“foreign” speakers) [See the *Corpus Analysis* section for actual statistics].

III. LAYER 3 – NATURALLY

The core is arguably the most important layer for, without it, the other two layers would not come together⁶. Once all of this information is in a comprehensible form, this layer attempts to make sense of it by connecting all of the abstractions into something tangible again. This layer is essentially where some NNs would live if the community wasn’t trying to use NNs to solve every problem. It is also where Chandni comes into play. Models similar to the one explained below are necessary for the other two layers to be complete. Also, the historical Frame System and Conceptual Dependency models fit into this layer very nicely. However, their problems prevent them from direct application.

THE FOUR ELEMENT (FE) MODEL

Every idea that is communicated through the PLaN Framework and the FE Model can be broken down into four elements: (1) Information, (2) Attributes, (3) Actions and (4) Knowledge. Each of these elements carries a special understanding of what makes up an idea as defined in Figure 6. With the same input, each element should produce the same result. Each element contains both functions and data as defined by the following representations:

⁶ Without the dense core of the Earth, the other layers would not be held together

Table 6 Relationship of Elements in FE Model

Element	Data denoted by:	Function denoted by:
<i>Information</i>	$Information_D$	$f(Knowledge_D)$
<i>Attributes</i>	$Attributes_D$	$g(Information_D)$
<i>Actions</i>	$Actions_D$	$h(Attributes_D)$
<i>Knowledge</i>	$Knowledge_D$	$k(Actions_D)$

The order of element progression is critical. Yet, this model, in its purest form, does not define how the data is represented nor how the elements transform into the next element in the sequence. The adjectives in each box of Figure 6 work as as a guideline for what that element should represent. The model is structed in such a way so that the process could be started from any of the elements⁷.

In the most common case, the first piece of the cycle that will become known is “*Information*.” The medium in which the information is organized is familiar, still there’s something unknown and seemingly unyielding about it. Based on that information (i.e. what words are used, how the words are used, what the context of the words are, ...), some meaning can be derived. The point is to determine this meaning from an objective standpoint so knowledge that the system already has should not be considered yet. The process of extracting meanings and connections from the information is entirely customizable. For instance, the meaning of a word may be a function of the surrounding words or a function of some dictionary, or a function of some

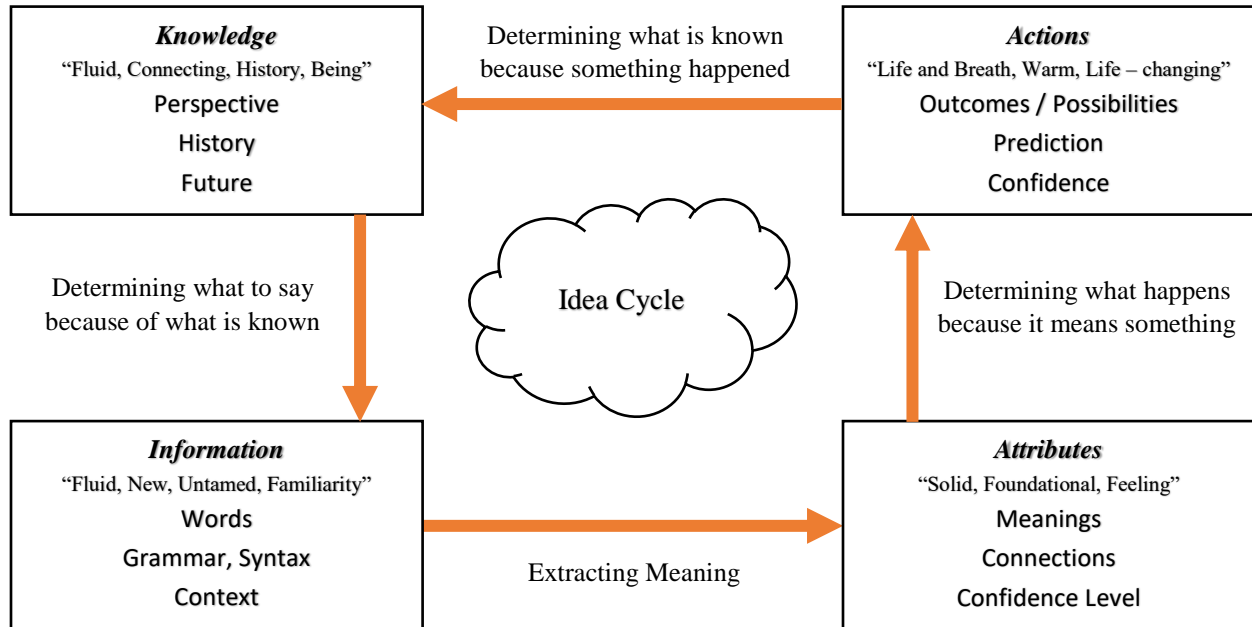


Figure 6 The Four Element (FE) Model

⁷ The elements are expanded upon in Appendix A.

other parameter, or even a measure of how much the words relate to each other. No matter how this meaning is determined, there will be some uncertainty because there will be ambiguity present. The meaning of the information with some level of confidence will be known as the “*Attributes*.” Because there is uncertainty in what was derived, there will be questions that arise; questions about the meaning of certain words or phrases or how the words connect together. These questions should be addressed by the “*Actions*” element. Depending on if the questions can be answered and if the source of the answers are reliable, there will be another confidence in this new information. This element acts as a learning layer, building upon (and possibly modifying) *Attributes_D*. Moving forward, “*Knowledge*” can be seen as the final result of this process (even if it’s not the final step). The *Knowledge_D* exhibited by analyzing *Attributes_D*, while considering the systems own previous knowledge, would represent what the idea is in its purest sense of the word. At this point, the computer would know exactly what defines this idea, what causes it and what happens as a result of it (at least in the context that was presented). The final step before the process repeats lies in representing this idea in a human – readable form (“*Information*”) or making a decision based on the idea and representing the result as “*Information*.”

Deliberate the following exchange:

A: *Say the first thing that pops into your head when you hear “XYZ.”*

B: *ABC.*

To understand why person B answered person A in this manner, an understanding of the intangible relationships, experiences and ‘knowledge’ of person B is necessary. There’s no right or wrong response to the prompt. Yet, each response has a reasoning behind it. The FE Model was developed to understand this reasoning. When presented with the statement,

You are smart!

The natural question that arises is, “what does smart mean?” Is it a good thing? Or a bad thing? There are many interpretations; however, the words in the sentence (exclamation) do not make any indication of what it means to be smart. The only piece of information present is that “smart” relates to “you”. Who is you? This depends on the context and will vary. This correlation of words and meanings is handled by the *Attributes* element of the FE Model. The meaning of “smart” is irrelevant because the only meaning that is evident is the correlation between “you” and

“smart.” The fact that “smart” is a quality is dependent on an understanding of the English language which should be handled by Layer 2 of the PLaN Framework.

The WordNet project developed at Princeton University [24] supports this mentality of word connectivity and word association. Whereas Chandni associates words on a smaller level, WordNet seeks to associate words based on three qualities, namely hypernymy, hyponymy and “ISA” relation. These relations are more all-purpose and applicable on a larger scale because they directly name the relations of words as “normally intended” by the language. On their website, WordNet provides the example of an “armchair” being a type of “furniture” so armchair would be a hyponym of furniture [24]. Of course, this idea can be broken down into many more layers of abstraction; however, relying solely on these relationships cannot reveal the true meaning of words when unrestricted language is used. This example will be revisited later in the *Results and Discussion* section. Looking at another example,

You learn about a person through your experience with that person.

A valid question would be, “what is experience and how do you get it?” These questions that arise after hearing a piece of information and understanding how the words are related requires information that was not originally divulged. In this case, the system would first consult information extracted from Layers 1 and 2 from the PLaN Framework. If these two additions are broken or do not help to answer the questions, then these questions must be posed outward. In this situation, the system would work recursively restarting at the *Information* element until all elements can be successfully completed. After the information’s internal relations are solidified and the meaning of everything is known with some confidence, the system is able to move onto the defining element, *Knowledge*,

Love is eternal.

What would make a person believe statements like this? There is obviously something else known about “love” and “eternity” that makes a person make statements like these. This “something else” can be seen as an individual’s personal collection of connections that result from his/her life experiences. Compare “The sky is so blue!” to “The sky is pretty dark” to “The sky looks so beautiful”. Each of these statements have certain ‘attitude’ about them that will lead to various interpretations of the state of the world (irrespective of the status of the sky). Enabling a machine to able to identify these interpretations is the goal of the *Knowledge* element.

PROJECT MOTIVATION

The focus of Chandni is in the “*Information*” and “*Attributes*” elements (with partial attention in the “*Actions*” element) of the FE Model in Layer 3 of the PLaN Framework. The goal is to predict how possible a certain outcome is based on reference texts. An outcome (or “event”) is defined as any set of tangible results such that each result can occur with some probability and has some definable consequence or effect. This definition is vague to demonstrate that many outcomes can be included in a single model. Ideally, the reference texts would be connected to the outcomes in some way, so that the system would see the direct impact of the text in the outcome. The specific research question that is posed is as follows: What is the probability that a person experiences depression based on an understanding of their writing sample? The exact model specifications are detailed in Table 7.

Table 7 Project Application of FE Model

<i>Element</i>	<i>Data</i>	<i>Function</i>
Information	Structured reference text	-
Attributes	Network of word connectivity and word meanings	Mathematical Model of words combined with Fuzzy Logic Control to determine <i>Attributes_D</i>
Actions	Prediction of how much the text represents that of a depressed individual	Event Modeling of <i>Attributes_D</i> combined with Maximum Likelihood Estimation

LAYER 1 - PROCESSING

The first form of analysis that the system performs is determining the units of language as described earlier (namely (1) words, (2) quotes, (3) sentences, (4) questions, (5) exclamations, (6) enclosing structures (parenthesis, curly braces and brackets), (7) numbers and (8) numbers with referring expressions). Each of these categories is discovered through the use of the regular expressions shown in Table 8. The categories of “quotes”, “sentences”, “questions”, “exclamations” and “enclosing structures” were used as the context for each word. If a target word appeared in any one of those categories, that category (or those categories) would be considered the context for that target word. By separating sentences from questions, the system will understand the information presented might not be fact. Similarly, with exclamations, it may be expressed with extreme feeling which effects the impact of the words.

Table 8 Regular Expressions

Category	Regular Expression
Words	<code>r'(\b([a-z]+_\?&\?@?\.\?%?\^?*?\-?\+?\'?[0-9]?)?)+([a-z]{1,})?\b)'</code>
Quotes	<code>r'\"(.*)\"'</code>
Sentences	<code>r'(\b((?!= \. \! \?)([a-z]\.[a-z]\.?)?([a-z]{2,%d}\.)?(\\"(.*)\")?\?)+((\.){1,} (\n) \$)(?=[^\"]))'% ABBREVIATION_LENGTH⁸</code>
Questions	<code>r'(\b(((?!= \? \. \! \?)(\".*\")?)?)+(\?)+)'</code>
Exclamations	<code>r'(\b(((?!= \? \. \! \?)(\".*\")?)?)+(\!)+)'</code>
Enclosing Structures	<code>r'((\(((?!= \))\.)*)\)) ((\{((?!= \})\.)*)\}) ((\[((?!= \])\.)*)\]))'</code>
Numbers	<code>r'\b[0-9]{1,}'</code>
Numbers with referring expressions	<code>r'(\b[0-9]{1,}((?[a-z]{1,}(\'?_\?&\?@?\.\?%?\^?*?\-?\+?\?\\?)?))+ ((\(:?[0-9]{1,})?(\'?_\?&\?@?\.\?%?\^?*?\-?\+?\?\\?)?))+?)'</code>

ENGLISH AMBIGUITY

One of the motivators for this project was to tackle the problem of ambiguity. Rarely do humans ever speak or write language that is not ambiguous. The reason the ambiguity is not considered in normal settings is because, as humans, the interpreter of a piece of language has enough knowledge about how the world operates and can clearly separate what is possible from what is highly unlikely. Many times, there are multiple possibilities and humans either need to ask questions to solidify their understanding or make an inference based on what he/she knows (or believes) to be true. Much of the theory behind determining the true meaning of language lies within the land of semantics and pragmatics. An important distinction to make when discussing these two terms is what separates them. Semantics can be defined as the study of sentence meaning⁹; whereas pragmatics refers to the study of speaker meaning¹⁰. For example, consider the sentence, “The grass is green.” A semanticist would understand that there is this object (grass) that is of the color green. On the contrary, given a bright, sunny day and the knowledge that that was a statement expressed between two friends, a pragmatist might declare that this sentence is expressing the happiness of the speaker. In other words, pragmatics always considers some form of extra – information that is not directly present in the

⁸ there was no way to definitely know if a period was referring to the end of a sentence or an abbreviation. To resolve this issue, possible sentences were tested for ending in abbreviations via user input. Abbreviations were varied between two and three characters long.

⁹ Given knowledge of the language, what do the words mean as they compare to other words available in a language?

¹⁰ Given knowledge of the world, what does the author of the sentence intend to convey?

information presented. There are two main forms of ambiguity that are considered in this system: (1) the number of meanings of a word and (2) the contextual understanding of each sense¹¹.

WORD DEFINITIONS

The definition of a word outlines the ways in which a word can be used. Many words have an enormous amount of definitions, such as the word “green.” It can be argued that many of the meanings express a similar idea; however, the fact that each expression refers to a different context cannot be disregarded. A point to consider is that there’s no standard to determine the exact number of meanings for each word. Any word can be used to mean anything that the speaker wants it to mean. Determining whether the appropriate meaning is conveyed is difficult (and not even possible in some cases). If one child says to another child, “He’s so green!”, there’s no way to know exactly what he means unless there is some other knowledge suggesting a particular meaning. Consider the definitions presented in Table 9 and look at all of the possibilities that an adult might deliberate after hearing this statement. Even though it may be clear to a human which definition might work, a computer cannot make the same judgement. There have been countless studies analyzing the influence of early language understanding on decisions or preferences [25]. Similarly, the preferred definition that a human may choose will be based on their understanding of how the world operates and the beliefs they chose to gravitate towards.

Table 9 Definitions of the word "green" [26]

Number	Definition
1	of the color of growing foliage, between yellow and blue in the spectrum
2	covered with herbage or foliage; verdant
3	characterized by the presence of verdure
4	made of green vegetables, as lettuce, spinach, endive, or chicory
5	not fully developed or perfected in growth or condition; unripe; not properly aged
6	unseasoned; not dried or cured
7	immature in age or judgment; untrained; inexperienced
8	simple; unsophisticated; gullible; easily fooled

¹¹ An individual meaning of a word may have multiple senses. (“The air is hot” and “The food is hot” may carry different senses despite the same meaning of “high in temperature”)

9	fresh, recent, or new
10	having a sickly appearance; pale; wan
11	full of life and vigor; young ¹²
12	environmentally sound or beneficial
13	(of wine) having a flavor that is raw, harsh, and acid, due especially to a lack of maturity
14	freshly slaughtered or still raw
15	not fired, as bricks or pottery
16	(of cement or mortar) freshly set and not completely hardene
17	Foundry. (of sand) sufficiently moist to form a compact lining for a mold without further treatment; (of a casting) as it comes from the mold; (of a powder, in powder metallurgy) unsintered
18	a color intermediate in the spectrum between yellow and blue, an effect of light with a wavelength between 500 and 570 nm; found in nature as the color of most grasses and leaves while growing, of some fruits while ripening, and of the sea
19	Art. a secondary color that has been formed by the mixture of blue and yellow pigments
20	green coloring matter, as paint or dye
21	green material or clothing
22	greens. fresh leaves or branches of trees, shrubs, etc., used for decoration; wreaths; the leaves and stems of plants, as spinach, lettuce, or cabbage, used for food; a blue-green uniform of the U.S. Army
23	grassy land; a plot of grassy ground
24	a piece of grassy ground constituting a town or village common
25	Also called putting green. Golf. the area of closely cropped grass surrounding each hole
26	bowling green
27	a shooting range for archery
28	Slang. money; greenbacks (usually preceded by ‘the’)
29	(initial capital letter) a member of the Green party (in Germany)
30	to become or make green
31	Informal. to restore the vitality of
32	read the green, to inspect a golf green, analyzing its slope and surface, so as to determine the difficulties to be encountered when putting

¹² Notice how definitions 10 and 11 are in direct conflict with each other. This illustrates how definitions can be paradoxical.

In this particular situation, the prosody¹³ of the child might help to disambiguate the meaning of the phrase. Using the PLaN model, that information would be encoded during the analysis of Layer 1. Nevertheless, if that information is not present, for example, if someone is retelling a story and does not keep the prosody true to the original event, the correct approach would be to first assume no particular prosody. If no meaning becomes clear, the second step would be to ask the witness of the event if they remember the specific way in which the statement was spoken. If the speaker can accurately communicate that to you, then the meaning might be disambiguated. If not, then there may be no other methods to determine the true meaning except guessing until the meaning can be communicated in some way.

CONTEXTUAL UNDERSTANDING

Context is defined as any extraneous information that is indirectly tied to the meaning of a target word or phrase. Semantically, this means the words surrounding the target word. Pragmatically, this can be resolved to the real – world knowledge relevant in understanding the function of the target word. In most cases, the two are used in combination. For instance, “green” is disambiguated by “grass” in the phrase “the grass is green” because “green” refers to the “grass” which humans know is the color green. The contextual understanding can go one step further if one knows that green grass is healthy grass.

WORD ASSOCIATIONS

There are six main groups of words: (a) synonyms, (b), antonyms, (c) complementary pairs (binary), (d) gradable pairs (fuzzy), (e) relational opposites, and (f) homonyms. Each group can both help (to disambiguate meanings) and hurt (by adding extra possible meanings based on the context). Synonyms are words that are similar in meaning. Knowing that two words are similar can aid in creating associating word vectors; however, “process” is a prime example where synonyms hurt meaning. Process, action, development, growth (provided by [27])... the list can go on. Each of these words should not necessarily be treated the same and can lead to greatly varied interpretations based on a given context. Antonyms define opposite or inverse relations and are less prone to this problem. Usually, it easier to determine when two things are in conflict than when they are in harmony.

Complementary and gradable pairs are used to describe instances of words that are known to be a certain, purely because it is not another word. “Yes” and “No” is the most obvious complementary pair. A few more examples

¹³ Prosody can be defined as the tone, stress, quantity, intonation proper of a particular utterance. [52]

include “high” and “low”, “big” and “small”, “light” and “dark” ... “yin” and “yang”. Gradable pairs take complementary pairs one step further in the type of relationship the words can share. What defines an “ocean” from a “sea” from a “lake” from a “pond”? They represent different sized bodies of water. What’s the boundary between each one? It’s fuzzy; not a definite measurement and highly dependent on the human interpreting the words or bodies of water. The concept of relational opposites expands upon the concepts of synonyms and antonyms in determining the “relatedness” of words. An example is “more” and “less”. Two opposite operations are grouped together to mean nothing more than the opposite of its opposite. Is this more or less correct?

The last group of associations common in language are homonyms which can be broken down into: homophones and homographs. Homophones sound the same; but differ in writing (i.e. “would” and “wood”). Homographs aren’t dependent on sound; but are spelt the same (i.e. “bow” as in “bow tie” and “bow” as in “he bowed for the audience”). This last group of associations is the most troubling for textual information and would wreak havoc on a system that does not understand the context in which a word is used. When utilized properly, these word associations can help to understand the true meaning of words.

ASSIGNING MEANING VIA TRADITIONAL CONTROL

The purpose of control systems is to design a set of subsystems and processes (or plants) assembled for the purpose of obtaining a desired output with desired performance, given a specified input [28]. In this form, a control system can be used for an innumerable amount of applications. In general, there are three main criteria to examine during the design phase: (1) stability¹⁴, (2) transient response¹⁵ and (3) steady state error¹⁶. To visualize these concepts, take missile guiding as an example, missiles need to be accurate (which requires very little steady state error) and fast

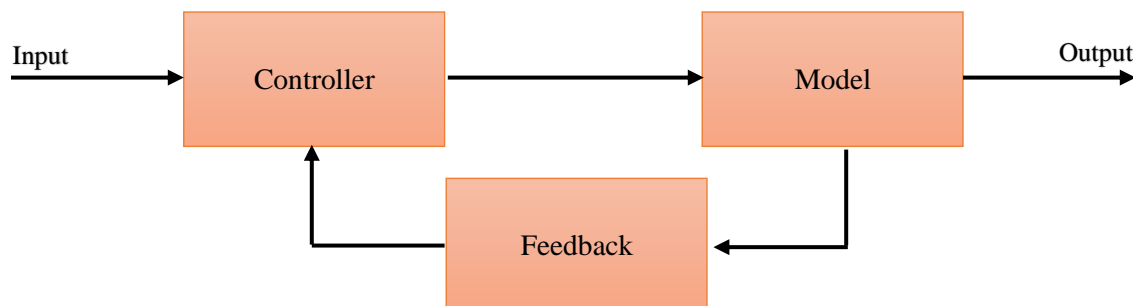


Figure 7 Control System Block Diagram

¹⁴ If the output of the system diverges to an undesired value, it is considered unstable.

¹⁵ The time it takes for the system to reach a stable value

¹⁶ The difference between the final value and the desired value.

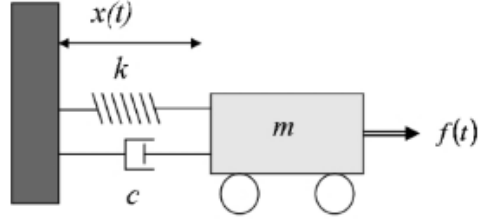
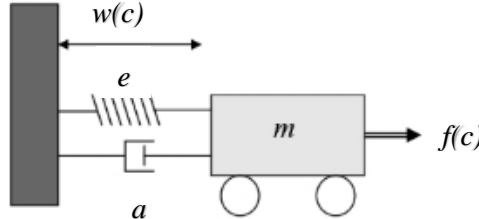
(which requires a short transient response). Figure 7 shows the framework for a traditional control system where all five items represent a different design specification: the model represents the operation of the actual system without any influence; the controller adds bias to the system to achieve the desired output; the feedback measures the output (typically using a sensor) to adjust the parameters of the controller and achieve the desired output. The feedback device is not required; however, without it, the control system would be “open-loop” which simplifies the system but can’t account for disturbances in the output. By utilizing feedback, the system is called “closed-loop” which means that every component of the system is accounted for in the control algorithm.

Chandni initially sought to model the meaning of a word in terms of a second – order differential equation (2DE) similar to a mass – spring – damper system [29] or a resistor – inductor – capacitor (RLC) system and apply a proportional–integral–derivative (PID) controller. Although this application stretches the boundaries of the mathematical motivation for a 2DE, the function of each component in the abstract system remains true to that of the physical system as illustrated in Table 10. Despite the many parallels that can be drawn, there are still gaps in determining the governing equations and exact units of measure. With the most general mass – spring – damper system, there are three fundamental terms that form the left – hand side of the governing equation: (1) force due to displacement, (2) force due to velocity and (3) force due to acceleration.

$$m \frac{d^2x}{dt^2} + c \frac{dx}{dt} + kx = F(t)$$

The resulting output from this equation is a function that represents the position of the mass, x , at various times, t . Similarly, the output from the abstract equation would be a function that represents the meaning of a word, w , given various contexts, c . One glaring problem with this approach is the fact that the physical system is linear and continuous; whereas, the abstract system cannot make these assumptions. Another issue is that a physical system at rest will stay at rest; however, the same cannot be deduced for the abstract system which may change the meaning of a word due to some internal influence (or self – reflection).

Table 10 Comparison of Physical System DE to Abstract System DE

	Physical System	Abstract “Word” System
Diagram		
“Amplifier”	K: Spring Constant Enables the system to move more freely – amplifies the motion of the system, $x(t)$	E: Effective meaning of context Enables words to operate in a range of meanings – amplifies the “power” of a word
“Damper”	C: Damping Constant Inhibits the motion of the system – slows the system down	A: Ambiguity of word due to context Inhibits the development of an idea – slows the rate at which information is communicated
“Base”	M: Mass A measure of the base potential of a system	M: “Successfulness” of word A measure of the weight (or “appropriateness”) of a word
“External Force”	$f(t)$ External force that disrupts equilibrium and causes a reaction	$f(c)$ External force that causes the need to convey an idea and influences the idea
Variables	Distance, x Time, t	Word, w Context, c
Inputs	Initial displacement, x_0 Initial velocity, $\frac{dx}{dt}_0$ External force, $f(t)$	Initial “meaning” or idea, w_0 Initial bias, $\frac{dw}{dc}_0$ External influence, $f(c)$
Output	The position of the mass	The “position” or understanding of a word

LAYER 3 – ASSIGNING MEANING VIA FUZZY LOGIC CONTROL

Even though the traditional control design was not implemented, the similarities that are raised through the analysis of traditional control were borrowed. Fuzzy logic control, as its name suggests, is a method that works to make decisions and control parameters when the logic behind each parameter is not definite and discrete. The theory was first developed by Lotfi Asker Zadeh in 1965 to handle the concept of fuzzy sets [30]. It was later expanded upon to model “linguistic values” or variables whose values are words or sentences in a natural or artificial language [31]. Humans rely on some form of fuzzy logic very often when adverbs are used. How hot is “very hot”? What about “slightly warm”? There’s no right or wrong answer and, similarly with fuzzy logic, there does not need to be one.

“You can build a computer [like an adding machine, filing cabinet or voltmeter] because, since we invented them, we can understand them. The situation is quite difference when we talk about building a computer modeled on the living brain. A brain is not some simple gadget that we conceived and built, it operates in ways still unknown to science or technology.”

The Guildhall Lectures (1964) [32]

Although the brain cannot be understood as yet, the ways in which information is processed and incorporated into decisions can be built into a computer. Fuzzy logic control (FLC) works in three main steps: (1) fuzzification, (2) rule evaluation and (3) defuzzification. Fuzzification deals with transforming a set of uncertain inputs into “fuzzy” truth values. Once these truth values are acquired, there are rules that define what truth values lead to what outcomes. If necessary, the outcome is defuzzified to represent a definite output.

FUZZIFICATION

There are three inputs that constitute the “base power” (POWER) of a word, namely the part of speech (POS), the frequency of use (FREQ) and the number of possible senses (NPM). The POS defines how a word can be used. This is important because some words are more descriptive than others (e.g. function words hold less meaning than content words). Words are POS-tagged using the NLTK Toolkit [33] and the Penn Treebank Project tags [34]. The frequency of a word shows the importance of a word; however, whether the correlation is direct related or inversely related is not always certain. Lastly, the number of possible senses is a measure of the versatility of a word; more versatile words are more “powerful”. The definitions of each word are retrieved from Dictionary.com; however, the source of the definitions can easily be changed. While the frequency of a word and the number of possible senses of a word are numerical in nature, POS is not. To quantify the POS, the categories in Table 11 were formed. From left to right, these categories define the least – important to most – important types of words. Most of the words are “content” – related; however, this only accounts for the first level of fuzzification. Each of these categories are assigned a value of 1.0, 2.5, 3.0, 3.5 and 5.0 respectively. These values are arbitrary and changing them will impact how the system assigns meaning to words. In general, the most used category of words (function words) holds the lowest value because they are used more often (and vice versa for the least used category (unique words)).

Table 11 POS Tag Categories

Function Words	Filler 1	Content Words	Filler 2	Unique Words
Determiners (DET)	Possessiveness (POS)	Cardinal numeral (CD)	Coordinating conjunction (CC)	Foreign word (FW)
Existential (EX)	Personal pronoun (PRP)	Ordinal adjective or numeral (JJ)	Comparative adjective (JJR)	Proper noun (NNP)
Subordinating preposition or conjunction (IN)	Possessive pronoun (PRP\$)	Common noun (NN)	Superlative adjective (JJS)	Plural proper noun (NNPS)
List item marker (LS)		Plural common noun (NNS)	Modal auxiliary (MD)	Interjection (UH)
Particle (RP)		Adverb (RB)	Pre – determiner (PDT)	WH – determiner (WDT)
To (TO)		Base verb (VB)	Comparative adverb (RBR)	WH – pronoun (WP)
		Past tense verb (VBD)	Superlative adverb (RBS)	possessive WH – pronoun (WPS)
		Gerund verb (VBG)		WH – adverb (WRB)
		Past participle verb (VBN)		
		Present tense verb (VBP)		
		Third person verb (VBZ)		

These metrics are combined using the following formula,

$$POWER = \frac{m(a + d)}{n}$$

where ***m*** represents the word category (POS), ***a*** represents the word frequency (FREQ), ***d*** represents the total number of possible senses (NPM) and ***n*** is the total number of words in a given sample. This formula was derived considering that words with a lot of senses can be used in many more situations. If a word is used more often, it also means that that word is important. It is easy to see how ***a*** and ***n*** change since the number of times a word appears in a sample changes quite largely between samples. Nevertheless, ***m*** can also change as seen by “time” in the following example. “Time” exists as both a “content word” and a “unique word”.

[('This', 'DT'), ('is', 'VBZ'), ('a', 'DT'), ('very', 'RB'), ('sad', 'JJ'), ('sentence', 'NN'), (';', ':'), ('Time', 'NNP'), ('does', 'VBZ'), ('not', 'RB'), ('even', 'RB'), ('know', 'VBP'), ('what', 'WP'), ('it', 'PRP'), ('means', 'VBZ'), (';', ':'), ('but', 'CC'), ('time', 'NN'), ('may', 'MD'), ('tell', 'VB'), ('if', 'IN'), ('others', 'NNS'), ('will', 'MD'), ('know', 'VB'), ('it', 'PRP'), ('s', 'VBZ'), ('meaning', 'VBG'), ('in', 'IN'), ('the', 'DT'), ('future', 'NN'), ('.', '.')]]

Also, a new definition of a word can easily be added, or an existing definition subtracted, resulting in a change in d . Since the POWER is used in further analysis, it is not defuzzified. Yet, the most important fuzzification that this system makes is when it assigns confidence levels to each of the word powers. For this operation, each parameter (m, a, d) is fuzzified to a scale of low, medium and high as defined by the membership function in Figure 8. Table 12 defines

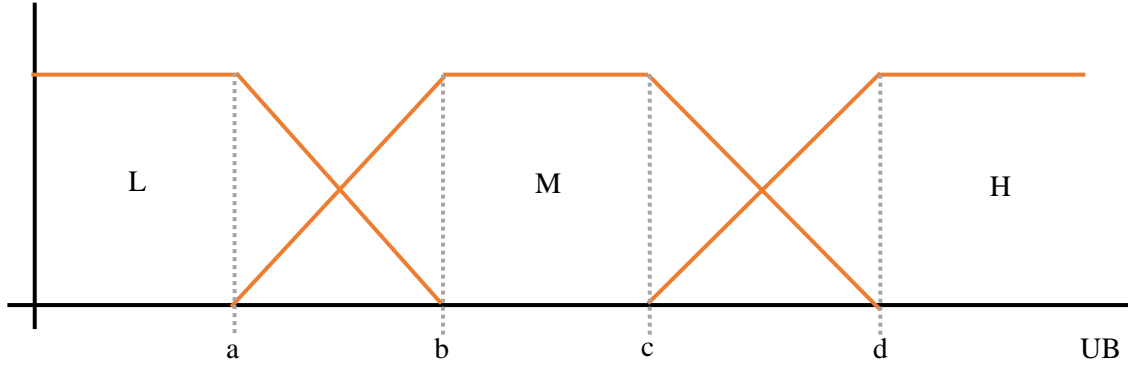


Figure 8 Trapezoidal Membership Function

the boundary values of each function. Again, these values may be changed to express a different understanding of the world. This model made as few assumptions as possible to ensure maximum objectivity in the output of the system. The system stores a copy of each word that it looks up to prevent multiple lookups of the same word. The word with the most definitions (HW) in its local dictionary defines the “high”-est number of possible senses and is used as the upper – bound (UB).

Table 12 Membership Function Boundary Definitions

	a	b	c	d	UB
<i>FREQ</i>	$\frac{n}{5}$	$\frac{3n}{10}$	$\frac{2n}{5}$	$\frac{3n}{5}$	n
<i>POS</i>	1	2	3	4	5
<i>NPM</i>	$\frac{num(HW)}{5}$	$\frac{2 * num(HW)}{5}$	$\frac{3 * num(HW)}{5}$	$\frac{4 * num(HW)}{5}$	$num(HW)$

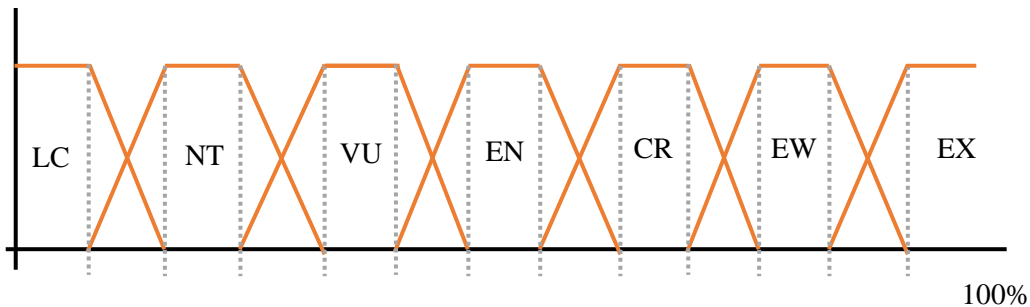


Figure 9 Confidence Defuzzification Function

Confidence is expressed in terms of seven uniformly – distributed ranges (“least confidence”, “not timely confidence”, “vulnerable confidence”, “enduring confidence”, “critical confidence”, “extra confidence” and “extreme confidence”) from lowest confidence to highest confidence respectively and is demonstrated in Figure 9. A higher confidence means that the system will put more emphasis on that variable during analysis.

RULE EVALUATION

Rule evaluation is how Fuzzy Logic performs calculations [35]. This part of FLC is perhaps the most understandable because it represents the practical decisions that are made based on fuzzy inputs. Formally, the rules should be based on some widely – accepted concept or derived by experts in the field. Nonetheless, this application is so niche that the closest source of rules is the generally accepted way in which words operate in practical situations. These rules are detailed in If-Then statements. An example is shown below (To see the full list of rules, see Appendix B):

If a word is not used often (Low FREQ) and that word is not very descriptive (Low POS) and the word is not very ambiguous (Low NMP) then the system can be critically confident (CR) in the word’s definition. (There is not a lot of variability in the meaning; but, considering that non-descriptive words are usually used more often, the system questions the low frequency of the word.)

WORD MEANING

The meaning of a word is the set of all of the words that make up the “context” of that word. This concept borrows from the “repetition creates context” hypothesis proposed by Frame Systems. To give a basic example, what would be the meaning of “green” in the sample text “Grass is green. Green is a nice color. Green makes me happy! But colorless green ideas sleep furiously.”?

First, the text is abstracted into the categories mentioned in Layer 1 of the PLaN Model. Only the relevant categories are shown in Table 13. Each word is then assigned a POWER value based on the three specifications detailed in the *Fuzzification* Section. This POWER is not the same as the meaning of a word; it is simply the “base” value that determines how much that word effects other words around it.

Table 13 Example Meaning Extraction - PLaN Layer 1

Processed Categories	Results
Words	[('Grass'), ('is'), ('green'), ('Green'), ('is'), ('a'), ('nice'), ('color'), ('Green'), ('makes'), ('me'), ('happy'), ('But'), ('colorless'), ('green'), ('ideas'), ('sleep'), ('furiously')]

<i>Sentences</i>	[(‘Grass is green.’), (‘Green is a nice color.’), (‘But colorless green ideas sleep furiously.’)]
<i>Exclamations</i>	[(‘Green makes me happy!’)]

Table 14 Example Meaning Extraction - "Base" POWER of Each Word

<i>Word</i>	POS category value	Frequency	Number of meanings	Fuzzy value	Confidence (%)
<i>grass</i>	3.00	1.00	14.00	2.50	32.78
<i>is</i>	3.00	2.00	2.00	0.67	92.86
<i>green</i>	3.00	4.00	33.00	6.16	80.16
<i>a</i>	1.00	1.00	17.00	1.00	2.93
<i>nice</i>	3.00	1.00	17.00	3.00	36.68
<i>color</i>	3.00	1.00	29.00	5.00	54.87
<i>makes</i>	3.00	1.00	87.00	14.67	41.12
<i>me</i>	2.20	1.00	5.00	0.73	53.83
<i>happy</i>	3.00	1.00	5.00	1.00	67.17
<i>but</i>	3.80	1.00	17.00	3.80	33.87
<i>colorless</i>	3.00	1.00	4.00	0.83	67.17
<i>ideas</i>	3.00	1.00	9.00	1.67	26.28
<i>sleep</i>	3.00	1.00	22.00	3.83	43.18
<i>furiously</i>	3.00	1.00	3.00	0.67	67.17

At this point, the system has an idea of the “powerfulness” of each word and its confidence in its calculations. The final step is to determine the set of words that define the target word, in this case “green.” If there are repeated words, the power of that word is multiplied by the number of repeated terms (e.g. “is” is repeated twice so its power is doubled). Note that the meaning of the word “green” is defined by the cumulative effect of each word in the set weighted by their respective POWER value.

Table 15 Example Meaning Extraction - Meaning of "green"

Word	Importance to the meaning of "green" (unitless)
furiously	0.67
me	0.73
colorless	0.83
a	1.00
happy	1.00
is	1.33
ideas	1.67
grass	2.50
nice	3.00
but	3.80
sleep	3.83
color	5.00
makes	14.67
green	24.67

In this example, it can be seen that "green" is considered in its own analysis. Nevertheless, it is disregarded when "green" is the target word. In these four sentences, "nice", "but", "sleep", "color" and "makes" are the most descriptive. This information does not tell anything about the sentences except that these are the importance levels of each word.

MAINTAINING HUMAN-ABILITY

Although this methodology can be applied to many different events, the focal event of Chandni is depression. With that being said, it's important to keep some parts of the system relatable to people and incorporate some form of human interaction. There is much more that can be expanded upon in this respect. However, given the fact that a person can only make objective decisions on what he/she knows, it would not make sense for a computer to disobey this way of thinking. People continue to learn every day and this system is implemented in a way to emulate this quality. As people learn with people around them, bonds are formed that are more meaningful sometimes than the knowledge that

he/she learns. In the same way, as a computer constantly learns with the operator, there's an understanding that is formed that helps explain what the computer knows and why it makes certain decisions in a transparent way. One of the problems moving forward with all forms of AI is that there's no way to cope with computers knowing more than humans in some areas. By advancing in this area, this system attempts to lay groundwork for greater bonding between man and machine (or at least greater understanding between the two).

"Instead of certainty and cause, AI works off probability and correlation"

Anonymous (2017)

EVENT MODELING

An event is defined as any set or sequence of conditions that must occur in order for some effect to be seen. This definition is meant to encompass a very large, if not infinite, set of possibilities ranging from more standard applications, like physical outcomes (earthquakes, car motion, weather prediction, et cetera), to nonstandard applications, such as abstract outcomes (identifying depression, predicting human behavior and decisions, et cetera). There are many phenomena that can be modeled under this definition that would not normally be defined as an event.

To understand the reasoning behind modeling an event though abstract means, the FE Model must be revisited. The purpose of the model is to abstract an idea into various elements. Based on some newly discovered information, the system needs to be able to understand the implications of what caused the new information to be created, what the new information means, what will happen because the information was interpreted in a certain way and how this analysis will alter the world and, by extension, the future. Humans constantly execute this cycle sub – consciously. For example, assume a teacher told his/her students that they have a test tomorrow. Each student will view this new information differently. Some students may be confident that they are ready for the test and are pondering why the teacher would possibly test them now. Other students may freak out because they are NOT ready and are thinking about their current grade in the class. This thinking could proceed endlessly. None of this changes the facts that there is an examination tomorrow and the test will affect the student's grades. The objective meaning of the information remains the same and could even be thought about more explicitly if certain assumptions are made.

After determining what the information means, the students would then think about what needs to be done because they interpreted the information to be meaningful. There is an infinite amount of questions that can be asked and, as the saying goes, "there are no stupid questions." Yet, there are more relevant questions. The relevance of the questions

will be based on the meaning that was extracted. Assuming the teacher was kind and answered the questions, the students can now decide exactly what they need to do or how they want to handle the situation. This decision will ultimately be the reason the teacher communicated the idea. The teacher could have easily not presented the information to the students and just given the students a test tomorrow. That is not what happened though. Despite the short notice, the teacher communicated the existence of a test to partially get the students to prepare for it. This infinite series of thoughts was theorized to be captured by the FE Model. Because everything occurs so quickly, it's difficult to know exactly how the information is processed and in what order decisions must be made. At what point does a student accept the reality of the test? Is it possible that the students can convince the teacher to not give a test? At what point is the decision to act made? Is that a decision that needs to be made? Questions like these can only be answered if a particular perspective is analyzed. The perspective that the system takes is dependent on how it extracts meaning from a particular text. It also depends on the way each element was programmed. The idea would be to implement concurrent instances of the system and have many different perspectives analyzed in parallel.

INTELLIGENCE AND DECISIONS

There have been many attempts to model intelligence in the past. One of the earliest attempts was made by Charles Spearman in the form of "General Intelligence" [36] which states that intelligence can be theorized as the performance similarities or differences between two tasks. This idea that intelligence is somehow linked to different abilities that humans possess (or learn) is not alien. In fact, it was expanded upon by Louis L. Thurnstone and labeled, "Primary Mental Abilities." [37] These included: word fluency, verbal comprehension, spatial visualization, number facility, associative memory, reasoning and perceptual speed. While these groupings are sensible, they are not practical and scalable to larger arenas that require higher levels of abstraction, such as situations where humans act "instinctively" (without thinking) but are able to explain exactly why they chose to do a particular thing. It does not provide specific details on why certain things occur in a particular way. Others have shared this mentality, such as Gardner and Robert, who developed the theories of "Multiple Intelligence" [38] and "Triarchic Theory of Intelligence" [39] respectively. All of this development amounts to the fact that intelligence is still an unknown concept. It is much like the human brain whereby, humans didn't invent it, so humans don't know how it works.

It is important to talk about because as technology progresses and the world changes, it'll be harder to understand why events are occurring and how different aspects of life are actually related. Nelson Mandela stated the idea eloquently

when he said, “It always seems impossible until it's done.” Did humans really invent flying? Did humans invent machines? Did humans design theories? Or did humans merely discover them or the process in which they became a reality? It is argued that humans don't know what really defines intelligence, so “artificial” intelligence doesn't really exist either. In fact, “research in AI has built upon the tools and techniques of many different disciplines, including formal logic, probability theory, decision theory, management science, linguistics and philosophy” [40]. By definition, AI techniques define “smarter” or “more intelligent” ways of programming decision models and methodologies; however, the idea of intelligence in NLP can essentially be defined as the ability to perform the actions required by the PLaN Framework. When applied, such a framework handles all of the building blocks associated with intelligence in a practical manner. It even provides a basis for adding new abilities that may be required to expand intelligence.

ENERGY AND CHAKRAS

Energy is a measure of the capacity of something to do some work. Many applications in physics and engineering revolve around the ability to control energy to perform a specific task. Because everything is composed of some form of energy, primarily Potential Energy (PE) or Kinetic Energy (KE), Engineering can also be defined as the practical study of controlling energy. When examined further, this is not much different from cultural understandings and methodologies of energy. The Law of the Conservation of Energy (developed by Julius Robert Mayer in 1842),

[...], also known as the first law of thermodynamics, states that the energy of a closed system must remain constant—it can neither increase nor decrease without interference from outside. The universe itself is a closed system, so the total amount of energy in existence has always been the same. The forms that energy takes, however, are constantly changing.

The Scientific American (2014) [41]

Incorporating this concept into the definition of an event yields an event as the outcome realized through the exertion of energy. There are many ways of abstracting energy, both physically and spiritually. Since the target event in this paper is depression, a spiritual abstraction of energy will be derived. Still, this concept is transferrable to other applications that require a more tangible understanding of energy.

Throughout history, there has been many disciplines involving chakra. Each carry a slight variation in the science that governs how chakras operate or what each chakra means. Generally speaking, there are seven primary chakras

that act as centers for particular aspects of life. These seven chakras can be meshed with varying degrees of magnitude and expanded upon infinitely to model more specific areas of interest. For this project, only the seven central chakras were analyzed. These chakras (in order) are: (1) Earth, (2) Water, (3) Fire, (4) Heart, (5) Sound, (6) Light and (7) Cosmic. All seven are connected like a stream connects various ponds. The connection strengths can vary the flow rate of energy between chakras causing imbalances and blockages. Each chakra is manifested in a different way and can affect each other positively or negatively. When all seven are in harmony (or equal in manifestation power), an individual is in their best state. When any one is imbalanced (over- or under- exerted), the others attempt to compensate.

Energy naturally flows in all directions within the chakra chain. When an individual is in control of their chakras, he/she can selectively increase or decrease their energies to handle different situations that arise during life. The action of increasing a chakra in a controlled manner is known as infusion. When this action occurs without control, it may “block” the chakra. When this occurs, the only remedy is external influence to re-regulate that particular chakra. With enough training, a person may be able to unblock their own chakra. However, this is only achievable by very skilled individuals and is not considered frequent enough to consider in normal analysis.

This paper proposes that this movement of energy can be witnessed within the words that individuals use to communicate thoughts, ideas and their own knowledge. By expressing these ideas, individuals seek to balance the external energies that are present around them (in the form of new¹⁷ information). The manifestation of these energies can be seen in Table 16. Each chakra exhibits (or “represents”) a certain aspect of life and is inhibited (or “blocked”) by certain inabilities of an individual to cope with that aspect. In the optimal case, each chakra would be neutral which means that an individual is not exerting any more energy for one aspect of life relative to another aspect. When a chakra is “overactive” (or positive), that individual is exceling in that area when compared to other areas. Conversely, when a chakra is “underactive” (or negative) that individual is struggling in that area of life. Positive chakra generally means that the individual is exhibiting the quality in the “controlling” aspect column; otherwise, he/she is exhibiting the quality in the “blocking” aspect column.

¹⁷ This information may not be entirely new. It may be the same information floating around in different contexts. However, every time an individual encounters a piece of information, it affects him/her in some way (i.e. hearing “I like pie” 1,000 times is definitely different from hearing “I like pie” one time)

Table 16 Energy - Chakra Quality Relationships

<i>Chakra</i>	“Controlling” Aspect	“Blocking” Aspect
<i>Earth</i>	Survival	Fear
<i>Water</i>	Pleasure	Guilt
<i>Fire</i>	Willpower	Shame
<i>Heart</i>	Love	Grief
<i>Sound</i>	Truth	Lies
<i>Light</i>	Insight	Illusion
<i>Cosmic</i>	Freedom	Earthly Attachment

FEATURE IDENTIFICATION

Each event is distinguished through the recognition of a set of “features” unique to that particular event. A feature can be defined as unique sets of chakra values. The features that define an event are represented by a collection of individual chakra combinations extracted from each language sample. To successfully form features of an event, two conditions must be met: (1) uniqueness and (2) one – to – one dependency. Uniqueness merely means that a feature must be distinct and defined by a specific combination of chakra values. No two features can have the same defining characteristics. Secondly, one feature may only impact a single event in a single way. Two events cannot share the same feature for the same purpose. This requirement ensures that events are distinct from each other. A feature may be defined as an earth chakra value from 50 and 100. In order for this feature to apply to an event, the following blank must be clearly defined and distinct:

Because {condition}, this event will _____ {effect}_____.

Condition: [the earth chakra value is between 50 and 100]

Effect: [the individual is exhibiting positive survival skills] or [the individual has a certain inclination], et cetera

The conditions can be expanded upon infinitely to incorporate digital system design logic (AND, OR, XOR ...) as well as annotated information. An event feature could consider how the chakras of an individual changes over time representing growth in an individual. This feature would need to include some form of time into the condition aspect. Likewise, the effect would represent the way in which a person may growth (or remain the same). This becomes more evident when annotations are discussed in the *Corpus Analysis* section.

For this project, the features defined can be represented in matrix form, specifically an upper triangular matrix, as shown in Table 17. In order to track similarities between samples, each individual chakra is held constant and is compared to every other chakra. By looking at this comparison, the system is able to record what chakras are generally high or low when compared to other chakras. In this way, a feature is determined to be the status of a chakra value as it relates to another chakra value. For example, the sound chakra may be higher or lower than the earth chakra in individuals which can be interpreted as one of two features,

Because the sound chakra is higher than the earth chakra, an individual expresses sincerity more than evidence of their day – to – day struggles. This may also be interpreted as the individual is more truthful than open to sharing information about their struggles. (1)

Because the sound chakra is lower than the earth chakra, an individual expresses signs of personal problems more than evidence of truthfulness. (2)

It may be argued that the effect of both of these features are in conflict. Nonetheless, closer examination reveals that they are not. A person may be hyperbolizing their problems which means that he/she is not focusing on the truth of their words. Conversely, a person may be showing signs of truthfulness in all areas except their personal problems (which he/she may be reluctant to talk about). The person is not lying; he/she is simply not being open. Such features are not telltale signs of depression; however, the more features that overlap between groups of people, the greater the chance that two samples are expressing similar feelings and those feelings happen to belong to depressed individuals.

The lower triangular matrix simply represents the inverse operation, so index (earth, water) shows the effect of water when earth is constant and index (water, earth) shows the effect of earth when water is constant. In either case, the two represent a complement relationship. This is true because there are only three options: (1) higher, (2) lower or (3) equal. If one chakra is higher, the other will be lower. If the two chakras are equal, there is no effect to either chakra. With a different set of feature conditions, a different matrix may be developed. Nevertheless, all of the data necessary for this project can be derived from the upper triangular representation.

Table 17 Upper Triangular Matrix of Chakra Features

	Earth	Water	Fire	Heart	Sound	Light	Cosmic
Earth	0	+/-	+/-	+/-	+/-	+/-	+/-
Water	X	0	+/-	+/-	+/-	+/-	+/-

<i>Fire</i>	X	X	0	+/-	+/-	+/-	+/-
<i>Heart</i>	X	X	X	0	+/-	+/-	+/-
<i>Sound</i>	X	X	X	X	0	+/-	+/-
<i>Light</i>	X	X	X	X	X	0	+/-
<i>Cosmic</i>	x	X	X	X	X	X	0

When analyzing the levels of each chakra relative to another chakra, another fuzzy logic system was used. This system was defined in a similar manner as the previous one where each measurement was uniformly distributed as shown in Figure 10.

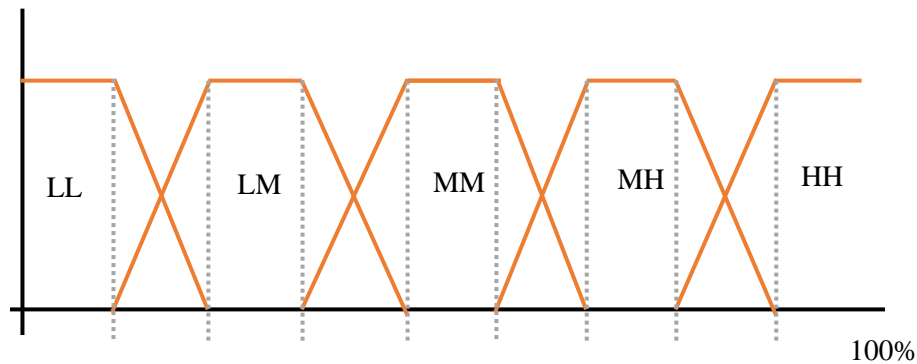


Figure 10 Chakra Relativity Membership Function

WORD EFFECT

An event is clearly defined as a set of conditions which is discovered through the identification of various features. But how does a word effect a feature? This is a problem that handicaps this system. This requires some understanding of the world which is one of the unsolved mysteries of NLP. This paper does not pretend to suggest a sustainably scalable solution. In fact, this is one of the weakest links within the system. Looking back at the FE Model, real – world knowledge (RWK) is confined mainly within the *Action* and *Knowledge* elements. The other two elements may contain small pieces of RWK, but nothing of sizable mention. To explain how this system chose to represent the effect of words, it is helpful to revisit the concept of channel capacity as defined in a speech towards the Eastern Psychological Association in 1955. Channel capacity (CC) can be visualized as shown in Figure 11. It argues that the amount of information transmitted in a communication channel is the covariance between the input and output

[21]. The speech argues a communication channel as a single person with the input being “stimuli” (or external information that is heard or read) and the output is the amount of information that the person is able to reiterate. This is a straightforward idea; however, it can be expanded upon even further. Simply restating a sentence that a person reads does not constitute that the person has some understanding of the sentence.

Consider a conversation between two people (person A and person B). The communication channel in this case is meant to mean the language that is exchanged between the two people. The input information to the communication channel is the idea that A intends to convey to B. Similarly, the output information is the idea that B understands after hearing the words of A. In this manner, the amount of transmitted information is the covariance between the idea that B understands and the idea that A understands. Connecting this to the FE Model, the information input into the system was formulated to convey a particular idea. The idea that the system understands after interpreting the information may differ. This is not a problem with the system though. It is a problem with language.

With that idea in mind, each word’s effect on each chakra was designed to be a constant. Each word either “promotes” or “demotes” the aspect of life that each chakra represents. As result, the word’s effect on each chakra is a binary (+1/-1) value. Because the way in which each word effects a given chakra is constant, a set of dictionaries were developed. There are two dictionaries: one for words with a positive effect on a chakra and one for words with a negative effect. Each dictionary has seven keys, one for each chakra. When the effect of a target word is required, it is looked up in both dictionaries.

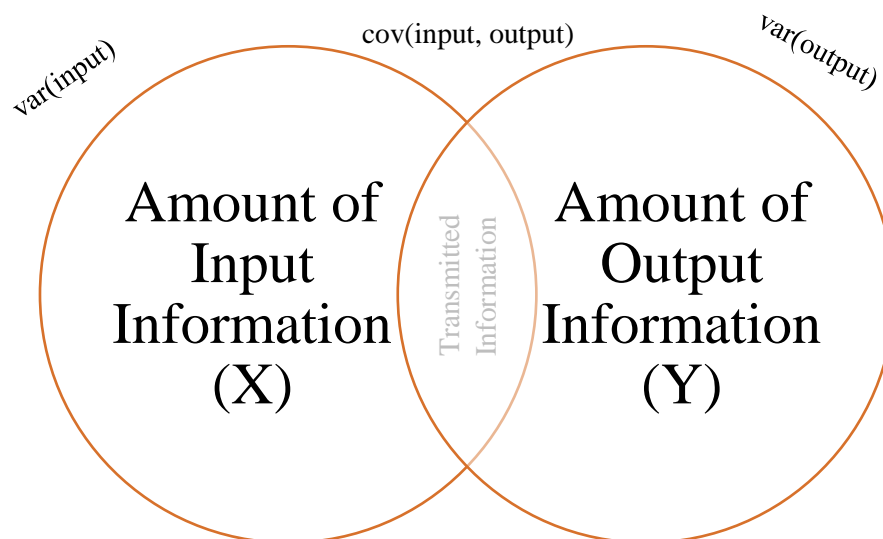


Figure 11 Channel capacity as described in the speech

This method of determining word effect can be seen as biased; however, the categorization of each word was implemented to be as close as possible to the aspects contained in Table 16. Deliberate the word “go.” In terms of the earth chakra, this word was labeled as positive because the word “go” describes motion and action. In order to survive, these ideas and decisions are necessary. By using the word “go”, the author of a particular text is exhibiting these qualities. Concerning water chakra, “go” doesn’t particularly have any bearing on a person’s pleasure. It may cause happiness for some and it may not for others. Since the effect is not as clear as it was for earth chakra, “go” was labeled as negative. This train of thought is continued for the remaining chakras which results in (+fire, -heart, -sound, -light and -cosmic). Revisiting the idea of “perspectives”, the way in which each word was tagged provides a certain perspective for the system.

CORPUS ANALYSIS

Corpus linguistics (CL) is developing into an increasingly interdisciplinary field of study shared by both Linguistics and Computer Science. The goal is to understand language through its most-common¹⁸ (or most appropriate) uses in real-life applications. This differs from Lexicography or other fields that analyze word meanings. These studies are often biased as they are influenced by the developers (or the purpose for the collection of language). For example, learner’s dictionaries focus on helping new users of a particular language to grasp fundamental concepts (i.e. Merriam-Webster's American English Learner's Dictionary [42] or Cambridge Learner's Dictionary [43]). In the process of developing a learner’s dictionary, concepts may be over simplified and certain senses may be lost. As a result, there’s no way of developing such a tool to be complete, or even useful.

Corpora (or singular “corpus”) are large collections of text, typically impartially gathered from authentic real – life sources. A well – formulated corpus provides a representative baseline from which certain conclusions can be drawn. There are many applications for corpus studies which range from forensic linguistic (FL) analyses to natural language processing (NLP) techniques and much more. Going back to the example of dictionaries, instead of the use of lexicographers to assign word meanings, corpora can be used to determine the different meanings that humans use in day – to – day life. This arguably presents unbiased and true meanings for words which helps to express “thoughts” (or ideas and concepts) in an appropriate light. The first example of a corpus – based approach to defining word

¹⁸ The parameters that define the most common use(s) of a word vary depending on the application. It could be the most frequent sense of a word or it could be the sense of a word that is used in its appropriate context.

meanings and senses (specifically for learners of English) was COBUILD English Language Dictionary which was released in 1987 [44]. There have been many such developments since that time culminating in a very large number of dictionaries relying on corpora (or corpus studies). Nevertheless, dictionaries remain a single example of how corpora are used to solve issues of understanding and communication.

As one of the bridges between Linguistics and its sister discipline of Natural Language Processing (NLP), CL plays a critical role in representing real – world knowledge. Corpora are one of the few resources that computers have to understand how things connect in real – life. For instance, grass is defined as “narrow-leaved green herbage: grown as lawns; used as pasture for grazing animals; cut and dried as hay” [45] or “any plant of the family Gramineae, having jointed stems, sheathing leaves, and seedlike grains” [46]. However, definitions like these don’t reveal any information about the function of grass or how grass operates. Muhammed Ali once said, “It’s just a job. Grass grows, birds fly, waves pound the sand. I beat people up.” There’s no definition that captures the fact that grass grows, and it happens on its own. There’s no definition that states the conditions in which grass grows in a healthy or unhealthy way. And there’s no definition that makes these facts relevant to the idea that Muhammed Ali was trying to convey. Even an encyclopedia¹⁹ about grass falls short in capturing the essence of grass as it is relevant in such a quote.

The purpose of corpus analysis is to better understand the way in words are used and the impact that those words have. This discussion is not complete without mentioning the effect of culture on the understanding of words. As previously stated, Intercultural and Cross-cultural Pragmatics [22] deals with how the real-life impact of language is affected by cultural boundaries and differences. When performing analyses of large bodies of text, it’s important to keep in mind the sources, as the author of each language sample has a certain schema²⁰ associated with the intent of what he/she is attempting to communicate.

CORPUS OBJECTIVE

This project analyzes three sub-corpora which can be collectively referred to as “Depression Relevant Corpus” (DRC). As the name suggests, the aim is to determine characteristics and other features that can be used to identify depression

¹⁹ An encyclopedia is a collection of information pertaining to specific topics. Regardless of how these resources are developed or defined, they represent a finite set of information. It is impossible for a finite dataset to describe an unbounded (possibly infinite) dataset.

²⁰ Schema can be defined as a set of parameters or factors that influence the comprehension of language of a person. The idea was first proposed by Bartlett [53]

in textual²¹ language. This venture does not discriminate between “mood” depression and “clinical” depression as both result in many of the same outcomes. In order to properly identify depression, the following three cases must be examined:

1. Sub – Corpus 1 “Depressed” (DRC.D): Contains texts authored by individuals known to have experienced depression and whose language sample is from a time that individual had experienced depression. This corpus is a reference for true positive depression (or existence of depression) identification. *Note: If it’s unclear if a person is clinically – diagnosed as depressed, an author’s self – diagnosis is a sufficient marker.*
2. Sub – Corpus 2 “Non-depressed” (DRC.N): Composed of texts authored by individuals who may or may not have experienced depression in the past; however, the individual is not currently experiencing depression and his/her language sample is from a time when he/she was not going through depression. Complementing DRC.D, DRC.N is a reference for true negative depression (or absence of depression) identification. *Note: It cannot be assumed that a sample is not from a depressed individual simply because the topic is not mentioned.*
3. Sub – Corpus 3 “Unknown” (DRC.U): Consists of texts authored by individuals whose history with depression is unknown and the authors’ current state is unidentified in the language sample. Contrary to the other two corpora, these samples will be used as the test data for the system in order to determine successfulness in extracting characteristics from the first two corpora.

In most cases, corpus analyses use some form of computational aid in determining key aspects of a corpus, such as word frequency, concordance, collocation and keywords in context. Based on these metrics and how words are used, conclusions are drawn to support various hypotheses. Along with investigating these criterion, this project focuses on modeling the decision choices that humans make through the use of NLP techniques. The end results will determine the successfulness of a computer in identifying depression in text using the described approaches. This successfulness will be exhibited through answering the question: Given textual language samples, are there any characteristics (or combinations of characteristics) of English that distinguish a person experiencing depression from one who isn’t?

²¹ Textual simply means the language was either originally in written form or speech was transcribed into written form.

Corpus analyses are generally used to make conclusions about large groups of language. However, this project seeks to be descriptive on a smaller scale as well. It will be clear when either analysis is being discussed.

CORPUS SPECIFICATIONS

There are many parameters that can influence how a corpus is collected and organized. In general, these parameters are tweaked to optimize the representativeness of the corpus. In turn, this provides more relevant information with which to draw appropriate conclusions. The parameters that were studied for DRC are: (1) source (or “register”)²² diversification, (2) time of authorship, (3) annotation information, (4) language sample length and the (5) total number of samples. Each was inspected to determine how it influences the conclusions that can be drawn. Overall, the corpus was not designed to be completely representative in any one parameter as it demonstrates the flexibility of the system to handle incomplete or biased information.

REGISTER DIVERSIFICATION

The main sources of language samples were compiled from online written blogs and survey respondents²³; however, there are a few transcribed video blogs (“vlogs”), podcasts and interviews. Referring back to the corpus objective, “textual” was defined as any type of communication that is in written form regardless of if that was the originating format. If this specification was more specific, such as “Given written language samples, ...”, having spoken language samples (whether transcribed or not) would not help to answer the question and would result in unreliable results. By including all types of communication in the analysis, the point was to capture language that was authentic to depression as possible. Some people can convey their thoughts better through speech than writing (or vice versa). This design decision was to account for this variation. It should be noted that when spoken language is transcribed most of the prosody and intonation of the speaker is lost. Since the project is concerned with only the words used, the loss of information is not relevant.

TIME RANGE OF SAMPLES

Language is an ever-changing model for how humans communicate ideas/thoughts/concepts. In some situations, the “version” of language that is analyzed could lead to large misunderstandings if archaic language is used to draw

²² Registers generally refers to categories that individual sources are grouped into (i.e. “The Mad Scientist” and “Blogspot” are sources that would group together into the “blogs” register.

²³ See Appendix C for specifics about the survey

conclusions about modern language (or vice versa). For instance, the use of the word “tweet” within the last decade is used to reference the action of posting a message to Twitter; as opposed to a few decades ago, when the social media platform did not exist [47]. To highlight the change in the usage of this specific word, Figure 10 shows the frequency change over the decades between 1990 and 2017. The Corpus of Contemporary American English (or, COCA) is a corpus consisting of around 560,000,000 words in a diverse array of American English settings²⁴. For this work, time was not seen as an inhibiting factor in identifying language that tends to be utilized by depressed individuals. Again, since the corpus objective was vague, the target of the analysis is any user of English (whether he/she is part of the Inner, Outer or Expanding Circle [23]) at any point in time. As previously mentioned, any language – dependent assumptions or considerations should be taken care of in Layer 2 of the PLaN Framework. Most of the samples use Anglo – American English, but there are still problems that arise from the absence of Layer 2.

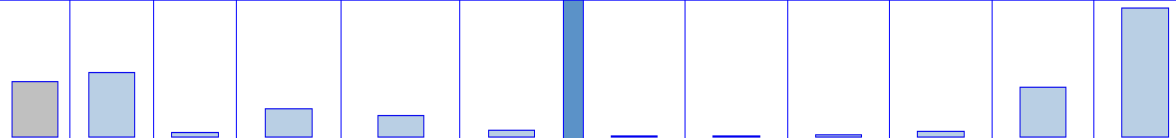
SECTION	ALL	SPOKEN	FICTION	MAGAZINE	NEWSPAPER	ACADEMIC	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2017
FREQ	5686	1515	61	668	479	120	6	18	31	103	1050	1635
WORDS (M)	465	116.7	111.8	117.4	113.0	111.4	104.0	103.4	102.9	102.0	102.9	62.3
PER MIL	12.23	12.98	0.55	5.69	4.24	1.08	0.06	0.17	0.30	1.01	10.20	26.24
SEE ALL SUB-SECTIONS AT ONCE												

Figure 12 "tweet" usage between 1990 and 2017 [47]

ANNOTATED INFORMATION

Annotation can be defined as the inclusion of extra information into a specific dataset. There are many annotation schemes; but annotated information is typically found in close proximity to the data to which it is referring. This data can be organized in the form of lists/sets, trees and more. The one piece of annotated information critical to this investigation is the diagnosis of the author. Without this information, there will be no way to compare the texts of one group to the other. However, to aid in future studies expanding on this topic, the following pieces of information were also gathered (if available): (a) identifying name²⁵, (b) age, (c) occupation, (d) self – diagnosis, (e) current –

²⁴ The registers of COCA are spoken, fiction, popular magazines, newspapers and academic journals with ~118-, ~113-, ~118-, ~114- and ~112- million words, respectively. [47]

²⁵ Could be a username or first name, depending on how the source was organized

diagnosis, (f) date of authorship²⁶, (g) register and type²⁷, (h) regional location (i.e. US, UK...), (i) favorite color, (j) author identification with each of seven characteristics (explained in Corpus Analysis section; survey respondents only) and (k) URL (if from online source). There is extra analysis that can be performed taking into account each of the pieces of information (i.e. if multiple samples are from the same individual, tags (a) and (f) become relevant to: (1) identify the samples as related and (2) to distinguish the order in which the samples came into existence. This could be used to see how that individual's attitude changes over time. Also, if depression was being analyzed in a particular age group, tag (b) would be relevant.) As the intention of the corpus is general, most of the tags are peripheral information. Graphs showing the distribution of some of the tags can be seen in Appendix D.

SAMPLE LENGTH

The length of each language sample is crucial because it is the only piece of information that this system considers in its analysis (apart from tag (e)). There is no strict restraint on the minimum or maximum number of words in each sample. However, a word count of between 100 and 500 was determined to be appropriate to give enough context to understand the meaning of each word. The average word count across all samples in DRC is approximately 504 words and the median word count is 758 words. With more than 50% of samples containing more than 700 words, DRC fits this specification well. More detail is shown in Table 16.

CORPUS TOTAL SIZE

The corpus was planned to be uniformly distributed with the same number of language samples in each sub – corpora of DRC. Due to circumstances, this specification could not be realized in the implementation which resulted in 110 samples in DRC.D, 15 samples in DRC.N and 90 samples in DRC.U (totaling 215 samples in DRC). This corpus is very small and does not have any application outside of this current project. With that being said, it acts as a proof-of-concept for larger applications which can build upon DRC. Nevertheless, being disproportionate, the system will learn more about language samples authored by depressed individuals.

²⁶ NOT the date the sample was discovered

²⁷ Complete list of registers: blogs, vlogs, interview, podcast, survey, social media; Types: written or spoken

Table 18 Corpus specifications

Corpus ID	Total Size	Total Word Count	Average Word Count	Median word counts (middle 5 values)
DRC	215	109268	504	[388, 388, 392, 395, 398]
DRC.D	110	53947	490	[392, 403, 405, 409, 420]
DRC.N	15	8965	598	[181, 185, 285, 434, 454]
DRC.U	90	46356	504	[371, 377, 384, 388, 388]

CORPUS DISCUSSION

The point of the system is to focus on features that define the two critical “events” (the existence of depression and the absence of depression). As a result, the inner workings of how the computer assigns meanings to words and quantifies its impact towards each event is outside the scope of CL. It should be noted that there are many ways to interpret and study CL:

*[...] some consider CL a **theory**, for instance Leech (1992: 106), Stubbs (1193:2f), Tognini-Bonelli (2001:1), Teubert (2005:2). Others consider CL a **methodology**, such as McEnery & Wilson (1996), Meyer (2002), Bowker & Pearson (2002), McEnery at all. (2006:7f), Hardie & McEnery (this volume). [...] Yet other corpus linguists (e.g. Aarts 2002, Teubert 2005, Williams 2006) use other labels such as **discipline** or what I would call a methodological commitment: “[CL] is rather an insistence on working only with real language data taken from the discourse in a principled way and compiled into a corpus” (Teubert 2005:4)*

(Gries [48])

This paper considers the definition of CL as it was proposed below:

[...] corpus linguistics is a whole system of methods and principles of how to apply corpora in language studies and teaching/learning, it certainly has a theoretical status. Yet theoretical status is not theory itself.

(McEnery [49])

As such, each method that defines how the system operates need only be discussed in terms of its relevance to the system. The underlying theories and methods concerning how to represent words and meanings live deeper in the realm of NLP and are only relevant as they influence each event from a CL perspective. Nevertheless, a basic understanding of these mechanisms is necessary to determine the validity of each feature that arises and whether it characterizes either of the two events.

Each event is modeled on the basis of seven characteristics (or “chakras”): (1) earth, (2) water, (3) fire, (4) heart, (5) sound, (6) light, and (7) cosmic. Each chakra exhibits (or “represents”) a certain aspect of life and is inhibited (or “blocked”) by certain inabilities of individuals to cope with that aspect. These aspects are detailed in Table 16 and were discussed in greater detail in the *Event Modeling* section.

The features that define either of the two events (the presence of depression or absence of depression) are determined from DRC.D and DRC.N. For example, if a language sample is annotated as being from DRC.D, the resulting analysis of that sample will be grouped with other samples from DRC.D. As the system encounters more samples from a particular sub – corpora, it can be said that the system “learns” more about that particular event. The system knows which sub – corpora each language sample is from because of the annotated information identifying the author’s depression diagnosis. Because of this material, the system is able to group the language samples into two distinct categories, namely DRC.D and DRC.N. However, DRC.U does not represent any particular event. Instead, the analysis of the language samples present in this corpus is matched with that of DRC.D and DRC.N. Based on the percentage match in each set, the system will decide which group the sample should be grouped.

Each language sample will have an associating chakra set that is independent from every other sample. In order to track similarities between samples, each individual chakra is held constant and is compared to every other chakra (as shown in Table 17). By looking at this comparison, the system is able to record what chakras are generally high or low when compared to other chakras. In this way, a feature is determined to be the status of a chakra value as it relates to another chakra value. For example, the sound chakra is generally high when compared to the earth chakra in individuals experiencing depression. This feature is not a telltale sign of depression; however, the more features that overlap between an event and a sample, the greater the chance that the sample aligns with that event.

CORPUS TYPE TOKEN RATIO

When discussing the completion of a corpus, the first metric to analyze is the type – token ratio (TTR) which describes the uniformity of the samples collectively. This ratio is computed by dividing the number of unique types by the total number of tokens in a given sample. For example, the TTR of the following sample is 0.875 because “to” is repeated twice. All of the types have been underlined and labeled on the bottom; the tokens have been numbered on top.

1 2 3 4 5 6 7 8 (Tokens)

I want to study to become a doctor.

1 2 3 4 3 5 6 7 (Types)

The TTR graph for each corpus can be found in Appendix E. Since each sub – corpus was designed for a different purpose, the TTR of each one has been analyzed along with the TTR of DRC. The TTR of DRC shows that all of the samples share a similar lexicon utilization level. It does not mean that the same words are being used; it only means that the number of repeated words relative to the total number of words used in each sample is fairly constant. This means that all of the samples within DRC are on comparable terms. Another point to note is that the samples from DRC.N began with a higher lexical density and moved lower as more samples were added, while samples from DRC.D began with a lower lexical density and moved higher. Because the total corpus size is relatively small, this phenomenon could be present due to chance; however, it is an interesting development. With this conclusion, it could be hypothesized that most of the samples in DRC.U are closer to samples that would be grouped with DRC.N because it follows a similar trend in the TTR graph.

CORPUS TOP TEN WORDLIST AND “ABOUTNESS”

Word lists help to obtain an understanding of what each corpus is about and what themes are present. It also shows the diction that the authors chose to convey a particular theme. For these corpora, the word lists provide a hypothesis that is inversely related to that which was derived from the TTR, namely that the wordlist of DRC.U is more similar to DRC.D. Even though the top ten words do not say much about the content of the corpus, it is interesting to note the order in which these words appear as shown in Appendix F. Even though the total number of words in DRC.N is significantly lower than the other two sub – corpora, the average word count in each sample is similar. If the frequency of the top ten words is normalized, the similarities between the corpora become clearer as shown in the data of Appendix F.

In terms of corpus aboutness, DRC collectively seemed to revolve around reflection. There were a decent number of adverbs and words describing alternative realities or possibilities in the future, such as “always”, “again”, “much”, “could”, “should” and “better”. This idea is shared by both DRC.D and DRC.N; however, as evident by “I” being the most frequent word, DRC.D focuses on actions and decisions that involve the author more than DRC.N. DRC.D also considers “we”, “she” and “he” in the topics leading to a mix of independence and unity among the people involved

in the topics. DRC.N contains words dealing with general independent topics, including “independence”, “love”, health”, “people” and “laughter”. Also, the appearance of “you” in the top ten words was not very meaningful as more than half of its uses appeared in a single sample. That particular sample was proposing hypothetical situations among its listeners.

Again, this type of analysis does not say much about people who experience or don’t experience depression. The corpus is not representative of those groups on a large scale. It is, however, representative of particular sub-sets of those groups. Is there a way to know which sub-set? Possibly. In order to determine that, extensive research would need to be carried out to further categorize depression which is not within the scope of this project. This paper only argues that the groups are A FORM of each general group; it does NOT argue a SPECIFIC form.

CORPUS FEATURES

The final set of data that is relevant to the research question represents the features that the system found in DRC.D and DRC.N. These features are compared to the set of chakras extracted from each sample in DRC.U. The features for DRC.D and DRC.N are shown in Table 5 and 6, respectively. Each row in the table is neutral. Each intersection shows the level of the column’s characteristic relative to the row’s characteristic. For example, in Table 5, (Earth, Water) displays that samples from DRC.D generally exerted signs of being pleased with life more than signs of focusing on surviving.





Although the values in Table 19 are much larger than Table 20 due to the difference in the corpus sizes, there are a few features that can be identified. The most prominent feature is evident in the (Heart, Sound) correlation. Samples in DRC.D tend to be more truthful than loving in their expressions; whereas, the samples in DRC.N exhibit an inverse quality. Unlike this feature, the remaining features identify a peculiarity in one corpus that is non-existent in the other (or are inversely related with a smaller significance). (Water, Heart) demonstrates a one-way correlation such that in DRC.N, samples are focused more on expressing love than their experience in day – to – day struggles. In DRC.D, there’s no significant relation between their water and earth chakras. It could also be said that these samples hold both areas of life at the same level of importance.

Table 19 DRC.D "Features" Matrix

	Earth	Water	Fire	Heart	Sound	Light	Cosmic
<i>Earth</i>	0	37.2	-12.8	-0.4	36.4	29.2	2.4
<i>Water</i>	X	0	-50	-37.6	-0.8	-8	-34.8
<i>Fire</i>	X	X	0	12.4	49.2	42	15.2
<i>Heart</i>	X	X	X	0	36.8	29.3	2.8
<i>Sound</i>	X	X	X	X	0	-7.2	-34
<i>Light</i>	X	X	X	X	X	0	-26.8
<i>Cosmic</i>	X	X	X	X	X	X	0

Table 20 DRC.N "Features" Matrix

	Earth	Water	Fire	Heart	Sound	Light	Cosmic
<i>Earth</i>	0	4.8	-2.8	4	2	4.4	1.2
<i>Water</i>	X	0	-7.6	-0.8	-2.8	-0.4	-3.6
<i>Fire</i>	X	X	0	6.8	4.8	7.2	4
<i>Heart</i>	X	X	X	0	-2	0.4	-2.8
<i>Sound</i>	X	X	X	X	0	2.4	-0.8
<i>Light</i>	X	X	X	X	X	0	-3.2
<i>Cosmic</i>	X	X	X	X	X	X	0

This project was designed to highlight new ways of understanding meaning associated with words and how meanings of words are dependent on other words. Using the methods described here as well as the corpus developed, it cannot be said that a computer can understand and identify depression reliably. Nonetheless, the system does show strength in understanding how words are related to each other. By developing a larger corpus and analyzing more combinations of chakras, the system has potential for better accuracy in future iterations. In theory, this analysis should be one of many that a computer incorporates into its decision model. The investigations are more descriptive on an individual basis; however, this section attempted to expand the individual analysis to a larger scale. As seen in Table 21, there are features in DRC.U that are match those in DRC.D and DRC.N represented by the colors  and  respectively. Still, there are features that are unique to DRC.U highlighted by . The features highlighted in  show inverse


relationships between DRC.D and DRC.N.  shows a slight deviation from both DRC.D and DRC.N; however, the corpora are too small to highlight this as a feature.

Table 21 DRC.U "Features" Matrix

	Earth	Water	Fire	Heart	Sound	Light	Cosmic
Earth	0	34.4	6.4	12.8	22.4	23.2	8
Water	X	0	-28	-21.6	-12	-11.2	-26.4
Fire	X	X	0	6.4	16	16.8	0.8
Heart	X	X	X	0	9.6	10.4	-4.8
Sound	X	X	X	X	0	0.4	-7.2
Light	X	X	X	X	X	0	-7.6
Cosmic	X	X	X	X	X	X	0

To answer the corpus objective: Yes, there are features that the system identifies in DRC.D that are not present in DRC.N. Nevertheless, as previously stated, these features cannot be used as definitive signs of depression in individuals. At best, the current system can draw correlations between bodies of text. Whether the texts are representative of a particular specification is up to the interpreter to decide. Despite this seemingly glaring problem, the system will be able to identify different features based on this method, which was part of the goal. Defining the significance of each feature is still a variable to be solved in future iterations of the system.

IMPLEMENTATION DETAILS

There are many pieces of the puzzle that the theory leaves open to interpretation. Like any program, there are a plethora of design choices that range from the choice of programming language to algorithm design and much more. Without narrowing the scope of a new developer's imagination, these details are meant to describe the reasoning for certain programming decisions. One of the purposes of the PLaN Framework and FE Model is to influence the abstractions used for programming. Each layer should have its own master script that defines how that layer interacts with the other layers and performs its own analyses. For this project, Layer 2 was non-existent and the *Knowledge* element was not implemented. As such, this implemented consisted of a condensed version of the framework. Three levels were defined: (0) Input normalization, (1) Consciousness, (2) Event modeling.

LEVEL 0 – INPUT NORMALIZATION

This level dealt with the function of Layer 1 of the PLaN Framework. The output of this was directly fed into the FE Model *Information* element. As previously mentioned, regular expressions were used to categorize the inputs. The only issue that was discovered with the regular expressions during testing was the improper handling of words ending in numbers, such as “mp3” and “W2”. Apart from these situations, the regular expressions performed extraordinarily.

This layer was programmed to be the bridge between the system and all external information. For example, user input is handled explicitly on this layer because any data input into the system needs to be structured in a very strict manner to ensure the maximum channel capacity between layers. This layer was the only layer implemented with classes. However, applying a functional programming approach would be better as none of the middle processing is required. The purpose is to transform a set of unformatted data into a set of information.

At this layer, the system works to learn about words from the external word through the use of online dictionaries. There were two querying programs written to download a word’s definition from Dictionary.com as well as Vocabulary.com. To stop the system from relying on these resources all of the time, it stores the dictionary in a local PostgreSQL database. This helps the system to perform analysis without the need for continuous internet connectivity. This is the first instance of a learning aspect exhibited by the system. It is rudimentary, but necessary to create a foundation for understanding words. Currently, the system does not support the addition of user defined definitions to its database. By incorporating such a feature, the system would be able to handle more unconventional use of words. Some of these functions can be seen in Appendix G.

LEVEL 1 – CONSCIOUSNESS

The focus of this level aligned best with the Attributes element of the FE Model. The idea was to handle how the system assigned meaning to words and looked at word connectivity. There are three main tasks of this level: (1) Assign word “bases power” (or keyness), (2) Assign a fuzzy meaning that is based on a word’s context and (3) Determine the level of confidence in how much the system understands how each word is being used. Given the wide array of definitions that a particular word can have, sometimes the appearance of a word too often creates more ambiguity. This is evident in some of the examples in the *Results and Discussion* section.

The second learning aspect is present in the way the system performs analysis looking at a word's effect on a particular chakra. The meaning of word is represented by the set of words that make up a particular word's context. For example, in the example from before, "Grass is green. Green is a nice color. Green makes me happy! But colorless green ideas sleep furiously", the context of the word "green" in the entire text is

```
SET ([ "FURIOUSLY", "ME", "COLORLESS", "A", "HAPPY", "IS", "IDEAS", "GRASS", "NICE", "BUT",  
"SLEEP", "COLOR", "MAKES", "GREEN" ])
```

However, in each sentence containing the word, all of these words are not considered. In the first sentence, the meaning of "green" would, therefore, be

```
SET ([ "GRASS", "IS" ])
```

Each word in a particular "target word's" meaning is used to determine chakra effect positively or negatively using the fuzzy meaning of the individual word as the magnitude of effect. The robustness of the system is shown in situations where not all of the words in the target word's meaning are tagged to a known chakra. In these cases, the word is simply not considered. This level of the system acts as the meaning engine. Many more features will be added to this level to result in each word attaining a specific definition based on what the system knows about the word's context and some real – world knowledge that the system will learn through human interaction. An improvement is discussed during in the *Discussion* section on how to intuitively learn by analyzing different situations.

LEVEL 2 – EVENT MODELING

Finally, the defining element of the system resonates the ideas explained concerning *Actions* (*FE element three*), *Intelligence*, *Energy* and *Feature Identification*. The first step performed by the system and the weakest link of the entire system is sentiment analysis. As previously stated, each word is tagged to positively or negatively influence each chakra. This method was chosen only as a proof – of – concept to give the system a particular perspective from which each text can be evaluated. Referring back to the FE Model, the *Attributes* element is meant to analyze the text from an objective perspective. However, moving on to the *Actions* element, the possibilities of what the meanings can cause are examined. These different possibilities will be different depending on what the system knows to be true. Ideally, the system would have a few methods of determining perspective.

The text is abstracted into the seven characteristics as well as an associating “chakra level” which is a measure of the “meaningfulness” of the text. A more “meaningful” text expresses more ideas. The last metric the system calculates is the final confidence in everything it has performed up until this point. These eight parameters are what define the system’s understanding of a text. To be able to understand different lengths of text on a more equal scale, the system obtains a distribution of the chakras. Comparing a 1000 – word text to a 10 – word text, the amount of information communicated in each text will be evident in the chakra level. However, to understand if the individual chakras of each text are similar, the system needs to “normalize” these metrics in some way. This is achieved through the following process:

1. Calculate the mean of all of the chakras for a particular text. This is representative of the “average amount of energy” a person exerts in a single aspect of life.
2. Calculate the standard deviation $\sigma = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}}$.
3. Use the normal distribution (or “bell curve”) to determine the percentile in which each chakra resides. This is a measure of how much energy a person chose to exert in a particular aspect of life relative to how much energy the person “could have” exerted.

Through this normalization method, the system can compare a measure of the “intent” or a perceived realized exertion of energies between two completely independent texts. Using these normalized values, the “Event Feature Matrix” as described in Table 17 can be built. Given that a text is categorized as being from a certain group of texts, the similarities and differences in those texts can be aggregated. Similarities will result in highly positive or highly negative values in the matrix; whereas differences will neutralize or counteract each other to result in significantly lower values closer to zero. This analysis can be expanded and is explained more in the *Future Work* section.

To get an overview of the system is organize, “settings.py” is examined as it defines an outline of all of the parameters that the system considers. The first parameter is the abbreviation length as it determines the system’s understanding of sentences,

```
6
7 ABBREVIATION_LENGTH = 3
8
```

Next, the system needs to understand if it has the ability to communicate with the outside world (i.e. to look up word definitions that are not in its local database). Along with this, the system needs to know if there is a human present that it can reach out to for help (i.e. to tag words that are not already known in its database),

In order to perform its input categorization and tag certain strings into a particular category, the regular expressions defined in Table 8 need to be programmed (apart of identifying those groups, the system also identifies xml tags and data formats with regular expressions). In order to develop and test the expression, regexr.com proved to be a very useful tool. Also note that each expression is matched with case insensitivity, multiline expressions and Unicode characters. The system takes advantage of tagging variables to improve debugging and readability tasks,

In order to properly identify words in context, the system separates all known special characters (i.e. it translates “(this” into “(this”). Since the system considered hyphenated words as a “new” word, the system encountered some problems with phrases such as “this-thing-of-a-thing-thing”,

```

56
57 # ("-", " ") doesn't account for hyphenated words
58 SPECIAL_CHAR = ["(", ")", "{", "}", "[", "]", "$", "%", "^", "&", "*", "-", "=", "+",
    ">", "<", ":", " ", "\\", "\\", "/", "\xa0", "â€œ", "â€", "@", "!", "..."]
59 SEPARAT_CHAR = [("(", " "), (")", " "), ("{" , " "), ("}" , " "), ("[" , " "), ("]" , " ")
    , (" , " "), ("=" , " "), ("<" , " "), (">" , " "), (":" , " "), ("_" , " "), ("\xa0" ,
    " "), ("â€œ" , " "), ("â€" , " ")]#, (" ", " ")
60

```

The system's lower level memory for Levels 0 and 1 are represented as,

```

60
61 ## Memory
62 ABBREVIATIONS = {}
63 HOMOGRAPH = {}
64 NHOMOGRAPH = {}
65 N_ABBREVIATIONS = []
66 DICTIONARY = {}
67

```

In order to save this memory within a database or a local file, some of the information is recoded. These encodings contain lists of sets where the one element of each set is being replaced by the other element,

```

70
71 ## Encodings / Recodings
72 # Homographs
73 HOMO_ENCODING = [("'", "~"), (" ,", "/")]
74 HOMO_RECODING = [("'", ""), ("\""", ""), ("[" , ""), ("]" , "")]
75
76 UTF_ENCODING = [("\'", "&#8221;"), ("\"'", "&#8220;"), ("'", "&#8217;"), ("&" , "&#8211;"), ("-" , "&#8211;"), ("'" , "&#8216;"), ("..." , "&#8230;")]
77 DATABASE_ARR_RECODING = [("frozenset" , ""), ("(" , ""), (")" , ""), ("'" , "\"")], #,
    ("set" , "")]
78

```

The next set of data is to perform some of the corpus analysis,

```

80
81 TYPES = 'types'
82 TOKENS = 'tokens'
83 ▼ TYPETOKEN = {
84     TYPES : 0,
85     TOKENS : 0
86 }
87 WORDLIST = {}
88

```

To organize its knowledge into a database, the system tracks two tables of information. The first concerns word definitions where it stores each word it encounters with the definition that it retrieved from an external source as well as the number of times the system encountered each word. The more times the system sees a word, the more confident

it can be that it has seen most of the ways in which that word is used. There's no definition in the current system as to a fuzzy control for this parameter as yet. It was designed for future work purposes,

```

89
90  ## Database configurations
91  DATABASE_CONNECTION = None
92  DEF_TABLE = "definitions_nlp"
93  DEF_TABLE_COLS = ('word', 'definition', 'frequency')
94
95  CHAKRA_TABLE = "chakra_sentiment"
96  CHAKRA_TABLE_COLS = ('chakra', 'pwords', 'nwords', 'qwords')
97

```

Note: “pwords” represents words that have a positive effect on a chakra; similarly, “nwords” are words that have no effect on a chakra; “qwords” have a negative effect. The neutral category was not used in this version of the system, but it was designed with the future in mind.

In order to look up definitions on Dictionary.com, a few specific html components needed to be defined,

```

97
98  ## Dictionary keys and settings
99  UPDATE_DEFINITIONS = False
100  NON_BRITISH = True
101  REA = "real_word"
102  POS = "part_of_speech"
103  NUM = "definition_number"
104  DEF = "definition_content"
105  NOT_FOUND = "no_result_found"
106  CANNOT_CONNECT = "cannot connect to internet"
107

```

The POS tags and categories defined in Table 11 for fuzzification are defined here,

```

110
111  ## Base word powers (w/ descriptors)
112  FF = ["DT", "EX", "IN", "LS", "RP", "TO"]
113  LC = ["POS", "PRP", "PRP$"]
114  CC = ["CD", "JJ", "NN", "NNS", "RB", "VB", "VBD", "VBG", "VBN", "VBP", "VBZ"]
115  HC = ["CC", "JJR", "JJS", "MD", "PDT", "RBR", "RBS"]
116  UU = ["FW", "NNP", "NNPS", "UH", "WDT", "WP", "WP$", "WRB"]
117  FFWORD = 1.0
118  LCWORD = 2.2
119  CCWORD = 3.0
120  HCWORD = 3.8
121  UUWORD = 5.0
122

```

Specifically, with defining the contexts for words as well as the definitions for words, the case sensitivity was taken into account. It was deemed that the system operated better without considering the case of words, especially with smaller texts,

```

122
123 CASE_INSENSITIVE = True
124 LOWERCASE = (lambda x: x.lower() if CASE_INSENSITIVE else x)
125 UPPERCASE = (lambda x: x.capitalize() if not CASE_INSENSITIVE else x)
126 UNION = (lambda x: x if type(x) != tuple else x[0]+x[1])
127 ZERO = (lambda x: 1 if x == 0 else x)
128

```

Defuzzification of the confidence for each word was defined with a lookup dictionary. Depending on the degree of overlap of each part of the confidence level, the “FUZZY_KEYNESS_CONFI” defines the boundaries of each confidence level,

```

128
129 ## FUZZY Labels
130 FUZZY_LOW = "low"
131 FUZZY_MED = "med"
132 FUZZY_HIG = "high"
133
134 FUZZY_EX = "extreme"
135 FUZZY_EW = "extra"
136 FUZZY_CR = "critical"
137 FUZZY_EN = "enduring"
138 FUZZY_VU = "vulnerable"
139 FUZZY_NT = "not_timely"
140 FUZZY_LC = "least_concern"
141
142 FUZZY_KEYNESS_CONFI = [0.0, 0.1, 0.3, 0.4, 0.7]
143 ▼ CONFIDENCES = {
144     FUZZY_LC : 7.14,
145     FUZZY_NT : 21.43,
146     FUZZY_VU : 35.71,
147     FUZZY_EN : 50.00,
148     FUZZY_CR : 64.29,
149     FUZZY_EW : 78.57,
150     FUZZY_EX : 92.86
151 }
152

```

There are three dictionaries of chakras associated with a single text sample, representing positive, neutral and negative effects respectively. The reason each was considered independently was to isolate the perspectives described in *Implementation Details: Level 2 – Event Modeling*. It should also be noted that is another category of words identified, “negation chakra.” These words include those such as “not”, “although”, “un-“, “-less”, to inverse the effect of a word (e.g. a positive effect will be taken as a negative and vice versa). The degree to which each word is negated is a function of how close each word is in context. This is performed using n-grams (i.e. in “This is not a good thing”, the word “not” makes the sentiment of the sentence more bad than good. Since not is two words away from good, its negating effect on good is less than its negating effect on the word “a.”). When assigning word effect (or “sentiment”), this negation chakra is considered but it is not its own chakra that represents meaningful data about a text,

```

164
165 CHAKRA = [EARTH, WATER, FIREW, HEART, SOUND, LIGHT, COSMI, NOT_C, CONFI, LEVEL]
166 RELEV = [EARTH, WATER, FIREW, HEART, SOUND, LIGHT, COSMI]
167
168 PCHAKRA = {
169     EARTH : 0,
170     WATER : 0,
171     FIREW : 0,
172     HEART : 0,
173     SOUND : 0,
174     LIGHT : 0,
175     COSMI : 0,
176     CONFI : 0,
177     LEVEL : 0
178 }
179 NCHAKRA = { }
189 }
190 QCHAKRA = { }
200 }
201

```

Chakras have the possibility of being “blocked” and while this system did not have a proper way of understanding how a chakra can be blocked, the state of whether a chakra can be changed is tracked by the system,

```

204
205 PSTATE = {
206     EARTH : True,
207     WATER : True,
208     FIREW : True,
209     HEART : True,
210     SOUND : True,
211     LIGHT : True,
212     COSMI : True
213 }
214 NSTATE = { }
222 }
223 QSTATE = { }
231 }
232

```

While performing analysis of word effect, the system keeps a local dictionary of words that effect each chakra in a positive or negative manner. This is to reduce the number of requests sent to the database server. It also keeps a history of the investigations of each text in one of two dictionaries depending on the way in which an event is understood (Note: the keys for those history dictionaries are the filenames of each text sample),

```

232
233 CHAKRA_INFLUENCE = {
234     EARTH : [],
235     WATER : [],
236     FIREW : [],
237     HEART : [],
238     SOUND : [],
239     LIGHT : [],
240     COSMI : [],
241     NOT_C : []
242 }
243 CHAKRA_NONINFLUENCE = {}
252 }
253 CHAKRA_TEST_HISTORY = {}
254 CHAKRA_TRAIN_HISTORY = {}
255

```

One of the last groups of settings needed by the system are tags and values that represent the values of each chakra relative to the other chakras as defined in the *Feature Identification* section,

```

255
256 ## Event Modeling
257 LL_TAG = "low"
258 LM_TAG = "low_medium"
259 MM_TAG = "medium"
260 MH_TAG = "medium_high"
261 HH_TAG = "high"
262
263 LL = (LL_TAG, 1.1, (0,20))
264 LM = (LM_TAG, 0.7, (20,40))
265 MM = (MM_TAG, 0.3, (40,60))
266 MH = (MH_TAG, 0.7, (60,80))
267 HH = (HH_TAG, 1.1, (80,100))
268
269 EVENT_MODEL = None
270 EVENT_TAGS = [LL, LM, MM, MH, HH]
271 EVENT_WORDS = {}
272
273 INTERNAL = "internal"
274 EXTERNAL = "external"
275

```

The system tracks the number texts analyzed in a particular run and the status of each run using these variables,

```

278
279 ANALYZED = 0
280 RAN_OK = (lambda x: 1 if x == 0 else 0)
281

```

The absolute last set of settings are the possible xml tags that are defined in each corpus text sample. This is to inform the system of any miscellaneous data. In the current version, only the “CURRENTDIAGNOSIS” and “TEXT” tags are considered,


```

281
282  ## Tags
283  NAME = 'name'
284  AGE = 'age'
285  GENDER = 'gender'
286  OCCUPATION = 'occupation'
287  SELFDIAGNOSIS = 'self-diagnosis'
288  CURRENTDIAGNOSIS = 'current-diagnosis'
289  DATE = 'date'
290  TYPE = 'type'
291  LOCATION = 'location'
292  COLOR = 'color'
293  SURVIVAL = 'survival'
294  PLEASURE = 'pleasure'
295  WILLPOWE = 'willpower'
296  LOVE = 'love'
297  TRUTH = 'truth'
298  INSIGHT = 'insight'
299  EARTHLY = 'earthlyattachment'
300  LINK = 'link'
301  LINK2 = 'link2'
302  LINK3 = 'link3'
303  TEXT = 'text'
304

```

RESULTS AND DISCUSSION

As the shown by the *Corpus Analysis* section, the system is capable of making conclusions about “big – picture” ideas and concepts. However, the purpose of these “big – picture” analyzes are to understand specific situations in a more connected manner. The pinnacle of the system resides in the transparency and understandability of the system’s understanding of a particular text. One sample output will be discussed here; however, Appendix H contains 30 different conclusions that the system drew with an equal amount being from DRC.D, DRC.N and DRC.U. In order to provide full transparency for the results of the system, the list of tagged words in included in Appendix I. Please note that not every word in every example output was tagged. Only the tagged words were considered. As such, the understanding that system generates can be said to incomplete. A few of these examples are provided to show the versatility of the system.

The following sample text was obtained through the survey mentioned in the *Corpus Analysis* section. In this survey, the respondent was asked to quantify how much he/she resonated with each chakra. (These questions can be viewed in Appendix C.),

My experience related to criminal defense investigation is limited to the work I did while I was an intern for the Public Defender in Dependency Court. Under the close supervision of an Investigator, I contacted clients to ensure compliance with their

case plans and provided information for community resources. Additionally, I transcribed the Investigator's dictation for defense attorney reports. When necessary, I translated Spanish-language reports into English, and read and summarized Social Worker reports for the Investigator.

Initially, the system did not know about many of the words in the text because the topic was very specific. In order to show how the system's perspective of a particular text can change, a few metrics were tracked for this sample. The "growth" of the system can be seen in Table 22.

Table 22 Sample Output

	Overall	Reference	Iteration 1	Iteration 2	Iteration 3	Iteration 4	Percent Match (Overall)	Percentage Match (Reference)
<i>Earth</i>	0.6	Yes	0.7201	0.6898	0.5756	0.5624	94%	94%
<i>Water</i>	1	Yes	0.5678	0.5108	0.4134	0.4029	40%	40%
<i>Fire</i>	0.4	Yes	0.0832	0.1397	0.2604	0.2868	72%	72%
<i>Heart</i>	0.6	No	0.367	0.3213	0.2581	0.2615	44%	66%
<i>Sound</i>	0.8	Yes	0.4849	0.5169	0.5331	0.5305	66%	66%
<i>Light</i>	1	Yes	0.4939	0.4992	0.4078	0.4163	42%	42%
<i>Cosmic</i>	0	No	0.2636	0.1943	0.0999	0.0775	92%	8%
<i>Chakra Level</i>	-	-	287.68	270.28	105.22	3.05	-	-
<i># of Words Considered</i>	-	57	25	33	50	57	-	0
<i>Confidence</i>	-	-	33%	36%	40%	41%	-	-

The "Overall" column shows the author's response to the general questions which provides a baseline from which the author views his/her own life. The "Reference" column details whether the author believes this particular writing sample exhibited qualities relevant to each chakra. If the "Reference" column contains "yes", that means that this particular writing sample representative of the author's resonance of that chakra. Similarly, "no" would signify that the writing sample was representative of the inverse of the author's resonance of that chakra. Please also note that from column "Overall" to "Iteration 4", the values range from zero and one. A value of 0.5 represents a neutral value which means that the person is exerting about as much energy as he/she does on average. Values closer to zero or one tend to the positive and negative limits of a person's exertion of energy. Because "Overall" column is not neutral, the person can be immediately identified as out of harmony. As only one questions was asked to determine this value,

the severity of this identification is low. It is meant primarily as a proof-of-concept value. The same can be said about the “Reference” column.

Examining the “percentage match (overall)” column, the system seems like it is successful in getting the gist of how the author views him-/her-self. Concerning the Earth Chakra, the system highlights that the author can do more to be more successful in surviving life. This view is shared by the author as his/her belief is similar. An interesting conclusion can be drawn from the “Cosmic Chakra.” Generally, the author is a very attached person. However, he/she does not believe this fact is evident in this particular writing sample. The system does hold the person to his/her general understanding of him-/her-self as seen in the final iteration where the person exerts a value of 0.0775 which displays the person as very earthly attached. To explain this chakra a little more, a person is seen as attached if he/she considers themselves obligated (or “required”) to do certain things for the people or things in their life. A high Cosmic Chakra would exist when a person has freedom of choice and they can easily give up or let go of “more important” aspect of their life to handle other aspects their importance changes. Working in criminal defense is pretty demanding job and it’s hard to say that a person would be able to properly prioritize themselves when presented with difficult situations. Although this exact reasoning isn’t used by the system it is evident when you consider that the words, , were deemed most important in the text.

By showing the different iterations that the system performed considering a different number of words, how the system applies confidence can be understood at a high level. Even when the system considers all of the words in the text, its confidence remains low and this demonstrates that the system is aware that the number of words only marginally improves the confidence in understanding. If more metrics were included in the system to further disambiguate the meaning of words, a higher confidence can also be achieved. The chakra level emulates the overall power exerted by a person and is a measure of the meaningfulness of a particular text. It is interesting to note that this value decreases the more that becomes known about the text. This shows that the new words learned work against the energies already known. A neutral chakra level means that, when combined, all of the chakras cancel each other out. Each word does not affect each chakra in an equal manner. If one word appears in 10 sentences, it will impact chakras in a much greater way than another word that only appears in one sentence. In essence, the way in which each word is used with other words effects the chakra level. This is seen in this case where the chakras do not seem like they cancel each other out.

CONCLUSION

Besides the suggestion of the PLaN Framework, this paper introduces a methodology of understanding word meanings and word connectivity that borrows the ideas set forth by old theories while applying them in an innovative fashion. While the results are not exact in their meanings. The way in which these results are interpreted will determine the final decisions. At the current state, the system will be able to flag texts as exhibiting certain qualities. However, it does not suggest any particular event. The event model based on energy is capable of much greater expansion. By developing each element of the FE Model and PLaN Framework to completion, a proper understanding of language and, more specifically, idea communication can be achieved.

FUTURE WORK

As mentioned throughout the paper, there are many improvements that can be made to the system. All of the advances can be spoken about in terms of the PLaN Framework. Starting with Layer 1, this system currently only works with textual information. The next most important piece of information is speech as it is the most natural way to communicate language. By adding speech, a lot of new problems arise which include the proper recognition of phonemes and morphemes. There has been much work using NNs to improve the accuracy of systems; however, there is still much work to be done. With the inclusion of speech into the system, research needs to be carried out to understand exactly what prosody is and how to properly handle sounds that are indistinguishable. The inclusion of Layer 2 will make the system much more robust as real – world knowledge about certain phrases that are used and the different meanings that words express in different situations can be considered in the third layer. There is much that must be done in terms of language translation and character support. Many other languages consist of different grammars and idea structuring. Although the number of languages is finite, tackling this problem without hardcoding different language specifications would be ideal. It is very easier to construct a new language; as such, it should be easy for the system to recognize different languages with minimal computational effort.

The system is able to associate words; however, it does not know what each word means in the word's entirety. By combining this word "keyness" vector with the word associations referenced earlier in the paper, the system would be able to understand more about the text it is analyzing. This is part of what is necessary to ask the proper questions in the *Actions* element and form proper conclusions within the *Knowledge* element. The system was created to be able

to build upon Layers 1 and 2 while the third layer remains the same. Transforming the FE Model into a complete cycle would be one of the first steps to see the limits of what each element can accomplish.

One of the most important components to incorporate into the system is a “self – learning” algorithm which allows the system to learn about things through its own analysis. As humans, we are often left to “figure things out” by ourselves. There’s no guarantee that a human will figure it out properly; however, the human definitely figures out “a way.” Similarly, computers should be able to figure smaller things out by itself. What defines “smaller”? It depends on the size of the bigger thing and fuzzy logic will be able to handle this problem. However, it is arguable that humans do not even know what depression is to the point where they can identify it without error. As such, building different objective perspectives will be a large strength for computers.

REFERENCES

- [1] National Institute of Mental Health, "Suicidal Thoughts and Behaviors Among U.S. Adults," 2015. [Online]. Available: <https://www.nimh.nih.gov/health/statistics/suicide/index.shtml>. [Accessed October 2017].
- [2] National Institute of Mental Health, "Any Mental Illness (AMI) Among U.S. Adults," NIMH, 2015. [Online]. Available: <https://www.nimh.nih.gov/health/statistics/prevalence/any-mental-illness-ami-among-us-adults.shtml>. [Accessed October 2017].
- [3] Pew Research Center, "Public Trust in Government:1958-2017," American National Election Study, 1958 – 2012. [Online]. Available: <http://www.people-press.org/2017/05/03/public-trust-in-government-1958-2017/>, http://www.electionstudies.org/nesguide/toptable/tab5a_1.htm. [Accessed November 2017].
- [4] B. Felbo, A. Mislove, A. Søgaard, I. Rahwan and S. Lehmann, "Using millions of emoji occurrences to learn any-domain representations for detecting sentiment, emotion and sarcasm," in *Proceedings of Empirical Methods on Natural Language Processing (EMNLP)*, Association for Computational Linguistics, Copenhagen, Denmark, 2017.
- [5] B. Felbo, "What can we learn from emojis?," MIT Media Lab, 2017. [Online]. Available: <https://www.media.mit.edu/posts/what-can-we-learn-from-emojis/>. [Accessed 2017].
- [6] M. Abdul-Mageed and L. Unga, "EmoNet: Fine-Grained Emotion Detection with Gated Recurrent Neural Networks," 2017. [Online]. Available: <http://www.aclweb.org/anthology/P17-1067>. [Accessed November 2017].
- [7] D. Tang, F. Wei, N. Yang, M. Zhou, T. Liu and B. Qin, "Learning Sentiment-Specific Word Embedding for Twitter Sentiment Classification," in *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics*, Baltimore, MD, June 2014.
- [8] A. Turing, "Computing Machinery and Intelligence," *Mind* Volume LIX Issue 236 pp. 433-460, October 1950. [Online]. Available: <https://doi.org/10.1093/mind/LIX.236.433>. [Accessed May 2018].
- [9] K. Colby, S. Webe and F. Hilf, "Artificial Paranoia," *Artificial Intelligence*, Volume 2 Issue 1, January 1971. [Online]. Available: https://www.csee.umbc.edu/courses/671/fall13/resources/colby_71.pdf. [Accessed March 2018].
- [10] M. Mauldin, "CHATTERBOTS, TINYMUDS, and the Turing Test Entering the Loebner Prize Competition," *Association for the Advancement of Artificial Intelligence Proceedings*, 1994. [Online]. Available: <https://pdfs.semanticscholar.org/bdd4/9b4a0b7de03b00412e3b807a855504e1d3af.pdf>. [Accessed April 2018].

- [11] C. Dennett, "Can Machines think?," NYU Archives, [Online]. Available: <http://www.nyu.edu/gsas/dept/philo/courses/mindsandmachines/Papers/dennettcanmach.pdf>. [Accessed February 2018].
- [12] V. Yu, L. Fagan, S. Bennett, W. Clancey, A. Scott, J. Hannigan, R. Blum, B. Buchanan and S. Cohen, "An Evaluation of MYCIN's Advice," *Journal of the American Medical Association* Volume 242, 1979. [Online]. Available: <http://www.aaapress.org/Classic/Buchanan/Buchanan33.pdf>. [Accessed May 2018].
- [13] Y. Wilks, "Engineering Natural Language: Theory, Processes and Applications," University of Sheffield, 1997. [Online]. Available: <http://staffwww.dcs.shef.ac.uk/people/Y.Wilks/research/index.html>. [Accessed April 2018].
- [14] Y. A. Wilks, *Grammar, Meaning and the Machine Analysis of Language*, Routledge and Kegan Paul, 1972.
- [15] E. C. a. Y. Wilks, *Computational Semantics, Fundamental Studies in Computer Science* Volume 4, North-Holland, 1976.
- [16] D. Fass and Y. Wilks, "Preference Semantics, III-Formedness, and Metaphor," *American Journal of Computational Linguistics*, Volume 9, Numbers 3-4, 1983. [Online]. Available: <http://www.aclweb.org/anthology/J83-3004>. [Accessed May 2018].
- [17] R. Schank, "Conceptual Dependency: A theory of Natural Language Understanding," *Cognitive Psychology*, vol. 3, pp. 552-631, 1972.
- [18] E. Roberts, C. Clabaugh, D. Myszewski and J. Pang, "History: The 1940's to the 1970's," Stanford University Computer Science Department Archives, [Online]. Available: <https://cs.stanford.edu/people/eroberts/courses/soco/projects/neural-networks/History/history1.html>. [Accessed May 2018].
- [19] J. Schmidhuber, "Deep learning in neural networks: An overview," *Neural Networks: The Official Journal of the International Neural Network Society, European Neural Network Society, and Japanese Neural Network Society* Volume 61, January 2015. [Online]. Available: <https://doi.org/10.1016/j.neunet.2014.09.003>. [Accessed April 2018].
- [20] D. G. L. R. M. Pedernana and S. G. García, "Smart sampling and incremental function learning for very large high dimensional data," *Neural Networks: The Official Journal of the International Neural Network Society, European Neural Network Society, and Japanese Neural Network Society* Volume 78, June 2016. [Online]. Available: <https://doi.org/10.1016/j.neunet.2015.09.001>. [Accessed December 2017].
- [21] G. A. Miller, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," in *The Psychology of Communication: Seven Essays*, New York, NY, Basic Books, Inc., Publishers, 1956, p. pp. 81 – 96.
- [22] J. Cutting, *Pragmatics: A Resource Book for Students*. 3th Edition, New York, NY: Routledge English Language Introductions, 2015.

- [23] B. B. KACHRU, "World Englishes and applied linguistics," March 1990. [Online]. Available: <https://doi.org/10.1111/j.1467-971X.1990.tb00683.x>.
- [24] Princeton University, "About WordNet.," WordNet., 2010. [Online]. Available: <https://wordnet.princeton.edu/>. [Accessed 2018].
- [25] "What is language?," Nord universitet, [Online]. Available: [https://www.uio.no/studier/emner/hf/ikos/EXFAC03-AAS/h05/larestoff/linguistics/Chapter%201.\(H05\).pdf](https://www.uio.no/studier/emner/hf/ikos/EXFAC03-AAS/h05/larestoff/linguistics/Chapter%201.(H05).pdf). [Accessed May 2018].
- [26] Dictionary.com, "Definition," Dictionary.com, 2018. [Online]. Available: <http://www.dictionary.com/browse/>.
- [27] Thesaurus.com, Thesaurus.com, 2018. [Online]. Available: <http://www.thesaurus.com/browse/>. [Accessed May 2018].
- [28] N. S. Nise, Control Systems Engineering 6th Edition, Jefferson City: R. R. Donnelley, 2011.
- [29] C. C. H. R. Nicholas Kumia, "Analysis of Impulsive Natural Phenomena through Finite Difference Methods - A MATLAB Computational Project - Based Learning," Proceedings of Latin American and Caribbean Consortium of Engineering Institutions (LACCEI), July 2015. [Online]. Available: <http://www.laccei.org/LACCEI2015-SantoDomingo/StudentPapers/SP015.pdf>. [Accessed January 2018].
- [30] L.A.Zadeh, "Fuzzy sets*," Information and Control Volume 8, Issue 3, Pages 338-353, June 1965. [Online]. Available: [https://doi.org/10.1016/S0019-9958\(65\)90241-X](https://doi.org/10.1016/S0019-9958(65)90241-X). [Accessed March 2018].
- [31] L. A. Zadeh, "The concept of a linguistic variable and its application to approximate reasoning—I," Information sciences, Volume 8, Number 3, pp. 199-249, January 1975. [Online]. Available: <https://pdfs.semanticscholar.org/74d5/e9445c8154c8a77cc71487a4c5cfd9a9588c.pdf>. [Accessed April 2018].
- [32] G. A. Miller, "Computers, Communication and Cognition," in *The Psychology of Communication: Seven Essays*, Manchester, Basic Books, Inc. Publishers, 1964, pp. 93-124.
- [33] E. L. E. K. Steven Bird, Natural Language Processing with Python, O'Reilly Media Inc, 2009.
- [34] University of Pennsylvania Linguistics Department, "Alphabetical list of part-of-speech tags used in the Penn Treebank Project," University of Pennsylvania, 2003. [Online]. Available: https://www.ling.upenn.edu/courses/Fall_2003/ling001/penn_treebank_pos.html. [Accessed September 2017].
- [35] D. Olsen, "Fuzzy Logic Control in Autonomous Robotics: Investigating the Motorola MC68HC12 on a Line Following Robot," Department of Electrical and Computer Engineering, University of Minnesota Duluth, [Online]. Available: <http://www.d.umn.edu/~olse0203/FuzzyControl/FuzzyPaper.html>. [Accessed May 2018].

- [36] C. Spearman, "General Intelligence," *The American Journal of Psychology*, Vol. 15, No. 2 (Apr., 1904), pp. 201-292, April 1904. [Online]. Available: <http://www.jstor.org/stable/1412107>. [Accessed November 2017].
- [37] L. L. Thurstone, *Primary Mental Abilities*, Chicago: Univ. of Chicago Press, 1938.
- [38] H. Gardner, *Frames of Mind: The Theory of Multiple Intelligences*, New York: Basic Books, 1983.
- [39] R. J. Sternberg, "Components of human intelligence," *Cognition*, vol. 15, no. 1-3, pp. 1-48, 1983.
- [40] R. Kowalski, "Artificial Intelligence and Human Thinking," *Proceedings from Twenty-Second International Joint Conference on Artificial Intelligence*, July 2011. [Online]. Available: <https://www.ijcai.org/Proceedings/11/Papers/013.pdf>. [Accessed April 2018].
- [41] C. Moskowitz, "Fact or Fiction?: Energy Can Neither Be Created Nor Destroyed," *Scientific American*, August 2014. [Online]. Available: <https://www.scientificamerican.com/article/energy-can-neither-be-created-nor-destroyed/>. [Accessed March 2018].
- [42] Merriam-Webster, "Learner's Dictionary," 2018. [Online]. Available: <http://learnersdictionary.com>.
- [43] U. Cambridge, "Cambridge Learner's Dictionary," 2018. [Online]. Available: <https://dictionary.cambridge.org/us/dictionary/learner-english>.
- [44] C. Gabrielatos, "Corpora and Language Teaching: Just a fling or wedding bells?," March 2005. [Online]. Available: <https://files.eric.ed.gov/fulltext/EJ1068106.pdf>.
- [45] Vocabulary.com, "Grass," 2018. [Online]. Available: <https://www.vocabulary.com/dictionary/>.
- [46] Dictionary.com, "Grass," 2018. [Online]. Available: <http://www.dictionary.com/browse/>.
- [47] M. Davies, "The Corpus of Contemporary American English (COCA): 560 million words, 1990-present," 2008-. [Online]. Available: <https://corpus.byu.edu/coca/>.
- [48] S. T. Gries, "Corpus linguistics and theoretical linguistics: A love - hate relationship? Not necessarily...," John Benjamins Publishing Company, 2010. [Online]. Available: http://www.linguistics.ucsb.edu/faculty/stgries/research/2010_STG_CorpLingLingTheory_IJCL.pdf.
- [49] T. X. R. T. Y. McEnery, *Corpus-based Language Studies: An Advanced Resource Book*, New York: Routledge, 2006.
- [50] J. Weizenbaum, "ELIZA – A Computer Program for the Study of Natural Language Communication Between Man And Machine," *Communications of the ACM* Volume 9 Number 1, January 1966. [Online]. Available: <https://doi.org/10.1145/365153.365168>. [Accessed December 2017].
- [51] S. B. –. Avi, *Conceptual Dependency*, Hempstead, NY: Hofstra University School of Engineering and Applied Science CSC274 Natural Language Processing, 2016.
- [52] D. H. a. A. D. Dristo, "A survey of intonation systems," 1998. [Online]. Available: <http://www.homes.uni-bielefeld.de/gibbon/Docs/1998HirstDiCristo.pdf>. [Accessed May 2018].

- [53] F. C. Bartlett, "Remembering: A Study in Experimental and Social Psychology," Cambridge University Press, 1932. [Online]. Available: <https://pdfs.semanticscholar.org/727e/7f158dc0839ef789e3cb99f3fc3f2e38e017.pdf>.
- [54] NLTK Project, "Natural Language Toolkit," NLTK Project, 2017. [Online]. Available: <https://www.nltk.org/>. [Accessed 2016-].

APPENDIX A

The limits of each element in the FE Model are blurry as there may be overlap depending on the exact words chosen to represent the idea. Information is a universal representation of bodies of information. Every piece of relevant information as to what is being conveyed should be contained within this element. The element is at 100% capacity when the information is whole and complete. This information should be dissected to smallest units possible to determine the attributes of the information; the “properties” that make that information unique. Two utterances of the same phrase may have completely different attributes depending on a host of different circumstances between the two. Actions always need to be taken to understand the world. Inaction is still a form of action. The purpose of the third element is to capture the underlying transformations of energy that this whole process is attempting to create. Even with the most specific information, there’s still information to be discovered and questioned. The “intelligence level” at which this element operates is dependent on the level at which information is presented. The transformations captured by actions ultimately result in a meaningful outcome. This reasoning is the foundation of the idea cycle. Without the need to communicate high – level knowledge, language would be significantly simpler and easier to understand. However, the world is not simple which calls for complicated structures of knowledge.

Information	Attributes	Actions	Knowledge
Words	Contextual Meaning	What ...?	Ideas
Phrases (sentences, paragraphs, essays, novels, books ...)	Expression	Where ...?	Theories
Concepts	Emphasis	When ...?	Beliefs
“Context”	Permanence	Who ...?	Values
...	Ambiguity	Why ...?	Emotions
	Flexibility	How ...?	Outcomes
	Cause	...	Conditions
	Purpose		...

	Meaning		
	Feelings		
	Effect		
	...		
“Bodies of Information”	“Properties”	“Transformations”	“Mindset”

APPENDIX B

List of rules to determine confidence level in the POWER of each word:

*If a word is not used often (**Low FREQ**) and that word is not very descriptive (**Low POS**) and the word is not very ambiguous (**Low NMP**) **then** the confidence level is **CR**.*

*If a word is not used often (**Low FREQ**) and that word is not very descriptive (**Low POS**) and the word is ambiguous (**Med NMP**) **then** the confidence level is **NT**.*

*If a word is not used often (**Low FREQ**) and that word is not very descriptive (**Low POS**) and the word is very ambiguous (**High NMP**) **then** the confidence level is **LC**.*

*If a word is not used often (**Low FREQ**) and that word is descriptive (**Med POS**) and the word is not very ambiguous (**Low NMP**) **then** the confidence level is **EN**.*

*If a word is not used often (**Low FREQ**) and that word is descriptive (**Med POS**) and the word is ambiguous (**Med NMP**) **then** the confidence level is **VU**.*

*If a word is not used often (**Low FREQ**) and that word is descriptive (**Med POS**) and the word is very ambiguous (**High NMP**) **then** the confidence level is **NT**.*

*If a word is not used often (**Low FREQ**) and that word is very descriptive (**High POS**) and the word is not very ambiguous (**Low NMP**) **then** the confidence level is **EX**.*

*If a word is not used often (**Low FREQ**) and that word is very descriptive (**High POS**) and the word is ambiguous (**Med NMP**) **then** the confidence level is **EW**.*

*If a word is not used often (**Low FREQ**) and that word is very descriptive (**High POS**) and the word is very ambiguous (**High NMP**) **then** the confidence level is **(CR+EN)/2**.*

*If a word is used often (**Med FREQ**) and that word is not very descriptive (**Low POS**) and the word is not very ambiguous (**Low NMP**) **then** the confidence level is **EN**.*

*If a word is used often (**Med FREQ**) and that word is not very descriptive (**Low POS**) and the word is ambiguous (**Med NMP**) **then** the confidence level is **VU**.*

*If a word is used often (**Med FREQ**) and that word is not very descriptive (**Low POS**) and the word is very ambiguous (**High NMP**) *then* the confidence level is **NT**.*

*If a word is used often (**Med FREQ**) and that word is descriptive (**Med POS**) and the word is not very ambiguous (**Low NMP**) *then* the confidence level is **CR**.*

*If a word is used often (**Med FREQ**) and that word is descriptive (**Med POS**) and the word is ambiguous (**Med NMP**) *then* the confidence level is **EN**.*

*If a word is used often (**Med FREQ**) and that word is descriptive (**Med POS**) and the word is very ambiguous (**High NMP**) *then* the confidence level is **VU**.*

*If a word is used often (**Med FREQ**) and that word is very descriptive (**High POS**) and the word is not very ambiguous (**Low NMP**) *then* the confidence level is **EX**.*

*If a word is used often (**Med FREQ**) and that word is very descriptive (**High POS**) and the word is ambiguous (**Med NMP**) *then* the confidence level is **EW**.*

*If a word is used often (**Med FREQ**) and that word is very descriptive (**High POS**) and the word is very ambiguous (**High NMP**) *then* the confidence level is **CR**.*

*If a word is used very often (**High FREQ**) and that word is not very descriptive (**Low POS**) and the word is not very ambiguous (**Low NMP**) *then* the confidence level is **EN**.*

*If a word is used very often (**High FREQ**) and that word is not very descriptive (**Low POS**) and the word is ambiguous (**Med NMP**) *then* the confidence level is **VU**.*

*If a word is used very often (**High FREQ**) and that word is not very descriptive (**Low POS**) and the word is very ambiguous (**High NMP**) *then* the confidence level is **NT**.*

*If a word is used very often (**High FREQ**) and that word is descriptive (**Med POS**) and the word is not very ambiguous (**Low NMP**) *then* the confidence level is **EW**.*

*If a word is used very often (**High FREQ**) and that word is descriptive (**Med POS**) and the word is ambiguous (**Med NMP**) *then* the confidence level is **CR**.*

*If a word is used very often (**High FREQ**) and that word is descriptive (**Med POS**) and the word is very ambiguous (**High NMP**) *then* the confidence level is **EN**.*

*If a word is used very often (**High FREQ**) and that word is very descriptive (**High POS**) and the word is not very ambiguous (**Low NMP**) *then* the confidence level is **EX**.*

*If a word is used very often (**High FREQ**) and that word is very descriptive (**High POS**) and the word is ambiguous (**Med NMP**) *then* the confidence level is **EW**.*

*If a word is used very often (**High FREQ**) and that word is very descriptive (**High POS**) and the word is very ambiguous (**High NMP**) *then* the confidence level is **CR**.*

APPENDIX C

Survey Model and Procedure Specifications

Participants

There is no targeted participant group. The survey may be taken by any who wish to complete it. The aim is to obtain enough diverse respondents to make the demographic information evenly-distributed or highly representative in some respects (either gender, age or geographic location). In this specific case, a representative group of participants would consist of an evenly-distributed gender sample with individuals primarily aged 18-35 living in North America with diverse occupations and diverse favorite colors.

Materials

- Anonymous survey (available at <https://goo.gl/forms/UZT3Buk6v1Wx7k7x1>)

Design

This design method utilizes a series of well thought-out survey questions to obtain representative data for the specified research questions. The survey is formulated to ensure that no personally identifiable information (PII), including but not limited to name, email, physical address and IP address, will be collected or considered in the analysis. In addition, any information that is not the writing sample will be considered “meta-data” as it is not considered in the analysis. The “demographic section” of the survey is to determine representativeness and the rest of the questions are used as a baseline to compare the results of the analysis.

Procedure

1. Create survey reflecting research questions, specifically which event the system is attempting to predict.
2. Select an appropriate participant group, if applicable.
3. Distribute survey among participants anonymously and allow them to fill out the survey on their own time.
4. Collect surveys and analyze results.

System relevant questions as referenced in the *Results and Discussion* section: (These were meant to be general as the respondent's general behavior is captured.)

Do you get scared often? *

	1	2	3	4	5	
No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Yes

Are you generally a happy person? *

	1	2	3	4	5	
No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Yes

How strong is your will? *

	1	2	3	4	5	
Not very	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very

Are you a loving person? *

	1	2	3	4	5	
No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Yes

Do you tell lies sometimes because they don't hurt as much as the truth? *

	1	2	3	4	5	
No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Yes

How much do you think about things? (Decisions, life, past, present, future...) *

	1	2	3	4	5	
Not often	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very often

Are you attached to people or things? *

	1	2	3	4	5	
No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Yes

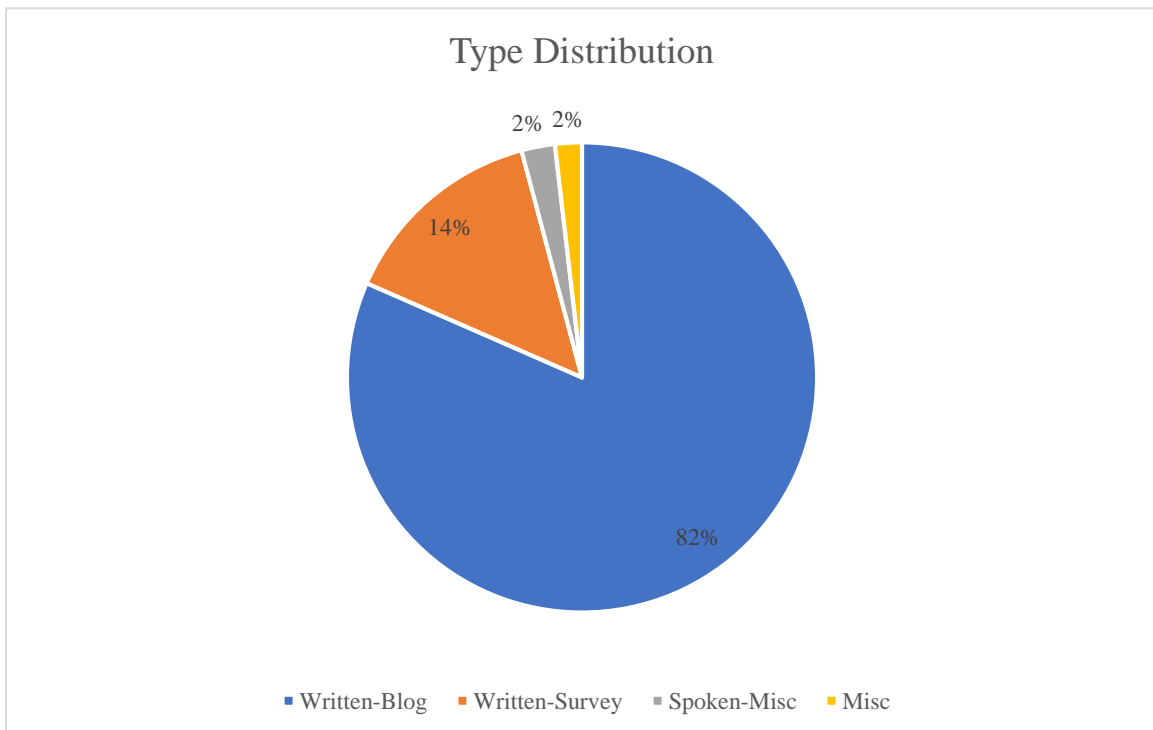
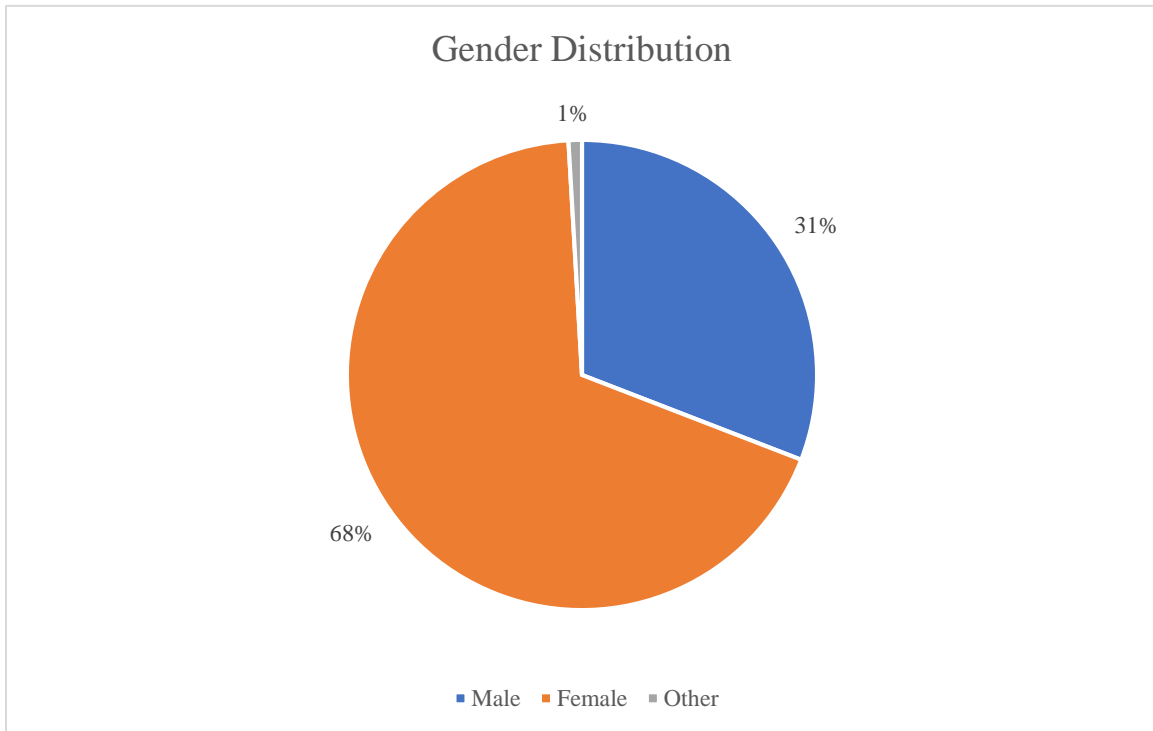
After providing the text sample, the final question was looking to obtain a measure of the “perspective” of the author:

How would you describe yourself when you wrote this? (Select all that apply) *

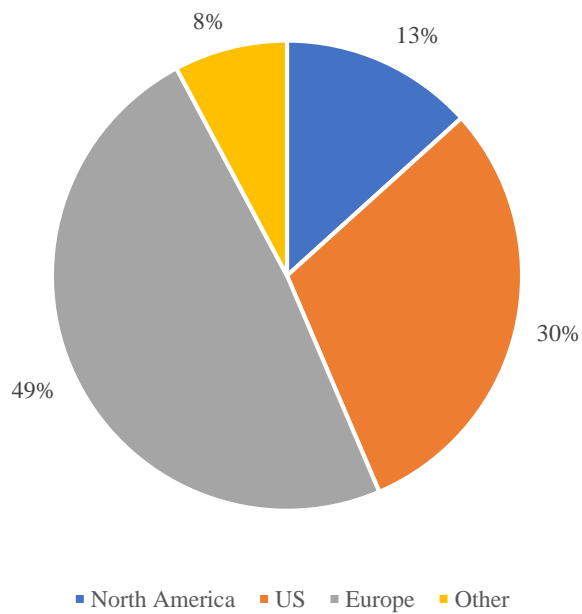
- ☐ Enduring
- ☐ Happy
- ☐ Strong-willed
- ☐ Loving
- ☐ Truthful
- ☐ Insightful
- ☐ Attached
- ☐ None of the above

APPENDIX D

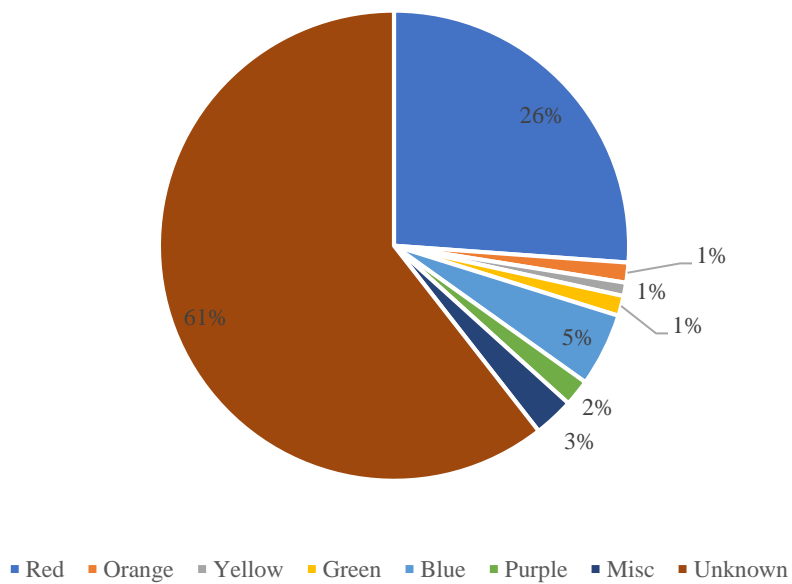
These graphs show distributions across DRC collectively.



Location Distribution



Favorite Colors



APPENDIX E

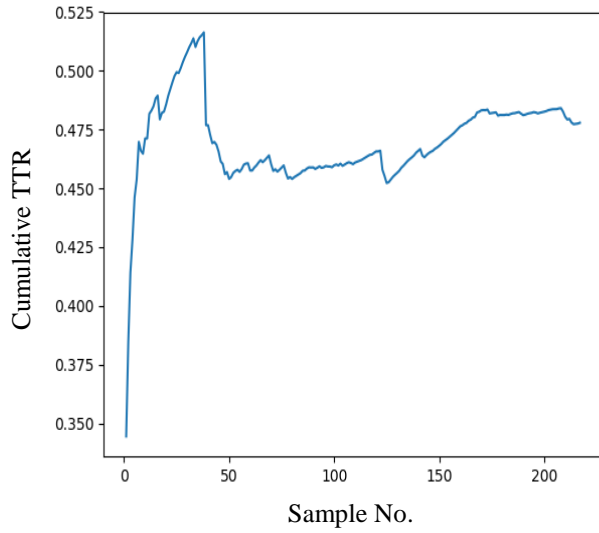


Figure 16 A DRC TTR

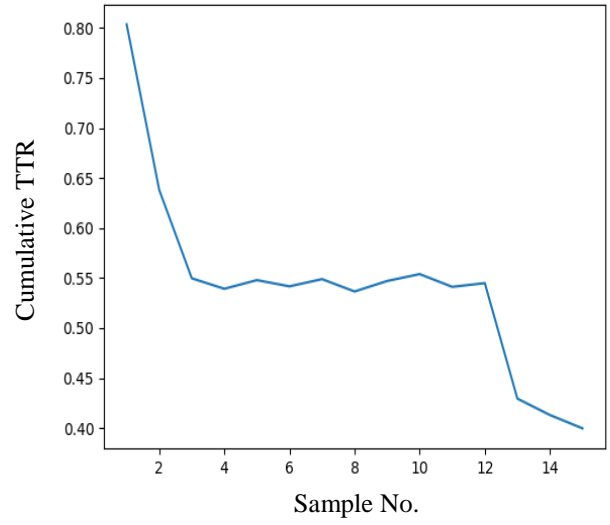


Figure 16 B DRC.N TTR

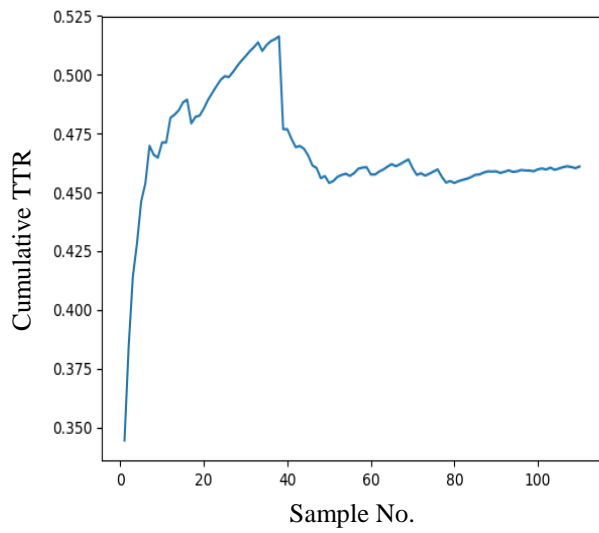


Figure 16 C DRC.D TTR

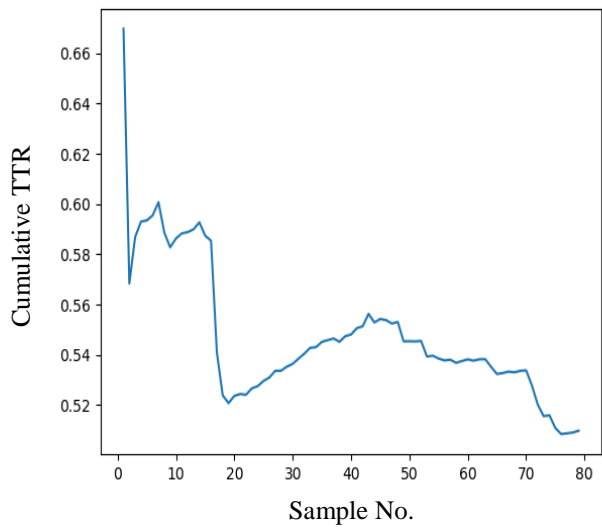


Figure 16 D DRC.U TTR

APPENDIX F

Top Ten words in each corpus,

DRC	DRC.D	DRC.N	DRC.U
the	i	to	the
i	the	i	i
to	to	the	to
and	and	and	and
a	a	a	a
of	my	of	of
my	of	that	in
in	that	my	it
that	in	you	that
it	it	it	my

Normalized Frequency of the Top Ten Words (per 1000 words),

DRC	DRC.D	DRC.N	DRC.U
~42	~52	~37	~47
~41	~40	~37	~27
~30	~33	~32	~27
~29	~32	~28	~25
~23	~20	~21	~25
~20	~18	~20	~24
~14	~16	~17	~14
~14	~14	~16	~13
~14	~14	~16	~12
~13	~14	~11	~10

APPENDIX G

The project structure is shown below. Most of the working files are in the root directory. The “Corpus” directory holds all of the text samples analyzed by the system and is divided into three subdirectories for easy identification. The “database” directory contains all code to connect to and manipulate the PostgreSQL database along with configurations. Lastly, the “files” directory holds files that act as the systems “RAM” and nonvolatile storage.

```
1 /
2   checklinecount.py
3   download_random.py
4   print_project_tree.py
5   settings.py
6   test.py
7   testcr.py
8   uni_func.py
9   _0_0_input_normalization.py
10  _0_1_statistic_appraise.py
11  _0_2_intelli_in.py
12  _0_3_contextual_appraise.py
13  _0_4_corpus_representativeness.py
14  _1_0_consciousness.py
15  _1_1_meaning_gathering.py
16  _2_0_event_modeling.py
17  _2_1_chakra_control.py
18  _2_2_event_support.py
19 Corpus/
20   DD/
21     corpus1.xml
22     corpus100.xml
23     corpus101.xml
24     corpus102.xml
25     corpus103.xml
26     ...
27   ND/
28     corpus12.xml
29     corpus13.xml
30     corpus176.xml
31     corpus177.xml
32     corpus178.xml
33     ...
34   NN/
35     corpus10.xml
36     corpus111.xml
37     corpus112.xml
38     corpus113.xml
39     corpus114.xml
40     ...
41 database/
42   config.py
43   database_ex.ini
44   database_in.ini
45   db_func.py
46   __init__.py
47 files/
48   abbrev.txt
49   history.txt
50   homographs.txt
51   homographs_not.txt
52   model_pfeatures.txt
53   nabbr.txt
54   projectstructure.txt
55   wordlist.txt
56 special_extended_blogs/
57   corpus1000.xml
58   corpus1001.xml
59   corpus1002.xml
60   corpus1003.xml
61   corpus1004.xml
62   ...
```

Level 0 analysis is summarized as,

```
4
5 import _0_1_statistic_appraise as sap
6 import _0_2_intelli_in as ii
7 import _0_3_contextual_appraise as cap
8 from settings import *
9
54
55 def analyze(self, special=None):
56     self.individual_word_count, self.total_word_count = sap.wordcount(self.text[
        ALPHA_CHAR],1)
57     if special == None:
58         self.text[ABBRE_CHAR] = sap.defineabbreviations(self.text[ABBRE_CHAR])
59         self.text[SENTE_CHAR] = fixsentences(self.text[ABBRE_CHAR], self.text[
            SENTE_CHAR])
60     # self.text.pop(ABBRE_CHAR, None)
61     self.contexts = cap.getcontexts(self.text, self.original)
62
```

Where

self.individual_word_count = the frequency of each word (Dictionary; *word* : *frequency*)

self.total_word_count = the total number of words (Integer)

self.text = the input categorization (Dictionary; *category* : *results*)

self.contexts = the contexts of each word (Dictionary; *word* : *list of contexts*)

The special parameter was introduced to improve the speed of general corpus methods, such as extracting word lists.

An important function is “getcontexts” which is defined below,

```
8
9 def getcontexts(wc, ori):
10     contexts = {}
11
12     # For each word in the input text
13     for w in wc[SET.ALPHA_CHAR]:
14         # For each category: sentences, quotes, questions ...
15         for sequence in SET.EXP_CHAR[1:]:
16             # For each word in "context"
17             for c in wc[sequence]:
18                 w = getidx(w)
19                 c = getidx(c)
20                 # if the word is in the "context"
21                 if (sap.wordify(w) in sap.wordify(c)) or (sap.wordify(w)[-1] in
                    recursivereplace(sap.wordify(c),SET.SEPARAT_CHAR)):
22                     w = w.strip()
23                     if w in contexts.keys():
24                         # Add to existing "contexts" of that word
25                         contexts[w] = contexts[w] + [(c,sequence,findposition(ori,c))]
26                     else:
27                         # Create new list of "contexts" of that word
28                         contexts[w] = [(c,sequence,findposition(ori,c))]
29
30     for c in contexts.keys():
31         contexts[c] = list(set(contexts[c]))
32
33     return contexts
34
```


Level 1 analysis can be summarized as,

```
13
14 def getfuzzymeaning(expressions, wcontext, wcount, tcount):
15     case = SET.LOWERCASE
16     keyness = assignkeyness(wcontext, wcount, tcount, case, normal=False)
17     keyness_confidence = keynessconfidence(keyness, case)
18
19     real_words = {}
20     fuzzym = {}
21     word2 = None
22     case = SET.LOWERCASE
23     progtotal = len(wcontext.keys())
24
25     print("\tCalculating highest word connections...\t\t\t")
26     for i,word in enumerate(wcontext.keys()):
27         printwordupdate(((i+1)/progtotal)*100, word)
28         real_words[case(word)] = sorted([i.lower() for i in ca.getwordsfrom(wcontext[
29             word])])
30         real_words[case(word)] = sortbasedonb(combinelikevalues([[keyness[case(wor)]]
31             0] for wor in real_words[case(word)]], real_words[case(word)]))
32
33         time.sleep(SET.SLOWDOWN)
34
35     print("\tFuzzifying meaning...\t\t\t")
36     for i,word in enumerate(wcontext.keys()):
37         printwordupdate(((i+1)/progtotal)*100, word)
38         if case(word) in fuzzym.keys():
39             fuzzym[case(word)] = fuzzym[case(word)] + (real_words[case(word)],
40                 wcontext[word])
41         else:
42             fuzzym[case(word)] = (real_words[case(word)], wcontext[word])
43
44         time.sleep(SET.SLOWDOWN)
45
46     # [print(fuzzym[word]) for word in fuzzym.keys()]
47
48     return fuzzym, keyness_confidence
```

The first step is to define what case sensitivity the system is considering as the way in which assigns meaning will be affected. Each word is then assigned a base “fuzzy power.”

```
47
48 ▼ def assignkeyness(wcontext, wcount, tcount, case, normal=False):
49     keyness = {}
50     progtotal = len(wcontext.keys())
51
52     print("Obtaining word keyness...\t\t\t")
53 ▼ for i,word in enumerate(wcontext.keys()):
54     printwordupdate(((i+1)/progtotal)*100, word)
55     keyness[case(word)] = mg.getexplicitmeanings(word.lower(), wcount[word.lower()],
56         tcount, fuzzifykeyness)
57
58     # [print(k, "\t", keyness[k], "\t", wcount[k.lower()]) for k in keyness.keys()]
59
60     return keyness
```

In order to do this, it needs to determine the three metrics of **FREQ**, **POS** and **NPM**,

```
10
11 def getexplicitmeanings(word, wordcount, tcount, fuzzification):
12     if word.lower() not in SET.HOMOGRAPH.keys():
13         SET.HOMOGRAPH[word.lower()] = []
14     if word.lower() not in SET.NHOMOGRAPH.keys():
15         SET.NHOMOGRAPH[word.lower()] = []
16
17     base_power = cfuid(word)
18     amplifier = wordcount
19     damper = (lambda x: 1 if (x == SET.NOT_FOUND) or (x == SET.CANNOT_CONNECT) else
20               len(x))(getdefinitions(word))
21
22     # print(word, "\t", base_power, "\t", amplifier, "\t", damper)
23     return fuzzification(base_power, amplifier, damper, tcount), base_power, amplifier
    , damper
```

POS is acquired using the built-in tool of the Natural Language Toolkit [33],

```
82
83 def cfuid(word):
84     pos = nltk.pos_tag([word])
85
86     if pos[0][1] in SET.FF:
87         return SET.FFWORD
88     if pos[0][1] in SET.LC:
89         return SET.LCWORD
90     if pos[0][1] in SET.CC:
91         return SET.CCWORD
92     if pos[0][1] in SET.HC:
93         return SET.HCWORD
94     if pos[0][1] in SET.UU:
95         return SET.UUWORD
96
```

The frequency was already calculated in Level 0, so that information was passed on to Level 1. In case there is a problem with looking up the definition of a word (locally or externally), the default **NPM** is 1. The fuzzification function is passed as a parameter so that the way in which these metrics are fuzzified can be modified. The specific fuzzy model as described earlier (where *m* is the “mass” of the word, *a* is the “amplifier” of the word, “*d*” is the “damper” of the word and *n* is the total number of words),

```
60
61 def fuzzifykeyness(m, a, d, n):
62     return m * ((a + d) / n)
63
```

The next step is determining confidence in each of these fuzzy powers,

```

63
64 def keynessconfidence(keyness, case):
65     # low, low-med, med, med-high, high
66     # freq, base, # of sense, # of words
67
68     confidence = {}
69     for keyn in keyness:
70
71         trap = SET.FUZZY_KEYNESS_CONFI
72         Frequency, F2 = fuzzifylmh(trap[1], trap[2], trap[3], trap[4], keyness[keyn][2]
73                                     ]/maxlistidx(list(keyness.values()), 2))
74         Base, B2 = fuzzifylmh(trap[1], trap[2], trap[3], trap[4], keyness[keyn][1]/5)
75         Sense, S2 = fuzzifylmh(trap[1], trap[2], trap[3], trap[4], keyness[keyn][3]/
76                                 maxlistidx(list(keyness.values()), 3))
77
78         temp_confidence = []
79         check = (lambda x: temp_confidence.append(x) if x is not None else 0)
80         check(evaluaterules(Frequency, Base, Sense))
81         check(evaluaterules(Frequency, Base, S2))
82         check(evaluaterules(Frequency, B2, Sense))
83         check(evaluaterules(Frequency, B2, S2))
84         check(evaluaterules(F2, Base, Sense))
85         check(evaluaterules(F2, Base, S2))
86         check(evaluaterules(F2, B2, Sense))
87         check(evaluaterules(F2, B2, S2))
88
89         confidence[case(keyn)] = sum([i[0]*i[1] for i in temp_confidence]) / len(
90             temp_confidence)
91
92     return confidence

```

Depending on how each metric is fuzzified, it can be either “low”, “medium”, or “high” with fuzzy sets of “low-medium” and “medium-high”. If a metric is somewhere between “low” and “medium”, both rules are applied with a multiplier equal to how “low” or how “medium” it is, hence there are eight rule checks. This is illustrated below,

```

90
91 def fuzzifylmh(a, b, c, d, x):
92     if x <= a:
93         # print("--1")
94         return (SET.FUZZY_LOW, 1), (None)
95     if x >= b and x <= c:
96         # print("--2")
97         return (SET.FUZZY_MED, 1), (None)
98     if x >= d:
99         # print("--3")
100         return (SET.FUZZY_HIG, 1), (None)
101
102     slope = 1/(b-a)
103     if x > a and x < b:
104         # print("--4")
105         return (SET.FUZZY_LOW, slope*(x-b)), (SET.FUZZY_MED, slope*(x-a))
106
107     slope = 1/(d-c)
108     if x > c and x < d:
109         # print("--5")
110         return (SET.FUZZY_MED, slope*(x-b)), (SET.FUZZY_HIG, slope*(x-a))
111

```

The rules are listed in Appendix B. The resulting fuzzy meaning for a word is then calculated by getting the list of words that are relevant for a particular context. Note that data is accumulated so the system can also know the process in which it derived the meaning. The “slowdown” was added in during the testing because there were times when the system’s output was not consistent with the same input. The cause of this problem was never determined; however, it stopped occurring at some point. The slowdown was kept as a precaution,

```

32
33     print("\tFuzzifying meaning...\t\t\t")
34     for i,word in enumerate(wcontext.keys()):
35         printwordupdate(((i+1)/progtotal)*100, word)
36         if case(word) in fuzzym.keys():
37             fuzzym[case(word)] = fuzzym[case(word)] + (real_words[case(word)],
38                 wcontext[word])
39         else:
40             fuzzym[case(word)] = (real_words[case(word)], wcontext[word])
41         time.sleep(SET.SLOWDOWN)
42
43     # [print(fuzzym[word]) for word in fuzzym.keys()]
44
45     return fuzzym, keyness_confidence
46

```

The following is pseudocode for a particular type of Even Modeling analysis (Level 2). In this case, the Event Feature Matrix is calculated. However, this is where the code “breaks down” because there are so many possibilities for the system to consider. This is just one path the system can take; however, further analysis is unlimited,

```

6
7     SET.DATABASE_CONNECTION = ddbf.connect(filename=SET.DBCONFIG)
8     em.initializemodel(start=True)
9     z = ii.readfile(SET.FILE_MODEL, ii.initializemodel)
10
11     for sample in corpus:
12         wmeaning, confidence = getfuzzymeaning(corpus)
13         em.initializemodel()
14         if "Y" in uf[SET.CURRENTDIAGNOSIS]:
15             em.trainmodel(wmeaning, confidence, sample)
16         else:
17             em.testmodel(wmeaning, confidence, sample)
18         em.showresults()
19
20     ddbf.disconnect(SET.DATABASE_CONNECTION)
21

```

The event features matrix may start cleared or, a previous set of features can be loaded,

```

10
11 def initializemodel(start=None):
12     if start:
13         SET.EVENT_MODEL = numpy.zeros((7,7))
14         SET.ANALYZED = 0
15
16     cc.initialstate()
17

```

If the system is training its event features model, it will use the following code,

```

30
31 def trainmodel(w, c, i):
32     ok = SET.RAN_OK(runmodel(w,c,i))
33     SET.ANALYZED += ok
34
35     if ok:
36         SET.CHAKRA_TRAIN_HISTORY[i] = (
37             SET.PCHAKRA[SET.LEVEL] - SET.QCHAKRA[SET.LEVEL],
38             SET.PCHAKRA,
39             SET.QCHAKRA
40         )
41
42     for i,c1 in enumerate(SET.RELEVC):
43         master = es.eventmote(SET.PCHAKRA[c1])
44         for j,c2 in enumerate(SET.RELEVC):
45             slave = es.eventmote(SET.PCHAKRA[c2])
46             SET.EVENT_MODEL[i][j] += round(master - slave,2)
47

```

Otherwise, it will run this code,

```

49
50 def testmodel(w, c, i):
51     SET.ANALYZED += SET.RAN_OK(runmodel(w,c,i))
52
53     SET.CHAKRA_TEST_HISTORY[i] = (
54         SET.PCHAKRA[SET.LEVEL] - SET.QCHAKRA[SET.LEVEL],
55         SET.PCHAKRA,
56         SET.QCHAKRA
57     )
58
59     ###
60     # Maximum likelihood function for each chakra
61     # Needs to consider degrees of freedom ... not sure how...
62     ###
63     # llog = x*logarithm(p) + (n-x)*logarithm(1-p)
64     # llogp = x/p - ((n-x)/(1-p))
65     # llogpp = (-1*x) / (p*p) + ((n-x)/((1-p)*(1-p)))
66     pass
67

```

The test model is incomplete as it does not consider the training model to predict the likelihood of a particular output based on how many features match (degrees of freedom).

Regardless of if the system is training or testing its model, it runs the same chakra effect identification algorithm to examine the energies of each individual text sample,

```

17
18 def runmodel(wordmeaning, confidence, identifier):
19
20     case = es.determineinfluence(wordmeaning, confidence)
21
22     if case == 0:
23         SET.PCHAKRA = cc.distributechakra(SET.PCHAKRA)
24         # SET.NCHAKRA = cc.distributechakra(SET.NCHAKRA)
25         SET.QCHAKRA = cc.distributechakra(SET.QCHAKRA)
26     else:
27         print("Not enough is known about the words in this sample...")
28
29     return case
30

```

Before investigating a new text sample, the system clears all of the previous data. It also refreshes the words that it knows from the database. The system can be used in parallel so if another instance tagged more words, it considers these newly tagged words in the subsequent text sample,

```

8
9 def initialstate():
10     empty = (lambda x: [] if x == None else x)
11     for c in SET.PCHAKRA.keys():
12         SET.PCHAKRA[c] = 0
13         SET.PSTATE[c] = True
14     for c in SET.NCHAKRA.keys():
15         SET.NCHAKRA[c] = 0
16         SET.NSTATE[c] = True
17     for c in SET.QCHAKRA.keys():
18         SET.QCHAKRA[c] = 0
19         SET.QSTATE[c] = True
20
21     for chakra in SET.CHAKRA_INFLUENCE.keys():
22         returned = ddbf.select(SET.DATABASE_CONNECTION, SET.CHAKRA_TABLE, SET.CHAKRA_TABLE_COLS[0] + "
23             = " + "''" + chakra + "''")
24         SET.CHAKRA_INFLUENCE[chakra] = empty(returned[1])
25         SET.CHAKRA_NONINFLUENCE[chakra] = empty(returned[2])
26

```

The “determineinfluence” function has been simplified to the following pseudocode. It studies each chakra and adjusts the dictionary of chakra values accordingly. If a word is not tagged in the system, it will be disregarded. The system tracks how many words were considered in the analysis through the “EVENT_WORDS” dictionary. Again, this method of using a list of actively tagged words is a very weak algorithm and can be improved multifold.

```

10
11 def determineinfluence(corpus, confidence):
12
13     plevel = 0; ptotal = 0
14     nlevel = 0; nttotal = 0
15     qlevel = 0; qttotal = 0
16
17     for word in corpus:
18         for meaning in word:
19             for chakra in SET.CHAKRA:
20                 if chakra != SET.LEVEL:
21                     if chakra != SET.CONFI:
22                         if chakra == SET.NOT_C:
23                             if word in SET.CHAKRA_INFLUENCE[chakra]:
24                                 SET.EVENT_WORDS[word] = True
25                                 cc.recover(...)
26                                 pttotal += word.fuzzymeaning
27                                 level += cc.infuse(sum(meaning[0][0]), confidence[mean])
28                             else:
29                                 if word in SET.CHAKRA_INFLUENCE[chakra]:
30                                     SET.EVENT_WORDS[word] = True
31                                     cc.recover(...)
32                                     pttotal += word.fuzzymeaning
33                                     plevel += cc.infuse(sum(meaning[0][0]), confidence[mean])
34                                 elif word in SET.CHAKRA_NONINFLUENCE[chakra]:
35                                     SET.EVENT_WORDS[word] = True
36                                     cc.recover(...)
37                                     pttotal += word.fuzzymeaning
38                                     plevel += cc.infuse(sum(meaning[0][0]), confidence[mean])
39                             else:
40                                 if SET.LEARN_NEW_WORDS:
41                                     # Ask user for input
42                                     cc.savechakra(chakra)
43                                 else:
44                                     SET.EVENT_WORDS[mean] = False
45                             else:
46                                 SET.PCHAKRA[chakra] += plevel
47                                 SET.NCHAKRA[chakra] += nlevel
48                                 SET.QCHAKRA[chakra] += qlevel
49                                 plevel = 0
50                                 nlevel = 0
51                                 qlevel = 0
52     SET.PCHAKRA[SET.CONFI] /= pttotal
53     # SET.NCHAKRA[SET.CONFI] /= nttotal
54     SET.QCHAKRA[SET.CONFI] /= qttotal
55
56     SET.PCHAKRA[SET.LEVEL] = SET.PCHAKRA[SET.EARTH] + SET.PCHAKRA[SET.WATER] + SET.PCHAKRA[SET.FIREW]
57     + SET.PCHAKRA[SET.HEART] + SET.PCHAKRA[SET.SOUND] + SET.PCHAKRA[SET.LIGHT] + SET.PCHAKRA[SET.
58     COSMI]
59     SET.QCHAKRA[SET.LEVEL] = SET.QCHAKRA[SET.EARTH] + SET.QCHAKRA[SET.WATER] + SET.QCHAKRA[SET.FIREW]
60     + SET.QCHAKRA[SET.HEART] + SET.QCHAKRA[SET.SOUND] + SET.QCHAKRA[SET.LIGHT] + SET.QCHAKRA[SET.
61     COSMI]

```

There were a few methods developed to emulate “chakra control” or the flow of chakra for a particular text sample. Many of them are not used, but they follow the same simple format as the “recover” function which adds or subtracts from the chakra dictionary,

```

25
26 def infuse(word, confidence, category=SET.INTERNAL):
31
32 def block(chakra, single=None, state=SET.PSTATE):
43
44 def unblock(chakra, single=None, state=SET.PSTATE):
55
56 def disturb(chakra, value, single=None, state=SET.PSTATE):
67
68 def balance(chakra, single=None, state=SET.PSTATE):
76
77 def recover(chakra, value, single=None, state=SET.PSTATE):
78     if single == None:
79         if SET.PSTATE[chakra]:
80             SET.PCHAKRA[chakra] += value
81         if SET.NSTATE[chakra]:
82             SET.NCHAKRA[chakra] += value
83         if SET.QSTATE[chakra]:
84             SET.QCHAKRA[chakra] += value
85     else:
86         if state[chakra]:
87             single[chakra] += value
88
89 def deletechakra(chakra=None, local=None):
104
105 def savechakra(chakra):
142
143
144 def distributechakra(chakra):
169

```

After all of the possible words have been accounted for in the chakra values for a particular text, the relativeness of each chakra to each other chakra is calculated, and the Event Feature Matrix is updated,

```

159
160 def eventmote(percent):
161     for i,tag in enumerate(SET.EVENT_TAGS):
162         if percent > tag[2][0] and percent < tag[2][1]:
163             return SET.EVENT_TAGS[i][1]
164
165     return 0

```

The “eventmote” function simply computes a fuzzy strength of each chakra as it relates to other chakras.

APPENDIX H

The following samples are from DRC.D,

Text:

Hello! my name is Dani and this is my extremely swollen face after dental surgery! <break> And it doesn't matter what my face looks like because it's the message that I'm getting across which is a lot more important to me. <break> May is coming to an end and May has been a mental health awareness month. And for those that don't know me, I am someone who has, and I will not say suffer because I hate that term, but I am someone who has experienced depression for a lot of my life. And I experienced it for the first time when I was 12 years old and I also experience anxiety and panic attacks at times as well. Depression is one of those things that a lot of people in the world don't understand, and because they don't understand, when you experience it yourself, you feel like you're the only one going through it because it's not approached in the right way in our society. Depression is just an annoying little thing that likes to enter your life at random moments and overstay its welcome. And all you have to do is, honestly, just punch that depression in the face and tell it to go away. <break> We need to learn to laugh about depression, just like "oh god, here it comes again" and not give it the power to allow it to take over who we are. A lot of people in the world do not understand depression and believe that being depressed means you're a broken person or there's something wrong with you. But there's absolutely nothing wrong with you. There are millions and millions and millions of people in the world that are going through what you're going through as well. And there needs to be more talk about it, there needs to be more openness about it because if we treat it as we do a common cold, would it really affect us as much? <break> Something which I have never.. spoken about online.. when it comes to my depression, for good reason.. is that I have allowed it at moments, to enter my mind and consume me and take me to places that are so dark.. and so damaging that I don't even know what I'm considering. And what I mean by that is your mind taking you to a place where you start believing that there's no reason to be here anymore. That people will be happier if you leave. You're a burden to people. Things are going wrong in your life for a reason because you're "not meant to be here". But I can tell you that you ARE meant to be here. You ARE meant to experience so many more things in life. <break> List things in your head of places you want to see and things you want to do and there will be something, whether it's skydiving, seeing the northern lights in Iceland. <break> Our society is designed in a way to make us depressed. Industries thrive off us feeling bad about ourselves. When it comes to aging, we are scared of it because

we see anti-aging cream, anti-wrinkle creams advertised everywhere that we are meant to believe that looking old is a bad thing. We have grown up surrounded by imagery of these "ideal westernized bodies" and if we don't fit that standard, we believe there's something wrong with us. <break> I fall into this category. Today I'm extremely swollen. I put a massive mask of make-up on my face cuz society has taught me that if I lay here, with no make-up on, being incredibly swollen, and looking what is defined as "ugly", I would be less of a person. <break> We teach ourselves to worry, we teach ourselves to feel inadequate because we believe that's what's right. <break> That's not. The only things in life that matter are the moments that make you so happy to be alive. <break> I want you to understand that you've made people smile and you've made people laugh and people genuinely love you. Whether or not it feels that way, they do and it's something, when I hear that, I feel like rolling my eyes and being like, "well, no one loves me", but they do, trust me. Things will always appear worse, than you think, in your mind, because that's just the way that we are, unfortunately, we believe those things. <break> But I want you to turn around and just say, "Screw depression. I'm going to keep going. And I'm going to show it, how strong I am." <break> I'm going to do it for the day that I'm floating in the ocean and I just think, "I'm so glad that I kept going." <break> And all I have to say is that life is waiting for you whenever you're ready. It will ALWAYS be here waiting for you. <break> It may take time to get through the pain, but no matter what, I'm so proud of you for still being here.

Chakra Level: 8395.67

Confidence Level: 56.61%

Number of words known: 286

Number of total words: 286

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
80.65	42.75	25.64	37.32	33.59	25.7	56.27

Text:

Sometimes we are the moon. Sometimes we are the pain, the leaves, the fist, the wind, the wall. Yet, in all cases the moon is a rock, pain is a nerve, the leaf is a plant, a fist is a hand, wind is pressure changing, a wall is a structure,

and we are none of these things. We simply are who we are, only we wish to be otherwise. Does the moon ever wish to be the wind?

Chakra Level: 913.33

Confidence Level: 51.44%

Number of words known: 38

Number of total words: 38

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
83.73	46.23	28.94	45.17	35.63	61.52	19.94

Text:

3/24/18 5:45am

Pumping with little thought in my head, but had the urge to open this up. Usually I start to write to vent or document, but I find myself staring thoughtlessly into space. I'm not even really tired...maybe a little delirious.

Warm light, blue ink early morning sky, rhythmic suction and mechanical pump motor, a numbing in my right breast, I sit cross legged, a bottle gathering drops of breast milk on each thigh. I become aware of my back pain--a low throb, which makes me aware of my poor posture--I straighten up and crack my shoulders. (My son) makes a little exhale from the dark bedroom, Bella leaves my feet to go investigate, Z immerses from under the table to drink. My left hand on my stomach--I wonder if I will be able to get my pre-pregnant body back. I like my linea negra and a part of me wants to keep it as a souvenir.

Pregnancy seems so far away. I enjoyed it and already miss it.

A gas pain, a tense neck. A foot falling asleep. Pause it all with 4 minutes 21 seconds. Resume and the pump was acting funny.

Ali came to meet (my son) yesterday. It felt good having her here. I realize how my job became my sole focus for a while and not having my friends from work around daily--- I need to reach out to old friends.

I'm not very eloquent at 6am after two feedings. A sharp pain just shot through my right breast.

Back to bed.

6:03am

Chakra Level: 250.68

Confidence Level: 47.51%

Number of words known: 97

Number of total words: 170

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
66.72	48.14	40.1	17.42	39.09	47.88	11.68

Text:

This weekend, I went to Trader Joe's and Starbucks. I needed to buy cereal, and I also wanted pretzels and sparkling lemonade. Additionally, I wanted to get stars for my Starbucks rewards. I forgot my hat in my room, so I borrowed one from a friend. Then I went to Trader Joe's. I ended up not getting pretzels because they didn't have any salted ones. I ended up getting Cheerios, creamer, sparkling lemonade, and a grapefruit. Then, I went to Starbucks and got a peach tea. Unfortunately, they didn't have hot tea but I was still able to get iced peach tea. I then went back home and put my creamer in the fridge and the rest of my food away.

Chakra Level: 49.42

Confidence Level: 55.45%

Number of words known: 68

Number of total words: 68

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
62.38	62.31	14.25	22.06	54.78	45.62	28.09

Text:

Life is not easy. They say the grass is not greener on the other side. But from where I'm standing, it certainly is. Who says it's not greener? I think it is very vibrant, full of color, flowers, butterflies and sunshine. And on my side, gray, rain, clouds, storms and sadness. Every day when I wake up, I hope and pray it is a dream. I've wished a thousand times over that I could swap places with any random person, so that I didn't have to live in my body anymore. I know, it seems like, what am I missing. I have everything. An education, a job, a spouse, healthy kids. But inside I still miss my life the way it was before marriage. I missed not having a worry in the world. Most of all, I miss living in my parents' house and having them around. You see, we are not on good terms and that kills me inside. It's easy to blame each other, but I think all parties involved are equally guilty, including myself for the fallout. But I digressâ€¦ I know deep down inside, I should be thankful for what I have, grateful even. But every day I wish things would be different. I look at a few friends from high school and it seems like they have everything. They have jobs, kids, husbands and their parents. I see grandmas happily babysitting or bringing over home cooked meals. I have no one, no one who would care if I was too sick to cook, other than my husband, who would happily go out and buy some fast food. If I was having a bad dayâ€¦ who can I call? Myself. There's just no one else who would understand. And the few that I can confide in, well they are in worse situations and they sayâ€¦ well at least you have a husband, a house, and healthy kids. And then I stop, because honestly, what I can I say in response to that. Its not enough? Then I seem like a whiny spoiled brat. Which I am not. So every day I tell myself. Its not so gray, its not so dull, there is a bit of color in the twinkling of my kids eyes, in their laughs, in their little ideas and thoughts. And that puts a smile on my face.

Chakra Level: 347.90

Confidence Level: 50.29%

Number of words known: 141

Number of total words: 198

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
77.50	53.79	17.32	26.49	46.9	45.22	29.37

Text:

(I typed this up a while ago to record my thoughts on Get Out. This was right after I saw it.)

What I liked:

For all my complaining, I did enjoy the movie. I wanted to see if Chris would manage to escape, I was curious to see how much his TSA friend would figure out, and I was eager to see the family's heads torn off. In the moment, I was definitely immersed. It was not a boring movie, and my number one criteria for judging any movie is whether I was entertained. And I was, especially during the breakout.

The TSA guy was awesome. Not only he manage to put 2 and 2 together long before Chris did, his speech pattern was my favorite part of the entire movie. THEY'RE ROUNDING UP BLACK PEOPLE AND TURNING THEM INTO SLAVES! NO, WAIT! SEX SLAVES, NOT JUST SLAVES! SEX SLAVES! I'll be quoting him to myself for a few days, easily.

I really appreciated how the entire family had a role in the brainwashing. The mother hypnotises the victim to render him helpless whenever necessary and lay the groundwork for the more permanent measures. The father transplants the necessary body parts to put the victim at the mercy of whatever mind the family decides to connect. The daughter lures victims in. The son is the muscle of the operation. I feel like in most movies & TV shows, either there's only one bad guy, or an extensive network with one villain clearly the head honcho of the pack. Having each of the four family members bring a unique and equally useful ability to the table, it filled a hole within me that I didn't even know was there; it felt heartwarming in a darker sense.

The ending got me. When that police car pulled up, I thought for sure that the officer from the beginning would pop out, assume that Chris was behind everything, and take Chris to jail, and we'd have a downer ending with some moral about how not all is as it seems. But then the camera pans up close to the car, you see the TSA logo on the side, and you breathe a sigh of relief and realize that it's all good.

What I didn't like:

Holy mother of Idiot Plot. (Is it Idiot Plot if there's only one hero?) For nearly the entire first half, I was mentally screaming at Chris to realize what's going on, leave that lunatic family behind, and make a break for it. How

much had to go wrong before he decided it was time to forget about Rose and run? He only seemed to figure everything out when the family turned openly hostile.

- The mother of the house reveals that she's a hypnotist, paralyzes Chris against his will, and sends his mind into a black void, then the next day he receives proof from the groundskeeper that the previous night was not a dream. His conclusion: The mom got into his head, andâ€¦ well, that's it. No ideas really spawn from that unusual encounter, other than he has no desire to smoke any more.

- A black woman is creepily smiling whenever he sees her, repeatedly unplugs his phone with illogical explanations for it, and speaks nothing like how he expects her to speak. His conclusion: She's jealous of his girlfriend.

- The groundskeeper shares the exact same creepy smile, illogical behavior, and unusual manner of speech as the maid. And, again, Chris knows that the mother of the house is a potent hypnotist. His conclusion: The groundskeeper is jealous too. ARE YOU KIDDING ME?

- Another black man with more mismatches in style and speech responds to a bright light by acting like Chris expects to him to act, and telling Chris as clearly as possible to get out of the house ASAP. The family explains the incident as a seizure, which Chris knows can't be the truth because he's seen what a seizure looks like. His conclusion: ...Well, after trying to convince Rose that something's up and dawdling some more, he decides he should probably leave. No rush, though. Sure, he doesn't feel safe, but you wouldn't want to be impolite.

- Chris finds a hidden series of photos of Rose with assorted black men (after she told him that he was the first black man she dated!), which means that she is likely involved in whatever is going on to subjugate the other blacks. His conclusion: Gotta get outâ€¦ once Rose grabs the keys. (And side note: When Rose refuses to give them to him, it's played as a major plot twist. Some people in the audience gasped. I cannot believe either of these things occurred)

- While the second half was more devoid of idiocy than the first, as Chris was a total badass while escaping, one example stands out: Chris flashes a bright light at the hypnotized black groundskeeper attacking him, which Rose knows from personal experience causes the hypnosis to be temporarily undone. The groundskeeper, very gruffly and not at all like Rose has conditioned him to speak, asks for Rose's gun (her only weapon) in order to finish Chris off. Rose's conclusion: Seems legit.

My other major problem with this movie is how obvious many of the "twists" were. So many hints were dropped that it was very easy to form a general idea of what was going on, and it was really frustrating to know the details of the plot soooooo long before Chris did. It really lessened my emotional connection with Chris; it wasn't like my reaction to his nearly being killed was, "Hey, you had your chance to get out," but it made it harder to empathize with the guy.

- The maid, groundskeeper, and fuckboy all being hypnotized? So fucking obvious that I wanted to scream at the movie.

- The family being a bunch of nutcases? Foreshadowed until that shadow was pitch-black.

- Rose being in on it? Maybe I just got lucky, but I saw that coming a mile away as well, even before Chris found the pictures of the other guys and the movie somehow still thought Rose turning on Chris afterward would be a surprise.

- The relatives being in on it? Okay, I thought they were hypnotized as well, so I missed the mark a bit here, but the way everyone fell dead silent and started staring at the ceiling in response to Chris just walking upstairs! that really gave a bit too much away for my personal liking.

Chakra Level: 480.06

Confidence Level: 58.09%

Number of words known: 227

Number of total words: 462

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
72.22	65.13	30.73	13.92	43.83	48.35	32.36

Text:

Dear colleagues,

I am sorry.

I realise that my behaviour has impacted those around me, both in the past, and also more recently. I don't make excuses for the hurt that I've caused. And so, I'm writing you this letter because I want you to understand. Because you deserve an explanation and I think this is the best way to give you that explanation. You are honest with me and it is only fair that I do the same.

Having to pretend that I don't ever feel sad, anxious, overwhelmed, or even panicked is not healthy. It is also incredibly exhausting, in all honesty. Up until now, I haven't admitted what has been going on because I thought I could carry on and cope. For the best part I do manage. However, like recently, every so often I hit a rough patch and as hard as I try to prevent it from happening, that spills over into my work life.

This is what I need from you: to listen, learn, and offer your support in whatever way feels most comfortable for you. If you aren't sure what to say, you don't need to say anything at all. Depression turns you into someone even you don't recognise. It isn't an excuse, but I hope it helps you to make sense of the way I may sometimes behave. It is never my intention at the time, but the fact remains that I have hurt people. And that is completely inexcusable.

I've imagined sharing this a thousand different times; during conversations around the coffee machine or after particularly stressful meetings. I've pictured myself blurting it out in a moment of need. But I held back, again and again. I was afraid of what you might say, or not say, back to me. Instead, I swallowed it down with, "No, I'm fine. I'm just tired today." My mental illness has made me behave in a way that I am ashamed of. It turns me into a person even I don't recognise.

I'm sorry for pushing you away when you reached out to help me or needed me to help you. I may have made you feel that the help you were offering was not what I needed. You probably didn't know how to help, and I did little to enlighten you. Defeated, you withdrew from me. I don't blame you for that in retrospect.

I'm sorry for casting a dark shadow over such a great working environment. I poisoned your happy thoughts with negativity at every turn and I feel truly saddened by this realisation. I'm sorry for not being more helpful when you needed me to be. I can become so consumed by darkness and as a result I was not available to offer support and encouragement. I expected so much of everyone but offered nothing in return. I am sorry that I become defensive and shut off. I know that this isn't helpful when you are only trying to do your job. You have felt the tension and uncertainty of my darkness. I'm sorry for what you had to endure in doing so.

I cannot go back and change the way I treated you. I cannot take back the mistakes I made or the unforgivable way I have spoken to you. But I am truly sorry for the hurt that I have caused.

Most of the time I can do my job and I believe that I really do a good job. I want to help support the business as it grows and play an instrumental part in that. I promise that if I begin to feel really overwhelmed, anxious, or sad, I'll come to you with an action plan or ask for extra support. Sometimes, I may need to take sick leave — because I live with a medical condition.

I choose to look at the positives this illness can bring, to not just my personal life, but to my work life. I know that I'm responsible for taking care of myself both at home and at work. And I know that there's a line between our personal and professional lives.

What I'm asking from you is an open mind, tolerance, and support if, and when, I hit a rough patch. We're a team, and we're in this together. In return, I will do my job to my best ability and do what I can to support you to do your job.

Yours,

Tash x

Chakra Level: 751.48

Confidence Level: 50.24%

Number of words known: 195

Number of total words: 295

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
69.80	46.43	17.9	31.59	42.18	34.51	25.44

Text:

Today I woke up and for a moment I lay still, staring at the ceiling. I lay there and felt my chest rise and fall as I breathed. It took all my will power to keep my focus on my breath, a mindfulness technique I have been taught. I did this for 30 seconds, maybe a minute, as my husband got up for the baby.

I was lying there, trying to keep my focus off the one thing that has dominated my thoughts recently. The dark, dismal feelings that have clawed their way into my life and that bring with them the thoughts that I just can't go on anymore. These thoughts bring with them tears and heartbreak and they make living a normal life more and more difficult.

My bipolar disorder has made me prone to depression. It is a lifelong battle, but as my husband carries my beautiful son into our room, that battle must be put on hold. Despite my turmoil, my son is not going to see me cry.

I take a deep breath and put my mask on for the day; as so many people do who suffer with mental illness. It is not hard to smile when my little boy is around. To the outside world it would be hard to know that my life is blackened with depression - and that is how it must be!

But the problem is that truces are temporary and each momentary stand-off is just building for a bigger battle! I can keep this battle going for a while, but not forever. Ultimately there will be a point when all my defenses will fail and I will face that demon again. The one who brings me to my knees and gives me a choice to live and fight or to give in to those thoughts.

So many people read stories like this and will never understand. They may think: "pull yourself together", or "how selfish to feel so low when you have so much". It's not materialistic, depression! It doesn't just go away by shrugging it off. It's an illness, the same as the flu. Annoying, lingering, debilitating and unwelcome!

Depression has never been easy, but it somehow felt easier when there wasn't a little human who needed me so completely! Before motherhood I could keep the mask on while I worked, sob on the way home in the car and have a hot bath and curl up on the sofa. Even when I could no longer work there were no problems with me taking to my bed for days at a time. But not anymore!

Having a baby was the single most wonderful thing I have ever done. He is my world, my entire world, I adore him and he brings me more joy than I ever thought possible! But that joy does not protect me from depression!

What it does mean is that I have a huge reason to keep living, to keep fighting, and that is a beacon of light in the darkness. I have always found hope to be the best weapon to fight depression and my son gives me all the hope I could ever need!

But it doesn't make it easy when depression comes knocking. That is sometimes the cruelest thing about depression. It doesn't care whether your life is full of love and joy, it still comes, to darken your days.

Having a baby has made self-care even harder. Not only do I have to keep going for him, I need to keep that mask on for a whole lot longer. The need to rest and recover is slipping down the list of priorities.

Not getting enough sleep has always been a trigger, and all new mums will agree that getting sleep becomes like hunting for the holy grail! My baby is 14 months old and still wakes most nights. This prolonged sleep deprivation is certainly making me feel more exhausted and less able to cope.

It also makes my other coping methods a lot less appealing. Walking and running require energy, which is something I just don't have at the moment! My books have become dust magnets as I spend my time playing, singing and entertaining my little boy!

It also is a lot harder to hold myself together once that little ray of light has gone to sleep for the night. That's often when I quietly sob to myself. I feel at my weakest and the battle seems at its most futile.

It's in these moments when the facade slips and those emotions I suppressed flood to the surface. My rational brain tries to find logic in my sadness and battles to restore order to my emotionally ravaged heart. I fall apart briefly.

That is the way wars go. Somedays progress is made, other days it looks hopeless. Nobody knows who has won until it's over. Somedays I don't think it will ever be over.

It doesn't matter whether I am winning or losing, it's the fact I am still fighting that really matters. My little boy comes first, that is why I get up every day. And by continuing to fight there is hope.

I may never defeat depression but I will find a way to keep it in its place. Beneath me, in the dirt where it belongs. From there I will stop surviving and start living. That is the hope; maybe that is all I need.

Chakra Level: 896.91

Confidence Level: 57.63%

Number of words known: 248

Number of total words: 376

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
72.04	58.28	17.99	38.29	45.23	61.98	18.74

Text:

4:51 PM: I need to touch base today to let you know that some days are better than others. Also, some are worse. Today's pretty bad for me. It's a double crutch day. Ironically, I may not be able to attend the Tourette Syndrome support group tonight because I'm ticking too much to drive. We'll see how the evening pans out.

Today will mark the return to blogging on the 10th, 20th, and 30th of every month. I don't mean this blog. I have another article planned for today. It will post later tonight. That should please many of you — at least, it is my hope that it will please many of you. I realize that people seeking writing articles are put off by my mental health articles; people seeking depression articles are often turned off by my writing and ADHD articles; and people interested in ADHD articles aren't just disinterested in depression and writing articles, but they've already left the page by now. I seem to always be disappointing somebody, but this is my blog, and I get to determine what subject matters motivate me to put off disability long enough to write. The transition from blogger about mental health to a blogger with ADHD & depression overcoming disability to become an author has been a longer one than I intended. I have been told before that these process entries are boring. I have to admit that after blogging for so many years, I thought I'd have earned a few more cheerleaders than I currently have, but that's life. We can't dictate who supports us and who does not. However, I do have to admit that even I get tired of this extended process of mastery over my short-comings. I am impatient for the journey's end to be upon me. I know, life is a journey, blah blah blah. However, if mastery is on the other side of a mountain range of effort that will take years to reach, I'd like to be at least comfortably cruising down one of those moutains. Sometimes, I feel stuck in mud in a desolate valley filled with terribly good excuses.

Still, I press on.

I have errands to run. Writing this journal entry has helped connect some mental dots, and my ticking has abated. I need to get out there quickly while I can still drive. I never drive while ticking. I have an aversion to car accidents, mug shots, and death.

While you wait for my next article, I want you to know that I don't have a Patreon, but if you want to support my blog (which costs money to host and run), please buy my books. If you already have, thank you. I greatly appreciate it. Also, did you know that ebooks make great gifts?

4:59 AM: I concede defeat. Ticking took up so much of my evening that I keep falling asleep as I polish up my new article. It's time to take care of my brain. I'll post the article after I delete that awkward section where I used my face to type on the keyboard.

Chakra Level: 504.47

Confidence Level: 56.19%

Number of words known: 168

Number of total words: 260

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
77.18	46.39	26.89	22.77	43.79	58.41	24.72

Text:

I have depression.

Seven years.

Life interrupted.

Intelligent, witty, athletic.

witless

Master degrees #1 and #2.

useless

Career of helping others

helpless

'Till death do us part

spouse-less

House, two cars, dog

yard-less

Joy

joyless

Humor

humorless

Hope

hopeless

I am not depressed

I have depression.

I have depression.

Chakra Level: -65.72

Confidence Level: 56.04%

Number of words known: 40

Number of total words: 40

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
83.05	37.65	37.55	32.41	33.49	42.19	24.42

The following samples are from DRC.N,

Text:

My husband and I have been trying to have a baby for a while. Every month it doesn't happen I feel a huge sense of loss, all my dreaming and hope falls away. I feel like my life is on hold. I keep telling myself god will give us our baby soon, but it's so hard.

Chakra Level: 93

Confidence Level: 45.17%

Number of words known: 45

Number of total words: 45

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
82.56	45.94	35.83	54.53	12.85	49.02	32.26

Text:

I remember years ago writing about an electrical outlet. How it looked like a face. How the two long slits could been seen as eyes and how the mouth could be the ground slot. I remember trying to fill the pages in this creative writing exercise. How the unused outlet seemed to just stare out into the room, day after day. How its unblinking eyes would see all that happens in the room, but only in that one room. How it can be dangerous. How it can kill if someone stuck a metal object into it. How it is made safe from children by plugging it up with a plastic cover. How it can be connected and give life to appliances that can enhance the lives of those in the room. How its energy can give life to machines. How such energy can be wasted, by letting it just stare out at the room.

Chakra Level: 173.97

Confidence Level: 39.98%

Number of words known: 63

Number of total words: 89

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
55.14	36.13	55.89	58.56	10.01	85.20	52.52

Text:

*If you like pina coladas or getting caught in the rain. If you not in to yoga or you have half a brain. - Adam Sandler
Movies*

*When I ripped my pants, I thought I had everybody on my side but I went and blew it all sky high and she didn't even give a passing glance, all just because I ripped my pants. When big Larry came around just to put him down, spongebob turned into a clown and no girl ever wants to dance with a fool who went and ripped his pants. I know I shouldn't mope around, I shouldn't curse but the pain feels so much worse, cause winding up no one is a lot less fun than a burn from the sun or Sand in your BUNS! Now I learned a lesson I won't soon forget so listen and you won't regret, be true to yourself don't miss your chance and you won't end up like a fool who ripped his PANTS!!! -
Spongebob Squarepants*

This is just what I was listening to when I got this survey.

Chakra Level: 131.73

Confidence Level: 46.55%

Number of words known: 77

Number of total words: 113

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
68.16	62.41	12.32	28.92	45.57	43.83	30.63

Text:

I wish some things were easier in life. I know happiness is around the corner but I don't seem able to reach it. I am autistic, I have ADHD and Dysphagia. Being ill does not define me but locks me in some kind of loneliness. I wish I was not so stuck in my head sometimes.

Chakra Level: 243.01

Confidence Level: 38.64%

Number of words known: 43

Number of total words: 43

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
79.23	39.08	36.53	18.22	45.11	26.59	40.62

Text:

The one conversation that uplifted me more than any other in my life was with a woman who told me how, a few days earlier, she drove her Jeep Wrangler to the edge of the Grand Canyon and sat there, revving the engine, thinking about driving over. Even though I had severe social anxiety, in that conversation, I was totally at ease. (Laughter) She told me what was going on in her life in the days and months leading up, what her thoughts were at that exact moment, why she wanted to die, and why she didn't do it. We nodded and half-smiled, and then it was my turn to talk about my journey to a dining table in the hygienic community area of the mental health wing of a mountain-town hospital. I took too many sleeping pills, and after they treated me for that, they were like, "Hey, we would love it if you would be our guest in the psych ward." (Laughter) We joked that her suicide would have made a way better postcard. (Laughter) We talked shop. (Laughter) She allowed me to be deeply depressed and have a genuine connection to another person, simultaneously. For the first time, I identified as somebody living with depression, and I felt good about it -- like I was wasn't a bad person for it. Now imagine one of the people at that table was a member of your family or a close friend. Would you be comfortable talking to them? What if instead of the hospital, they were at your kitchen table and told you they were really depressed? The World Health Organization says that depression

is the leading cause of ill health and disability worldwide, affecting million people. The National Institute of Mental Health reports seven percent of Americans experiencing depression in a year. So depression is super common, yet in my experience, most folks don't want to talk to depressed people unless we pretend to be happy. A cheerful facade is appropriate for casual interactions. A depressed person can ask for extra syrup in their pumpkin spice latte without explaining that they need it because they're trapped in the infinite darkness of their soul and they've lost all hope of escape -- (Laughter) again. (Laughter) Depression doesn't diminish a person's desire to connect with other people, just their ability. So in spite of what you might think, talking to friends and family living with depression can be really easy and maybe even fun. Not, like, Facebook-selfie-with-Lady-Gaga- at-an-underground-party fun -- I'm talking about the kind of fun where people enjoy each other's company effortlessly. Nobody feels awkward, and no one accuses the sad person of ruining the holidays. Why does this chasm even exist? On the one side, you have people living with depression who may act in off-putting or confusing ways because they're fighting a war in their head that nobody else can see. On the other side, the vast majority of people look across the chasm and shake their heads, like, "Why you gotta be so depressed?" You may recognize a divide like this in your life. Do you want to build a bridge across it? You may not want to build a bridge -- and that's a totally valid choice. Or maybe you'd like to build a stronger connection, but you have a lot of questions and concerns. You're what I might call "bridge curious." (Laughter) Here are some possible reasons why some of you may avoid depressed people. You might be afraid that if you talk to somebody while they're depressed, you're suddenly responsible for their well-being. You're not expected to be Dr. Phil. Just be friendly -- more like Ellen. (Laughter) You may worry that you won't know what to say, and every attempt at conversation will be awkward, and the only time you'll feel comfortable is when you both just give up on talking and stare at your phones. Words are not the most important thing to focus on. You might fear seeing your shadow. Hey, if you have been successfully outrunning your personal emotional demons, that's awesome. May the wind be at your back. (Laughter) You can be the least woo-woo person in the world and still connect with depressed people. Maybe you've heard that depression is contagious, and you're afraid of catching it. Bring some hand sanitizer. (Laughter) You're much more likely to catch the joy of human bonding. Maybe you see depressed people differently. You think of them as flawed or defective. Multiple university studies have shown that A students are more likely to have bipolar condition. Our brains aren't broken or damaged, they just work differently. I spent a lot of years thinking happy people just don't get it. (Laughter) I did eventually stop discriminating against happy people -- (Laughter) I began battling depression when I was eight, and decades later, to my surprise, I started winning. I shifted from being miserable much

of the time to enjoying life. I live pretty well with my bipolar condition, and I've overcome some other mental health conditions like overeating, addiction and social anxiety. So I live on both sides of this chasm. And I'm offering some guidance based on my experience to help you build a bridge across it if you want to. It's not hard science, but I worked with a lot people I know who've lived with depression to refine these suggestions. First up, some things you might want to avoid -- some "don'ts." One of the most off-putting things you can say is, "Just get over it." Great idea -- love it, it's just we already thought of that. (Laughter) The absence of the ability to just get over it is depression. (Laughter) (Applause) We feel it in our bodies -- it's a physical thing for us. And medically it's no different from telling someone with a broken ankle or cancer, "just get over it." Don't be hell-bent on fixing us. Like, thank you, but ... the pressure can make us depressed people feel like we're disappointing you. Also, things that make some people feel better may not work for us. You can't cure clinical depression by getting ice cream ... which is unfortunate, because that would be living the dream. (Laughter) Don't take a negative response personally. So, I have a friend who, about a year ago, messaged me that he was really isolated and depressed. And I suggested some things for him to do, and he was like, "No, no and no." And I got mad, like, how dare he not embrace my brilliant wisdom? (Laughter) And then I remembered times I've been depressed, and how I thought I was doomed in all possible futures, or everybody suddenly hated me, and things like that. It didn't matter how many people told me otherwise -- I didn't believe them. So I let my friend know I cared, and I didn't take it personally. Don't let a lack of bubbly happiness freak you out. It's not a shark attack. "Call the coast guard, my friend is sad!" (Laughter) We can be sad and OK at the same time. I'm going to say that again, because in our society, we're taught the opposite, and so it's counterintuitive. People can be sad and OK at the same time. So some of these things may apply to you personally, some may not. Take what's useful. And remember, you don't have to connect. If you want to, here are some suggestions that may help -- some "dos." Talk to us in your natural voice, right? (Laughter) You don't need to put on a sad voice because we're depressed -- you don't sneeze when you're talking to somebody with a cold. (Laughter) It's not rude to be upbeat. You can be you, OK? If you make an offer to be there for us, clearly state what you can and can't do. I have told people, "Hey, call or text any time, but I might not be able to get back to you that same day." It's totally cool to not make an offer, or to make a narrow offer with really clear boundaries around it. Give us a sense of control. Like, get our consent. I have a friend who, a while back, when I was having a depressive episode, reached out and said, "Hey, I want to check in with you. Can I call you every day? Maybe text you every day and call later in the week? What works for you?" By getting my permission, she earned my complete confidence and remains one of my best friends today. And my last suggestion is:

interact about not depression, aka, normal stuff. I have a friend who, when people were worried about him, they would call and ask if he wanted to go shopping or help them clean out their garage. Your depressed friends could be a good source of free labor -- (Laughter) What I'm really getting at is, invite them to contribute to your life in some way, even if it's as small as asking you to go see a movie that you wanted to see in the theater. So that's a lot of dos and don'ts and maybes, and it's not by any means a definitive list. The thing to remember is that they're all grounded in one guiding principle. It's what allowed the woman in the Jeep Wrangler to start me on the path to recovery without even trying. She talked to me like I belonged and contributed exactly as I was at that moment. If you talk to a depressed person as if their life is just as valuable, intense and beautiful as yours, then there's no need to build a bridge between you, because you've closed the chasm. Focus on that instead of your words, and it may be the most uplifting conversation of their life. What could that do for somebody you care about? What could it do for you? Thank you. (Applause)

Chakra Level: 26970.22

Confidence Level: 58.45%

Number of words known: 313

Number of total words: 563

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
70.78	44.57	12.19	48.67	36.58	55.99	20.65

Text:

Some of my readers may want to know why I've called my blog Forget-me-not friends. There are two main reasons - the first is from my past, the second more recent. When I was young and still living with my parents, my maternal grandmother lived with us. She was limited to a wheelchair and I spent much time with her. One spring day I picked her a bouquet of forget-me-nots from our garden to cheer her. Her happy response led her to ask me to remember her when she was gone every time I saw these small but lovely little flowers in the spring. At first, I did think of her then, but later it expanded to every time I saw them on a greeting card or the word mentioned anywhere. Somehow I felt close to her at those times and that she was thinking of me too.

My love for these flowers grew over the years, especially while I was struggling to overcome a 20 year battle with schizophrenia. Because spiritual fears and confusions were a big part of my illness and caused me to reach out to God for answers and help, I gradually believed that He was also encouraging me to know all would be well whenever I was given to see forget-me-nots in some way. He seemed to say that since He never forgets me, would I try to remember Him more. The forget-me not began to signify peace and a growing hope and faith in God's love, which continues to this day.

Somewhere I read that we are all flowers in God's garden - all unique and treasured for our differences. Some are small and delicate, while others are larger and stand out, but all have a reason for being what they are. I began to see myself as a forget-me-not, someone who needed others beside me to make a show. For those of you who feel insignificant and small, friends can be a blessing to strengthen you, and together we can make a difference in our world. By leaving positive and encouraging comments on my blog, you can be a friend to help me and others grow to be the healthy and beautiful people God wants us all to be. The beautiful blue reminded me of heaven and our spiritual growth, while the fact that we bloom every year in spring reminds me that, although we may go through winter seasons, we'll bloom again and again and again. Wherever we are in our life-journey, hope ensures that we'll always have a new spring by patiently enduring our winters.

Blessings from

Annie

Chakra Level: 564.48

Confidence Level: 51.52%

Number of words known: 144

Number of total words: 218

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
70.21	51.09	13.75	45.13	39.51	53.84	15.8

Text:

Today I'm suffering from the pain of having my help rejected. I've experienced it many times before, of course, like when a Christian bookstore refused to take my book on consignment. The reason given being that my "type" of Christianity wasn't what they wanted to promote in their store. I'm changing this post from here on, because when I originally wrote it I was a bit wounded. I've since realized that I could have sounded judgmental towards a fellow blogger that I was following. I apologize to the person who may have read it then - what I said wasn't very loving.

Although my posts have been mostly about my spirituality to this point, since I thought it necessary to be honest in letting people know where I'm coming from, I'm now going to go more into other areas as well, such as probable theories for causes of schizophrenia and what helps overcome. Sharing all I can to help bring healing and recovery is a joyful privilege for me.

Blessings,

Annie

Chakra Level: 110.24

Confidence Level: 28.33%

Number of words known: 81

Number of total words: 118

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
88.09	33.38	38.87	42.55	26.94	32.27	42.54

Text:

When I was in Ecuador last year, Mr. Money Mustache came up to me and said he was pissed off.

Someone had been asking him questions about FI but when the discussion started getting into the numbers, the person said that they'd just save those questions for me.

MMM jokingly asked me if that means he's lost his edge? Has writing about happiness and more philosophical topics resulted in him not being viewed as a financial mastermind anymore?

Obviously he was just messing around and wasn't really angry/concerned but this topic actually came back up a few days later.

After I finished my presentation to the group, Mr. Money Mustache raised his hand and said, "Fientist, it seems you too are turning soft in your old age. Do you not care about money or numbers much these days either?" Turns out, my presentation had nothing to do with numbers. No graphs. No math. Nothing even close. I laughed and said, "Yes, it's weird but I don't think about numbers much at all now and I'm starting to realize that money is the least-interesting and least-important aspect of this whole journey." I've built my whole blogging career on numbers so it's been an unexpected turn of events, to say the least! After the presentation, I was chatting with some of the other attendees and was saying how I wondered why I stopped focusing on money as much. Thankfully, one of the attendees offered a perfect explanation for it – Maslow's hierarchy.

Maslow's Hierarchy

Maslow's Hierarchy of Needs shows what motivates humans, the relative importance of each need, and the order in which the needs are generally fulfilled.

Maslow's Hierarchy of Needs

At the bottom of the pyramid, the first human needs that have to be met are those necessary for human survival (e.g. water, food, etc.). Once a person's physiological needs are met, focus then turns to safety. It's obvious safety is less important if you don't have fresh water to drink so you'd need to focus first on finding water before then getting somewhere safe from predators. That doesn't mean you're not on the lookout for hiding places or shelter when you're searching for water, it just means water is your first priority and the other things are less important. So that's a really brief summary of how Maslow's hierarchy works. I'd say a similar hierarchy exists for financial needs as well. Here's what I came up with:

Hierarchy of Financial Needs

At first, you need to pay for all the things that you need to survive. If you have to use debt to do that, it doesn't matter because you need to buy food to stay alive so that's what you do. That is not sustainable though so eventually you'll need to make enough money to pay all your expenses. You could live quite happily at the Sustainability level for a while but you're not necessarily safe there. One small injury or unexpected expense could derail everything so ideally you'll soon reach the Accumulation level. On this level, you make more than you spend so you are able to save for future unplanned expenses. The next level is Independence. Since it's unlikely you will be physically able to work your entire life, you eventually need to get to the point where you can pay all your expenses without working. Finally, you reach the Utilization phase. This is when you know you'll never run out of money so your sole financial focus is aligning your spending and giving (to charities, heirs, etc.) with your life's purpose.

Usefulness of the Pyramid

The Hierarchy of Financial Needs is useful when talking about finances with other people because it allows you to be more understanding of different situations and more empathetic. For example, it's easy for someone on the Accumulation level to say, "Payday loans are bad and you should never use them" but if you are at the Survival level and have no other way to put food on the table for your kids, it may be something you are forced to consider. And although we'd all like to think that Independence is what everyone should be focused on, someone who is at the Sustainability level may be too stressed to even think about something like that because they're just one unexpected expense away from big problems. So they first need to focus on increasing their income and/or lowering their expenses so they can reach the Accumulation level and then once they've built up a bit of a buffer (i.e. an emergency fund), they can think more about investing and pursuing FI.

My Journey

When I started writing this blog, I was on the Accumulation level so my primary focus was getting to the Independence level as quickly as possible. The problem was, I don't even think I realized there was a level above Independence that I should have also been thinking about and planning for. In hindsight, this was a big mistake. Because the real goal isn't to have a lot of money. As the idea of FIRE becomes more popular, it seems people are becoming more obsessed with FI and all they want to do is talk about FI, read about FI, and hang out with others pursuing FI. This is useful for improving your finances but may cause you to miss the real point. Financial independence isn't life, it's just a tool you can use to help you live a life that's most meaningful to you. It's a means to

an end, not the end itself. The more you think about the top level of the pyramid while you're on the journey to financial independence, the easier and more enjoyable that journey will be. After achieving FI and accumulating more money than I had planned, I can now see the Utilization stage more clearly. Is it the top of the pyramid? I'm not sure but it's the level I'm focused on now and it's what MMM has already been brilliantly writing about for years.

What is the Meaning of Life?

Before we can figure out how to best use our money for our life's purpose, we have to figure out what that is first. So what is the meaning of life? That's the big question and I'm still not exactly sure but I have a few theories...

Immortality

At first, I thought the point was to achieve some sort of immortality. If you're immediately forgotten after dying, isn't that like you were never here in the first place and isn't that pretty meaningless? To achieve immortality, or at least lengthen your impact on the world, I thought there were a few options:

Having Kids

Having kids seems to be the default option. Of course your kids are going to remember you and then you have the added bonus of passing on some of your DNA to future generations. Kids don't guarantee immortality though. Do you know anything about your great-great-great-great grandmother? No, me either.

Doing Something to Be Remembered

What if you instead do something memorable? Einstein has been dead for over 60 years but he still lives on due to the things he accomplished when he was alive. I thought this was the answer for a long time because it seemed like the best way to achieve something close to immortality. But even that plan isn't great either. Memories fade. Civilizations die out. Planets are consumed by their suns. Does it really matter being remembered for slightly longer than the average person? Probably not. When you realize how insignificant we are in the universe and how short our species has actually existed, can one little human actually make a noticeable dent in the grand scheme of things anyway?

Ignorance is Bliss

So if immortality isn't the point, what is? I'm not sure but I know one thing...these are very heavy things to think about! I hate to admit this but at times during the past year, I've actually been jealous of people still in the daily grind because they're too busy and preoccupied with normal life to think about stuff like this. Everytime I think that though, I remind myself that it's actually an incredible priviledge to face these big questions while I still have so many years (hopefully) to make adjustments and change course, if necessary. Because I think everyone faces these questions eventually but unfortunately, many people face them on their death beds, when they are out of time and options.

There is No Point

The conclusion that I eventually arrived at was that there may not be a point. It's likely our existence is just a happy accident so the only point is to enjoy it as much as possible and help others enjoy it too. That's it. If I was religious, maybe I'd think there's a higher purpose or more to come after this life on Earth but I'm not, so I don't. At first, this conclusion may seem sad or anticlimactic but it's actually very freeing. No pursuit is more noble than any other so when you achieve FI and have the power to do whatever you want, you can just try to live the life that makes you happiest (assuming it doesn't infringe on the happiness of others). Any external pressures that have influenced your life in the past can all be ignored because no lifestyle is better than any other so just live the life you want to live.

What Life Do You Want to Live?

Figuring out what that life is though is also very tricky! Just like people don't know what makes them happier, they also don't know what they want out of their lives. For example, I thought I wanted to travel all the time after leaving my job but I tried it for a bit and realized that long-term travel isn't as fulfilling as I expected.

Kobe Beef

This Kobe beef in Kobe, Japan was pretty damn good though. What I've now realized is that the reason traveling didn't make me happier is because it didn't align with my own personal purpose.

What's Your Purpose?

So how do you figure out your purpose? My buddy J.D. Roth from Get Rich Slowly and Money Boss suggests you try to craft a personal mission statement. Can you boil down what you want your life to be in just one sentence? After a lot of thought, I was able to come up with a sentence and here it is: I want to learn and improve my skills so

that I can create things that have a positive impact on my life and as many other people's lives as possible. Looking back at my past and reflecting on some of the best and most rewarding things I've done, they all seem to fit that one sentence. This is why travelling wasn't as fun and fulfilling as I thought it would be. Sure, I had a great time experiencing new cultures, eating new food, seeing interesting sights but I wasn't improving my skills (besides maybe my travel-hacking skills), I wasn't really creating anything, and I wasn't doing anything that positively impacted a lot of other people. The Mad Fientist, on the other hand, does tick all those boxes and that's why I still work so hard on it and get so much pleasure from it 6 years after I started it. I'm constantly trying to improve my writing/interview skills/etc., I frequently create new articles/podcast episodes/web applications/etc., and all those things hopefully help millions of other people improve the quality of their lives.

Asking Why

If the personal-mission-statement approach doesn't work for you, another way to figure out your purpose is to identify something you've done in the past that was particularly fulfilling and then ask yourself why it was fulfilling and then keep asking yourself, "Why is that fulfilling?" until you can't answer the question anymore (thanks to Vicki Robin for sharing this tactic with me when we were together in England last year). Here's how it works...

As I mentioned, the Mad Fientist has been incredibly rewarding so I'll choose that (since you're all obviously familiar with that project as well).

Why has the Mad Fientist been fulfilling?

Because it has allowed me to develop my writing skills, interview skills, and programming skills while helping myself and thousands of others reach financial independence sooner. Why is that fulfilling? Because it's allowed me to learn new things, improve my skills, and help myself and others start living lives that are more enjoyable and purposeful. Why is that fulfilling? Because it's allowed me to learn new things and improve my skills while also making my life and the lives of many other people better. There it is! Asking "Why?" eventually got me to that mission statement I mentioned above.

Future Projects

Once you have a defined purpose, you can judge future plans against that purpose and figure out if what you plan to do has a high probability of improving your life or not. I've actually been working for the past year on a secret

project that I'll share with you soon and luckily, it fits my purpose so that's why I know it's worth the effort and will likely be more rewarding than simply doing something fun like traveling around the world.

Moving to the Next Level

So that's where my head's been lately. I definitely don't have everything figured out and as I continue moving up to the next level of the pyramid, I'm sure there will be new challenges to face and interesting questions to try to answer. As always, I'll share what I learn along the way and don't worry, I still love numbers so expect plenty more of those in the future as well :) How about you? What kind of life will be most rewarding to look back on? What do you plan to do after you retire? Do those plans align with your purpose?

These are important questions to answer, no matter where you are on your journey to FI, so give them some thought and if you come up with your own personal mission statement, please share in the comments below to help inspire others!

Chakra Level: 55239.29

Confidence Level: 60.45%

Number of words known: 367

Number of total words: 683

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
72.69	55.05	5.18	47.17	46.47	55.37	26.85

Text:

I know I'm blessed to have found total recovery from my particular illness, schizophrenia. Knowing the terrible suffering that so many still go through keeps me from just enjoying my freedom, without working hard to help others to reach a similar goal. Although I'd be foolish and wrong to suggest that all who read my blog will experience total healing, I believe that many will find greater peace as they put into practice the godly wisdom and practical insights I learned over the years I was ill. Because peace of mind, soul and spirit were the positives needed to bring recovery

to my brain, I'll share how I personally overcame many of the fears, confusions and doubts I experienced. I'll also share 3 specific triggers that began my illness, and that of others, though the circumstances were different.

For those reading this who are partially recovered, but on medication and doing well, I don't recommend or promote discarding medications - that is only for you and your doctor/psychiatrist to decide. However, I do hope that some will read what helped me and, perhaps be surprised to find the reversal of the chemical changes that your brain needs.

Since I'm not an ordained pastor or a mental health professional, I need to state that, as author of this blog, I take no responsibility for any consequences from application of the information read here. I can only give the assurance that, all the suggestions and theories I write about, come from my personal faith experience and through studying different psychiatric publications - and only what helped lead to my healing. Even the medical and mental health professionals don't have all the answers for the growing epidemic of mental illnesses we see today. I hope to get them to listen to what I know worked for me and others that I have peer counselled and spiritually encouraged over the past 12 years. A year of psychiatry, courses and experience in counselling, and pastoral care under hospital chaplains, have all helped me to empathize with people who suffer pain of any kind. The desire to bring others to soul rest and a sound mind has become my greatest life's work at present.

To begin this process, I have become a member of my city's Mental Health Advisory Committee. My hope is to change the opinion of many in the mental health community, who still believe that medication is a must for all, for life. Please pray that I'll be able to do this in a patient and loving manner.

If you have checked out my website, where I share about my book, In HIS WAY and HIS TIME, you'll know my story is endorsed by a Christian psychiatrist. My blogging will likely include much of what I wrote in the book, but in small increments, which may be easier for some to read and absorb.

Please join me on what may be your journey to wholeness.

Blessings,

Annie

Chakra Level: 679.28

Confidence Level: 49.04%

Number of words known: 154

Number of total words: 256

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
71.52	51.26	21.84	40.88	33.14	50.36	14.73

Text:

There is much confusion in the mental health field today. Some of it revolves around what recovery is. One idea is that recovery involves having a partial healing, with the ability to live a meaningful life on medications. The other, means total recovery, with no need of medications.

There are many blogs and websites available for those who accept the first description of recovery. My blog is to reach those who still have a glimmer of hope for an eventual total healing. My own experience with overcoming schizophrenia will be the subject of most of my posts. There seems to be a lack of others sharing their stories, which is a shame because I know many sufferers do finally and totally recover. It may be of interest that, although those who remain ill complain of the stigma towards them, we who find freedom also experience negative stigma (of a different kind). This can make us uncomfortable about speaking out.

If we try to help others overcome, we are told we are giving false hope. I've even had a health professional tell me that I either didn't have schizophrenia or wasn't healed. This attitude goes against a statement in a Schizophrenia Society booklet that says that the brain can recover even into the second or third decade of illness.

Although medications help alleviate our troubles, they don't heal - they are a bandaid only. Our psychiatrists hope that the medications given will give us the chance to work towards our own healing in time.

I hope you will continue to visit my blog, as I do my best to share with you all that I learned and put into practice to find my own healing.

Blessings,

Annie

Chakra Level: 190.82

Confidence Level: 43.07%

Number of words known: 109

Number of total words: 164

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
79.86	40.82	35.13	48.01	15.17	36.55	34.32

The following samples are from DRC.U,

Text:

I love hiking. The weather is finally warming up and it's perfect hiking. I believe hiking is a great way to clear your mind and get away from the hustle and bustle of life. Life is great but let's be real, it can affect everyone mentally and physically. Hiking allows us to be in "cleaner" air and allows our minds take in all senses in a way we wouldn't normal do so on Monday through Friday work schedule. Hiking is also great for our bodies and provides us with a fun way to exercise and stay active. These are just some of the reasons I love hiking.

Chakra Level: 106.53

Confidence Level: 36.58%

Number of words known: 71

Number of total words: 71

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
90.79	47.39	52.04	17.24	35.36	52.73	37.42

Text:

Ten years ago today, I tweeted for the first time. News of the fledgling venture - then only a few months old, with just over 50,000 users - had reached my corner of blogland, and for a few days there was a small flurry of sign-ups, as we all took turns at answering the question we were being asked: not "What's happening?", nor its predecessor "What's on your mind?", but simply "What are you doing?" For those first few months - before @replies, hashtags, retweets, automatically abbreviated URLs and integrated image hosting - we cleaved closely to the strictures of the question, and answered it mainly with present participles. It's a creative project, we told ourselves: a series of pauses in the day, when we homed in on the here and now, and shared snippets of our realities. Tweets stood alone; conversations were largely frowned upon. None of us foresaw what Twitter was to become. I had my first hunch when my partner K - who, rather to my dismay, had never bothered much with blogs - became fascinated with my timeline, stealing glimpses whenever he walked past the laptop. I couldn't quite work out why, when blog posts had left him cold, tweets were drawing him in. But it was happening everywhere, with escalating rapidity, especially after people in the public eye started following the lead of early adopters such as Stephen Fry. Gradually, the scope of the service expanded. Chatting became easier, and less irksome to onlookers. You could keep up with new blog posts, freed from the bother of feed readers - or you could micro-blog right here, with pics and links. You could commune with celebs. News stories might break here first. Via searches and hashtags, you could gauge responses to issues of the day. You could raise your profile, promote your work, build your brand. The whole world was here now. With minimal effort, you could stay informed, tracking the zeitgeist, swimming at the front of the slipstream. Spambots were a nuisance, trolls a rarity. That soon switched around. Things started getting nasty. Outrage became a common currency. There were many casualties. But on we scrolled, as our reflective pauses and quick quips mutated into an ever-present dripfeed of hyperbole and hot takes. Ten years on, the world's a darker place. Some of us have been here before; the Thatcher-Reagan years felt like a tunnel from which we might never emerge, for instance. But then, there have always been two realities: the global, led by news stories, and the personal, informed by our immediate surroundings and experiences. The former has always had a bearing on the latter, of course - but it feels now as if the boundaries are blurring. By bleeding the two together so seamlessly and efficiently, Twitter is constantly thrusting harsh outer realities into delicate inner receptors. This no longer feels healthy or useful. Twitter largely stopped being fun a long time ago; now, it feels like a drain on the collective well-being. I'm dealing with it by re-compartmentalising. I'll keep up with the news like I used to, at ring-fenced intervals. For the rest of the time, I'd rather be present in my own reality -

which, to my great good fortune, happens to be a pleasant place to dwell. And I'd like to recover some of my lost attention span, too. Long reads. Books. Analogue media in general. I can live with being second to breaking news. Hell, I can positively thrive without having whatever fuckwittery the fuckwits are spouting today repeatedly shoved under my face. I've seen enough Express/Mail screengrabs, Hopkins/Mensch smackdowns and Johnson/Trump GIFs for one lifetime, thanks all the same. Besides which, ten years is long enough to be doing the same thing every day. Most of those formerly blogging early adopters moved on yonks ago, and my real-life friends are almost all on Facebook (which has its own multiple irritations, but compensates for them with companionship, conversation, and a "Hide All From...;" option which I take constant glee in wielding). I no longer have stuff to pimp, or a profile to maintain. I've been planning to do this for weeks. As the old saying goes, it feels like unchaining myself from a lunatic. Adieu, Twitter. We're done.

Chakra Level: -33.47

Confidence Level: 56.11%

Number of words known: 188

Number of total words: 389

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
73.31	49.96	22.67	41.40	26.37	58.71	22.43

Text:

This week we have a newlywed woman whose husband plays way too many video games, and it's affecting their sex life. Game over?

Some people have problems that require delicate advice from a qualified professional. Others just need a random guy on the internet to kick 'em in the teeth (with honesty, that is). I'm the latter. Welcome back to Tough Love.

Note: I'm not a therapist or health professional of any kind. People ask for my advice and I give it to them. End of transaction. If you have a problem with it, feel free to file a formal complaint here. Now that that's out of the way, let's get on with it.

"Hi Patrick.

My husband and I have been married for six months, but the last two months has been miserable. My husband is a gamer (this is a non-issue for me, I respect his hobbies) and has completely put our marriage, and by extension me, as a lower priority than gaming with his buddies. He always games with his long-time gaming friends, often taking up nights from 8 p.m. to long past I have fallen asleep. I would ask him to spend time with me during this time, but that would often lead to fights and him telling me I never let him have fun or enjoy doing things he likes (ouch). Whenever he is gaming he is short, curt, and very rude to me. I want him to have fun but I also want to be respected and to be a priority.

I no longer ask him to spend time with me or ask if he wants to do things. I tell him what I am doing and leave the door open. However, sex has all but stopped and we fight about it. Up until two months ago we were having sex four to five, sometimes every day of the week in some manner, but now I am feeling unfulfilled in that realm. He says that he finds sex "dull" now, but couldn't give me any ideas on how to change or improve it. He then said I don't initiate enough, when I pointed out that when I do he always has an excuse or turns me down.

He always gets mad or upset and his instinct is to push me away. When the prospect of gaming with his buddies comes around, I am suddenly pushed away and am seen as an annoyance. I don't know what to do. He does not want to see a doctor for depression and refuses to go to a therapist to talk this out. He rarely opens up to me as it is when he is upset.

I want my marriage to be a success, but ugh. Please,

Terrified Newlywed"

Hey Terrified Newlywed:

He's definitely taking your marriage for granted, TN. He thinks he's crossed some imaginary checkpoint in your relationship and doesn't have to try anymore. You need to make him understand that's not the case.

However, you've also dug yourself into a bit of a hole here. You inadvertently made something else he loves out to be the enemy. You may respect his hobby to some extent, but in his mind, all of your complaints probably make him feel that you don't like that he plays video games. He thinks you hate something that he feels is a part of who he

is; something that allows him to spend time with friends he doesn't get to see in person anymore. There are probably several layers to his reluctance to have sex (over-indulgence of escapism and low physical activity being some of them), but it's almost as if he's developed a grudge or is withholding sex as some kind of punishment—like he's mad at you for trying to take his toys away. No bueno.

As a gamer who's had his own fair share of issues like these in the past, I have a few ideas worth trying. First, do not talk to him about this stuff while he's gaming, or immediately after. Take the pressure off. It's clear that whatever it is he's playing primes him to be easily triggered into anger (all that adrenaline, yo), so save yourself the grief. Also, bringing these issues up while he's playing is only going to put him on the defensive and further make him feel like this is an attack on his hobby, as opposed to a problem with your relationship. Talk about this stuff when video games are the furthest thing from his mind.

Second, sit him and down and frame this problem in terms of your feelings so he knows this is serious. It's not "You're always this..." or "You don't do that...", it's "This makes me feel..." Get it through his thick skull that you're not being a nag, you're legitimately unhappy with the lack of intimacy in your relationship, and you're afraid you're drifting apart. Express to him that you really do want him to play video games because you know it makes him happy, but that you also want him to show you that you make him happy as well.

Third, see if you can find a way to compromise here. Ask him if he'd be willing to schedule his gaming time on a few specific nights every week, then leave the rest of the nights tentatively open for spending time together. Maybe if he knows he always has Tuesday and Thursday nights or whatever to play games totally uninterrupted and uninhibited, he won't feel like he has to steal away to get his gaming time in. Dedicated gaming time might lead him to being more open to do other things on non-gaming nights—like have sex.

But—and I can't stress this enough—it's important you actually make plans with him ahead of time for those non-gaming nights. It's never a good idea to wait for him to sit down to play and then ask him if he wants to do something with you. To him, sitting down and starting to play a game with friends is a social commitment. If he was at a friend's house you wouldn't interrupt and ask him to come home and hang out with you, would you? Don't hover around the house doing nothing, waiting for him to come dote on you, then get upset when he decides to sit down and blow off some steam. Plan some fun dates that get him off his ass and out of the house. Help him find the excitement

in the real world again. Maybe a little romance will help him remember why he fell in love with you in the first place, and remind him that sex is more fun than playing PUBG with his bros.

That's it for this week, but I still have plenty of blunt, honest advice bottled up inside. Tell me, what's troubling you? Maybe I can help. I probably won't make you feel all warm and fuzzy inside, but sometimes what you need is some tough love. Ask away in the comments below, or email me at the address you see at the bottom of the page (please include "ADVICE" in the subject line). Or tweet at me with #ToughLove! Also, DO NOT EMAIL ME IF YOU DON'T WANT YOUR REQUEST FEATURED and PLEASE KEEP IT SHORT. I do not have time to respond to everyone just for funsies. 'Til next time, figure things out for yourself.

Chakra Level: -289.18

Confidence Level: 53.9%

Number of words known: 274

Number of total words: 451

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
59.42	48.2	8.38	41.17	55.28	49.17	13.24

Text:

I love to stay alone cause I feel that I can do more and big things just if I worked hard and with love but I stay most of time (if I'm not at home) with friends and that because they need me sometimes to share them up and to be the friend that they think I'm.

Chakra Level: 834.43

Confidence Level: 37.9%

Number of words known: 41

Number of total words: 41

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
72.28	50.85	5.13	52.01	36.24	34.51	39.52

Text:

Family is the most important thing in my life. Over the years it's been a struggle to keep my family together but it is well worth it. I'm not quite sure if my family feels the same way or not but I love and cherish them every minute of everyday.

Chakra Level: -86.94

Confidence Level: 66.31%

Number of words known: 40

Number of total words: 40

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
56.79	19.40	56.80	58.65	24.34	47.84	14.38

Text:

My job can be very enjoyable as well as extremely stressful. I am very knowledgeable at my job which makes me perform my duties effectively and efficiently. I've been doing this job for several decades so I must find it enjoyable. However dealing with the many personalities at times tries my patience. I deal with customers , employees , vendors , sales people , delivery personnel , truck drivers , State and City Inspectors as well as supervisors / bosses. The last group is the most difficult because they always think that they are right when they are not. In my professional opinion the supervisors are afraid of their jobs so they try to make everyone else appear to be wrong so that they look good. There is a lot of negative feelings towards the upper management because I believe that the Owner is selfish and he surrounds himself with only those people who are "yes men". Over the years I've learnt that life is a lot more than what the majority wants you to think it is about. My rock and shining star has been and will always be my amazing wife who has taught me so much. I'm eternally grateful and consider myself the luckiest man alive.

Chakra Level: 846.86

Confidence Level: 38.3%

Number of words known: 113

Number of total words: 134

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
79.57	40.26	22.34	43.64	32.3	62.24	28.58

Text:

As I was clearing these twenty tables with some speed, I found that filled pie trays were being taking to back of house but empty replacements were not appearing. I began to spend some time walking with large piles of dishes to find other people's pie racks that still had some room. As I pushed luck and common sense further, I had at one point in the night two arms full of stacked plates and no pie trays to set them on. At the moment I realized my irrationality, Katie walked past me with thermoses in her hands. As is my habit, I asked her because she was literally the closest person to me and my teetering stacks of dishes, I asked her if she might grab pie trays to replace the cleared ones. She responded to me in what I interpreted as a sing-song dismissive voice and said something to the effect of You know where they are, I can't do that right now, I have to fill coffees. This upset me greatly.

Chakra Level: 424.00

Confidence Level: 47.62%

Number of words known: 72

Number of total words: 113

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
81.84	53.14	29.08	16.23	45.96	56.35	34.22

Text:

Okay, so the other day it was raining really hard here and it had been all night. It kept waking me up, which was kind of annoying because for some reason I also had not slept well the night before. Anyway, so I had to be at work at 10 and I assumed that the rain would cool down by the time I got to work. I thought to myself, though, that I should try and find my umbrella just in case. BUT, I was already running late so I was kind of stressed and, of course, I have no idea where I put the umbrella. I thought maybe it's in my car and I'll look when I get to work. Well, it wasn't in my car so I had to walk the 5-7 minutes from my car to work in the pouring rain. I realized half-way through the trip that maybe I should have put my backpack underneath my water proof coat but by that point it was too late; the backpack was soaked, as was everything else on my person. At that same moment, the rain picked up from an outright downpour to something so much worse--which at that point I didn't think could happen. So anyway by the time I finally got to work, my pants were soaked, my shoes were soaked, my backpack was soaked. It was a miracle my laptop and iPad managed to not get super damaged. It took almost the entire day for everything--including my shoes and pants--to finally dry. It was such a ridiculous day.

Chakra Level: 49.06

Confidence Level: 52.07%

Number of words known: 94

Number of total words: 130

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
63.19	64.60	26.08	11.03	49.29	66.22	39.38

Text:

I love to imagine and create, as it is a fun way to past the time that can truly open the mind to new and fun ideas. There are times when I worry I chose the wrong major, usually when the projects accumulate along with stress. I think to myself, would I not be happy earning a stable income with just enough surplus to own a computer and occasionally buy a book that I want? I enjoy coding, and I enjoy circuitry and learning how we have come to implement computers

in almost every aspect of life. Still, we all have doubts every now again, and answering them, may take years, but those answers are necessary to figuring out who we are.

Chakra Level: 366.83

Confidence Level: 31.61%

Number of words known: 62

Number of total words: 87

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
66.04	44.11	9.12	45.96	43.44	44.17	17.19

Text:

Physical activity is excellent for the brain, body, and soul. Walking 30 minutes a day can have numerous health benefits. Exercise, including aerobic and anaerobic, can have physiological, physical, and phycological benefits during and after the activity. Historically, we needed to fight to survive, but now with the numerous implications of the technology we have created, and the abundance of resources in the US, we may have developed less of a need for physical activity and exercise. Will it have negative implications on us as individuals and as a society?

Chakra Level: 367.77

Confidence Level: 32.91%

Number of words known: 34

Number of total words: 55

Earth Chakra	Water Chakra	Fire Chakra	Heart Chakra	Sound Chakra	Light Chakra	Cosmic Chakra
73.00	47.29	19.68	65.34	36.44	65.56	26.93

APPENDIX I

This appendix is primarily to show the incompleteness of the system. It is important to note that words can be grouped in many different ways. Identifying words as “discourse markers” or “transitional phrases” or other purpose of word use may help to improve the applicability of this analysis. There are a few mistakes in the tagging of some words. Again, this just changes the perspective of the system.

The following words were tagged as POSITIVE EARTH:

'personalities', 'witty', 'lunches', 'still', 'because', 'wouldn't', 'dog', 'maybe', 'borrowed', 'doesn't', 'eyes', 'they', 'risk', 'investigator', 'blow', 'attempt', 'bpd', 'vendors', 'giving', 'out', 'stand', 'confidence', 'self-destruct', 'hormones', 'wrong', 'days', 'be', 'but', 'appears', 'hospital', 'post', 'go', 'patient', 'soppy', 'westernized', 'crawling', 'massive', 'keyed', 'floating', 'seasonal', 'allowed', 'resources', 'compliance', 'ended', 'grown', 'were', 'binge-purge', 'debates', 'dependency', 'gets', 'anyone', 'active', 'anything', 'rich', 'comment', 'position', 'keeping', 'killer', 'simply', 'later', 'staring', 'routine', 'right', 'circling', 'problems', 'viewpoint', 'meeting', 'ran', 'them', 'make', 'antidepressant', 'alert', 'able', 'adventure', 'must', 'steps', 'judge', 'provided', 'ones', 'often', 'hearing', 'confused', 'openness', 'hides', 'stormed', 'effect', 'imagery', 'landmark', 'control', 'handed', 'won', 'kids', 'side-tracked', 'easier', 'hope', 'contacted', 'say', 'didn't', 'goals', 'forgot', 'faults', 'blip', 'focus', 'broken', 'cuz', 'last', 'perfectly', 'off', 'writing', 'physically', 'moon', 'self-medicates', 'army', 'relaxed', 'every', 'general', 'adhd', 'miles', 'show', 'worse', 'myself', 'we', 'to', 'made', 'speak', 'many', 'alone', 'ends', 'resurgence', 'security', 'did', 'moments', 'stabilising', 'personality', 'seeing', 'upset', 'start', 'stay', 'group', 'securing', 'weeny', 'dark', 'system', 'process', 'side', 'slow', 'life', 'appear', 'back', 'space', 'all', 'foregone', 'across', 'issues', 'breeze', 'tend', 'pushing', 'being', 'places', 'put', 'drugs', 'what', 'failing', 'dependence', 'essence', 'probably', 'argument', 'struggle', 'until', 'opinion', 'the', 'or', 'any', 'withdrawal', 'edge', 'wants', 'window', 'power', 'extremely', 'reduced', 'eaten', 'while', 'drug', 'refusal', 'decades', 'little', 'dysphagia', 'effectively', 'rang', 'hiking', 'requirement', 'moved', 'hard', 'syndrome', 'effort', 'class', 'spouse-less', 'away', 'spent', 'extraordinarily', 'least', 'unveiled', 'part', 'sang', 'restart', 'again', 'summary', 'success', 'planning', 'exclamation', 'deposit', 'useful', 'once', 'old', 'great', 'hurts', 'message', 'voice', 'surrounded', 'finish', 'stupid', 'dazed', 'track', 'prepared', 'coping', 'perform', 'crashing', 'another', 'dose', 'round', 'big', 'worker', 'binged', 'difficult', 'tough', 'medicine', 'tacky', 'other', 'ready', 'pack', 'train', 'addict', 'your', 'millions', 'falls', 'depressed', 'shout', 'of', 'public', 'else', 'punch', 'truck', 'capable', 'when', 'type', 'yourself', 'god', 'panic', 'things', 'couldn't', 'and', 'bulimic', 'kicks', 'escape', 'lot', 'strangers', 'is', 'cover', 'can', 'random', 'though', 'assessed', 'using', 'see', 'then', 'through', 'autistic', 'for', 'noticed', 'self-image', 'disability', 'over-stimulation', 'caps', 'cmht', 'fighting', 'industries', 'job', 'damaging', 'additionally', 'tests', 'extra', 'state', 'cope', 'conclusion', 'bearly', 'person', 'a&e', 'mask', 'trust', 'wandering', 'self-harm', 'after', 'fatigue', 'believe', 'taking', 'apply', 'earlier', 'walked', 'end', 'freedom', 'respected', 'bridge', 'now', 'senses', 'positive', 'chronic', 'should', 'free', 'bipolar', 'threatening', 'pain', 'have', 'everywhere', 'patriotic', 'very', 'bed', 'wish', 'night', 'gp', 'skydiving', 'support', 'had', 'withdrawing', 'pointed', 'happens', 'mean', 'several', 'psychiatrist', 'numb', 'checks', 'huge', 'clean', 'most', 'jobs', 'embarrass', 'rock', 'usually', 'tasks', 'ever', 'however', 'feel', 'ensure', 'been', 'wtf', 'takes', 'aging', 'choose', 'normal', 'try', 'also', 'own', 'investigation', 'asperger', 'approached', 'knowledgeable', 'safe', 'house', 'fist', 'pressure', 'something', 'awake', 'sleeping', 'personnel', 'anybody', 'makes', 'dad', 'reliant', 'marks', 'going', 'leaf', 'call', 'take', 'course', 'argue', 'morning', 'affect', 'needs', 'kept', 'trying', 'summarize', 'suffer', 'missed', 'loan', 'guess', 'me', 'in', 'changing', 'calm', 'world', 'glad', 'she', 'real', 'energy', 'frustration', 'exhibiting', 'full', 'this', 'watching', 'next', 'girl', 'screw', 'bad', 'shut', 'sales', 'salvation', 'abandonment', 'plans', 'absence', 'water', 'complain', 'overcompensates', 'month', 'which', 'dealing', 'unknown', 'skipping', 'tablets', 'defense', 'continuing', 'lights', 'warning', 'situation', 'duties', 'packaging', 'corner', 'happen', 'tomorrow', 'danced', 'whinging', 'underlying', 'hold', 'fact', 'graduated', 'could', 'dragging', 'otherwise', 'really', 'shower', 'fill', 'hustle', 'efficiently',

'awareness', 'thrive', 'hack', 'healthcare', 'disaster', 'engaging', 'one', 'act', 'anxiety', 'helpless', 'may', 'medicines', 'designed', 'uttered', 'kind', 'supervisors', 'flight', 'fight', 'society', 'loud', 'mainly', 'deal', 'prepare', 'turned', 'ghastly', 'allow', 'hands', 'worked', 'went', 'interrupted', 'loss', 'yellow', 'everyone', 'too', 'diagnoses', 'need', 'afraid', 'humorless', 'day', 'nerve', 'reach', 'so', 'much', 'on', 'wind', 'more', 'necessary', 'changes', 'reasons', 'wall', 'consume', 'paranoia', 'bore', 'warming', 'needed', 'physical', 'inspectors', 'experienced', 'structure', 'blag', 'there', 'problem', 'rugby', 'identity', 'lies', 'find', 'depression', 'scarper', 'cold', 'yet', 'thinks', 'scared', 'alliance', 'from', 'nothingness', 'it', 'sent', 'fit', 'stuck', 'escaped', 'hard-earned', 'logical', 'death', 'worried', 'save', 'says', 'talk', 'where', 'normally', 'am', 'useless', 'if', 'baby', 'do', 'test', 'misuse', 'well', 'sack', 'these', 'continuously', 'seems', 'partly', 'their', 'drivers', 'less', 'salted', 'isn', 'lose', 'rent', 'school', 'loneliness', 'looking', 'services', 'admitted', 'furiously', 'who', 'honours', 'anti-aging', 'are', 'major', 'talking', 'risky', 'hi', 'loved', 'crying', 'pay', 'starting', 'matter', 'way', 'meant', 'bath', 'only', 'even', 'latched', 'cpn', 'ailments', 'happening', 'purged', 'moment', 'room', 'bloody', 'swallowing', 'today', 'self-harming', 'haven', 'swings', 'has', 'bosses', 'felt', 'don', 'temporary', 'stab', 'sit', 'return', 'locks', 'someone', 'annoying', 'kinda', 'terrible', 'hear', 'attacks', 'at', 'fall', 'want', 'ourselves', 'lord', 'alarm', 'grumpy', 'freaking', 'defender', 'money', 'ill', 'almost', 'assessment', 'might', 'city', 'eyeliner', 'suffers', 'blah', 'enter', 'finds', 'said', 'stomach', 'during', 'slide', 'nearby', 'strong', 'hand', 'mortgage', 'medication', 'tries', 'us', 'fake', 'duty', 'people', 'drop', 'worry', 'matters', 'circumstances', 'live', 'mental', 'let', 'affective', 'head', 'athletic', 'experience', 'leaves', 'sometimes', 'suicidal', 'sleep', 'paddling', 'issue', 'saying', 'place', 'stuff', 'i', 'rational', 'degree', 'work', 'changed', 'straight', 'thing', 'bills', 'past', 'doing', 'along', 'cases', 'tired', 'face', 'burden', 'lazily', 'looks', 'drag', 'insurance', 'swollen', 'found', 'bodies', 'oh'

The following words were tagged as NEGATIVE EARTH:

'living', 'rooms', 'abuse', 'clocks', 'taught', 'f', 'saw', 'thankfully', 'nice', 'dreaming', 'suddenly', 'they', 'park', 'entitled', 'mood', 'rests', 'decrease', 'prescription', 'fluke', 'spending', 'stopped', 'pan', 'hat', 'muttered', 'purpose', 'none', 'mummy-like', 'half', 'pills', 'having', 'calling', 'tramadol', 'proper', 'needless', 'ocean', 'resitting', 'numbers', 'wishing', 'eating', 'depressing', 'sitting', 'information', 'frankly', 'fear', 'iceland', 'family', 'crashed', 'involving', 'reading', 'category', 'plan', 'know', 'tuesdays', 'creams', 'without', 'usual', 'zopiclone', 'lottery', 'volunteering', 'stressful', 'why', 'parent', 'except', 'considering', 'hit', 'ring', 'allows', 'witless', 'would', 'session', 'blogged', 'thyroid', 'absolutely', 'repeatedly', 'alive', 'eastenders', 'religion', 'conversation', 'degrees', 'thinking', 'floor', 'women', 'joe', 'ok', 'afternoon', 'given', 'seminar', 'nottingham', 'fine', 'provides', 'typed', 'cars', 'wil', 'turn', 'resent', 'opoid', 'inbetween', 'overstay', 'entered', 'told', 'uni', 'westminster', 'court', 'catch', 'visits', 'ther', 'hello', 'transcribed', 'criminal', 'decade', 'down', 'wat', 'cry', 'seaneen', 'cereal', 'coherent', 'surgery', 'lazy', 'phone', 'particularly', 'blanks', 'set', 'wake', 'with', 'appointment', 'country', 'london', 'its', 'cause', 'realise', 'come', 'slipped', 'master', 'eventually', 'sketch', 'toilets', 'psych', 'make-up', 'likes', 'words', 'note', 'known', 'flat', 'lucky', 'describe', 'truly', 'details', 'cheerios', 'listening', 'already', 'undergraduate', 'laughs', 'tended', 'just', 'mooched', 'came', 'american', 'limited', 'present', 'university', 'quickly', 'admit', 'understand', 'sentence', 'against', 'notes', 'nami', 'activities', 'count', 'dani', 'adopting', 'benzodiazepines', 'exercise', 'leans', 'helping', 'self-harmed', 'managing', 'apparently', 'multifamily', 'fraud', 'months', 'believing', 'mind', 'ultimately', 'keep', 'anti-wrinkle', 'moods', 'self-harmer', 'painkillers', 'anti-depressants', 'taken', 'reply', 'ruth', 'party', 'endlessly', 'prefix', 'telling', 'stats', 'tell', 'as', 'phase', 'intern', 'karen', 'psychiatrists', 'our', 'enjoyable', 'happy', 'research', 'lectures', 'co-codamol', 'nearly', 'slept', 'waiting', 'west', 'doctor', 'uncared', 'ringing', 'lost', 'sounds', 'name', 'others', 'air', 'wail', 'got', 'cream', 'move', 'weirdo', 'joy', 'boyfriend', 'teach', 'codeine', 'years', 'times', 'slightly', 'blood', 'specifically', 'reason', 'cushioned', 'height', 'lemonade', 'comforted', 'crises', 'hate', 'before', 'meet', 'no', 'paying', 'friday', 'friends', 'coffee', 'etc', 'customers', 'counter', 'run', 'manner', 'frying', 'atheist', 'midst', 'knows', 'towards', 'that', 'year', 'pleading', 'husband', 'congress', 'dream', 'sits', 'met', 'although', 'history', 'true', 'under', 'yesterday', 'gone', 'venlafaxine', 'receive', 'drink', 'total', 'short', 'totally', 'grass', 'moan', 'clients', 'think', 'thought', 'seriously', 'reports', 'sick', 'bustle', 'same', 'redundancy', 'instead', 'beginning', 'figured', 'seemed', 'comes', 'soon', 'hadn', 'wrote', 'number', 'allison', 'worth', 'smiley', 'buying', 'happier', 'important', 'everyday', 'feeling', 'comedy', 'especially', 'panicked', 'following', 'groggy', 'club', 'script', 'angry', 'decided', 'whatsoever', 'help', 'up', 'green', 'blog', 'learn', 'plant', 'into', 'laugh',

'heard', 'cherish', 'such', 'mournful', 'week', 'laughing', 'her', 'starbucks', 'ages', 'cut', 'over', 'thirsty', 'received', 'smile', 'street', 'humiliation', 'final', 'sparkling', 'my', 'about', 'those', 'till', 'heart', 'frame', 'you', 'lay', 'm&m', 'relocate', 'ahead', 'lunch', 'terrified', 'change', 'professional', 'genuinely', 'whenever', 'under-grad', 'he', 'miffed', 'symptoms', 'share', 'schedule', 'him', 'reflect', 'hardest', 'longer', 'revision', 'rather', 'standard', 'england', 'illicit', 'english', 'above', 'dvd', 'look', 'read', 'ideas', 'student', 'everything', 'making', 'swear', 'dental', 'monday', 't', 'temazepam', 'humor', 'battles', 'passport', 'wasn', 'seem', 'substance', 'far', 'addictive', 'otc', 'clothes', 'camden', 'employees', 'become', 'by', 'creamer', 'doze', 'studies', 'than', 'grapefruit', 'mention', 'food', 'sean', 'hot', 'running', 'claims', 'graduate', 'due', 'girlfriend', 'two', 'soul', 'either', 'therefore', 'treat', 'below', 'phobic', 'me', 'dealt', 'beautiful', 'welcome', 'happiness', 'derbyshire', 'fed', 'hell', 'thursday', 'together', 'case', 'thrown', 'uborka', 'yard-less', 'leave', 'used', 'control-freak', 'sarcastically', 'whether', 'cares', 'new', 'coming', 'packet', 'means', 'health', 'whole', 'like', 'defined', 'consensus', 'mentally', 'pretzels', 'proud', 'apartment', 'wanted', 'truth', 'advanced', 'summarized', 'film', 'shaky', 'honestly', 'self-pitying', 'hasn', 'minds', 'lecture', 'sedatives', 'lips', 'relapse', 'asked', 'internet', 'post-graduate', 'actually', 'better', 'bizarre', 'girls', 'fun', 'hypothyroidism', 'story', 'pub', 'possibly', 'delivery', 'around', 'how', 'aren', 'snakes', 'freakily', 'nothing', 'cup', 'adoption', 'alcohol', 'covered', 'tube', 'content', 'easily', 'primarily', 'different', 'south', 'fault', 'deep', 'bar', 'give', 'ugly', 'home', 'minute', 'therapy', 'colorless', 'lately', 'always', 'buy', 'joyless', 'explain', 'three', 'clown', 'millionaire', 'underneath', 'stars', 'sunday', 'urge', 'arrived', 'child', 'unfortunately', 'medicaid', 'wonderful', 'incredibly', 'sense', 'gmt', 'unlike', 'here', 'africa', 'bells', 'crap', 'first', 'anonymous', 'honest', 'attorney', 'obnoxious', 'national', 'time', 'barman', 'called', 'curse', 'coke', 'list', 'good', 'long', 'patience', 'care', 'wobble', 'peach', 'stumbled', 'hypnotics', 'uch', 'exactly', 'randoms', 'request', 'pantry', 'recently', 'rewards', 'community', 'inadequate', 'joint', 'quite', 's', 'not', 'check', 'color', 'mondays', 'scotland', 'iced', 'throw', 'bit', 'newly', 'wait', 'sort', 'subject', 'weather', 'difference', 'parents', 'started', 'few', 'addicted', 'dance', 'cheap', 'lithium', 'spanish-language', 'define', 'hopeless', 'weird', 'sloppy', 'loans', 'knew', 'line', 'housemates', 'spoken', 'related', 'fulfilment', 'optimistic', 'clear', 'love', 'k', 'seven', 'minority', 'was', 'supervision', 'tablet', 'common', 'wave', 'weight', 'social', 'some', 'invisible', 'stop', 'will', 'sure', 'shambles', 'third', 'leaving', 'couple', 'a', 'ago', 'feels', 'email', 'forever', 'fits', 'win', 'surprising', 'sorry', 'an', 'jean', 'universities', 'carriage', 'mum', 'intelligent', 'lovely', 'bedroom', 'each', 'weekend', 'online', 'fridge', 'woke', 'get', 'plummet', 'dictation', 'convinced', 'drunk', 'advertised', 'whilst', 'bulimia', 'point', 'hour', 'distinctive', 'team', 'cried', 'accompanied', 'apologise', 'wednesday', 'fan', 'both', 'watched', 'contacting', 'surface', 'rest', 'referral', 'translated', 'northern', 'definitely', 'samaritans', 'trader', 'spiders', 'i.e', 'package', 'disorder', 'never', 'since', 'front', 'determined', 'anyway', 'introverted', 'anymore', 'sofa', 'getting', 'term', 'does', 'seen', 'formal', 'tea', 'remember', 'title', 'friend', 'aside', 'urges', 'career', 'onto', 'moral', 'finally', 'perfect', 'pretty', 'rolling', 'bet', 'abroad', 'discharge', 'herself', 'points', 'badly', 'close', 'i', 'worst', 'took', 'toilet', 'loves', 'medical', 'bolshy', 'girlies', 'australia', 'ideal', 'obamacare'

The following words were tagged as POSITIVE WATER:

'living', 'abuse', 'lunches', 'because', 'dog', 'nice', 'borrowed', 'maybe', 'dreaming', 'rests', 'spending', 'hat', 'confidence', 'hormones', 'be', 'having', 'appears', 'wishing', 'eating', 'depressing', 'massive', 'floating', 'allowed', 'resources', 'involving', 'family', 'reading', 'gets', 'active', 'comment', 'rich', 'keeping', 'simply', 'volunteering', 'stressful', 'routine', 'antidepressant', 'allows', 'absolutely', 'alive', 'degrees', 'adventure', 'women', 'must', 'ones', 'provides', 'cars', 'openness', 'effect', 'control', 'side-tracked', 'easier', 'goals', 'catch', 'visits', 'focus', 'perfectly', 'off', 'moon', 'relaxed', 'cereal', 'adhd', 'show', 'set', 'with', 'we', 'to', 'made', 'resurgence', 'its', 'come', 'moments', 'stabilising', 'personality', 'sketch', 'make-up', 'likes', 'note', 'lucky', 'stay', 'system', 'laughs', 'appear', 'came', 'space', 'all', 'activities', 'adopting', 'breeze', 'helping', 'fraud', 'places', 'believing', 'anti-wrinkle', 'what', 'essence', 'self-harmer', 'the', 'wants', 'party', 'telling', 'stats', 'extremely', 'as', 'tell', 'phase', 'intern', 'decades', 'our', 'enjoyable', 'happy', 'hiking', 'waiting', 'effort', 'away', 'spent', 'extraordinarily', 'ringing', 'again', 'success', 'planning', 'air', 'exclamation', 'got', 'once', 'move', 'message', 'joy', 'boyfriend', 'another', 'cushioned', 'lemonade', 'difficult', 'friends', 'ready', 'your', 'run', 'manner', 'depressed', 'frying', 'towards', 'shout', 'of', 'that', 'husband', 'dream', 'yourself', 'god', 'things', 'and', 'lot', 'receive', 'is', 'drink', 'can', 'random', 'totally', 'using', 'grass', 'see', 'autistic',

'for', 'self-image', 'over-stimulation', 'wrote', 'additionally', 'buying', 'person', 'happier', 'wandering', 'important', 'taking', 'feeling', 'walked', 'end', 'freedom', 'comedy', 'especially', 'now', 'senses', 'positive', 'decided', 'free', 'up', 'bipolar', 'blog', 'into', 'plant', 'everywhere', 'laugh', 'bed', 'wish', 'laughing', 'her', 'skydiving', 'had', 'over', 'happens', 'smile', 'checks', 'sparkling', 'huge', 'my', 'about', 'clean', 'heart', 'most', 'frame', 'lay', 'rock', 'm&m', 'feel', 'ever', 'ensure', 'been', 'ahead', 'takes', 'lunch', 'genuinely', 'change', 'normal', 'choose', 'whenever', 'share', 'own', 'reflect', 'longer', 'above', 'dvd', 'look', 'ideas', 'sleeping', 'making', 'seem', 'addictive', 'call', 'creamer', 'than', 'grapefruit', 'food', 'affect', 'running', 'kept', 'girlfriend', 'soul', 'therefore', 'treat', 'me', 'changing', 'calm', 'beautiful', 'glad', 'she', 'real', 'energy', 'welcome', 'happiness', 'fed', 'full', 'watching', 'next', 'girl', 'used', 'sarcastically', 'salvation', 'new', 'water', 'overcompensates', 'health', 'unknown', 'whole', 'like', 'skipping', 'pretzels', 'tablets', 'wanted', 'film', 'continuing', 'lights', 'lips', 'internet', 'better', 'danced', 'bizarre', 'fun', 'graduated', 'delivery', 'otherwise', 'shower', 'fill', 'adoption', 'thrive', 'awareness', 'healthcare', 'give', 'home', 'engaging', 'one', 'act', 'therapy', 'helpless', 'joyless', 'designed', 'kind', 'fight', 'millionaire', 'society', 'stars', 'loud', 'urge', 'deal', 'arrived', 'allow', 'incredibly', 'here', 'bells', 'too', 'first', 'day', 'so', 'more', 'curse', 'changes', 'good', 'care', 'consume', 'peach', 'physical', 'experienced', 'structure', 'exactly', 'rugby', 'pantry', 'rewards', 'depression', 'quite', 'from', 'iced', 'throw', 'fit', 'escaped', 'newly', 'hard-earned', 'subject', 'save', 'normally', 'dance', 'cheap', 'baby', 'sack', 'these', 'fulfilment', 'continuously', 'optimistic', 'seems', 'clear', 'drivers', 'salted', 'was', 'wave', 'school', 'looking', 'social', 'invisible', 'couple', 'a', 'who', 'feels', 'forever', 'fits', 'win', 'major', 'surprising', 'loved', 'crying', 'carriage', 'mum', 'lovely', 'bedroom', 'weekend', 'bath', 'online', 'get', 'even', 'happening', 'moment', 'convinced', 'room', 'drunk', 'distinctive', 'swings', 'has', 'watched', 'contacting', 'rest', 'someone', 'definitely', 'trader', 'want', 'since', 'ourselves', 'front', 'grumpy', 'almost', 'eyeliner', 'sofa', 'getting', 'enter', 'during', 'hand', 'tea', 'friend', 'urges', 'circumstances', 'moral', 'affective', 'perfect', 'pretty', 'abroad', 'herself', 'leaves', 'sometimes', 'sleep', 'stuff', 'i', 'loves', 'changed', 'straight', 'past', 'doing', 'along', 'australia', 'looks', 'found', 'ideal'

The following words were tagged as NEGATIVE WATER:

'clocks', 'rooms', 'personalities', 'taught', 'witty', 'f', 'saw', 'thankfully', 'still', 'wouldn', 'doesn', 'eyes', 'suddenly', 'they', 'park', 'entitled', 'risk', 'investigator', 'blow', 'mood', 'bpd', 'vendors', 'giving', 'out', 'decrease', 'prescription', 'fluke', 'pan', 'stopped', 'stand', 'muttered', 'self-destruct', 'purpose', 'none', 'mummy-like', 'half', 'pills', 'wrong', 'days', 'but', 'tramadol', 'hospital', 'post', 'proper', 'needless', 'ocean', 'resitting', 'numbers', 'go', 'patient', 'soppy', 'westernized', 'crawling', 'keyed', 'sitting', 'seasonal', 'information', 'frankly', 'fear', 'compliance', 'iceland', 'ended', 'crashed', 'grown', 'were', 'binge-purge', 'debates', 'dependency', 'category', 'anyone', 'plan', 'anything', 'know', 'position', 'tuesdays', 'creams', 'without', 'usual', 'zopiclone', 'killer', 'lottery', 'later', 'why', 'staring', 'parent', 'except', 'right', 'considering', 'circling', 'hit', 'ring', 'problems', 'viewpoint', 'meeting', 'ran', 'them', 'make', 'witless', 'would', 'session', 'thyroid', 'repeatedly', 'alert', 'able', 'eastenders', 'religion', 'conversation', 'thinking', 'floor', 'joe', 'ok', 'afternoon', 'given', 'steps', 'judge', 'provided', 'seminar', 'nottingham', 'fine', 'often', 'hearing', 'typed', 'wil', 'turn', 'confused', 'resent', 'opoid', 'hides', 'stormed', 'overstay', 'imagery', 'inbetween', 'entered', 'landmark', 'handed', 'won', 'kids', 'hope', 'told', 'uni', 'contacted', 'say', 'didn', 'westminster', 'forgot', 'faults', 'court', 'blip', 'ther', 'broken', 'cuz', 'last', 'hello', 'writing', 'transcribed', 'physically', 'self-medicates', 'criminal', 'decade', 'down', 'wat', 'cry', 'army', 'seaneen', 'every', 'coherent', 'general', 'miles', 'surgery', 'lazy', 'phone', 'particularly', 'blanks', 'worse', 'wake', 'myself', 'speak', 'appointment', 'many', 'country', 'london', 'alone', 'ends', 'cause', 'security', 'realise', 'slipped', 'did', 'eventually', 'master', 'seeing', 'toilets', 'psych', 'upset', 'words', 'known', 'flat', 'describe', 'truly', 'start', 'details', 'group', 'securing', 'cheerios', 'listening', 'weeny', 'process', 'dark', 'already', 'undergraduate', 'side', 'slow', 'tended', 'life', 'just', 'mooched', 'back', 'american', 'limited', 'present', 'university', 'quickly', 'admit', 'understand', 'sentence', 'against', 'notes', 'nami', 'dani', 'count', 'foregone', 'across', 'issues', 'benzodiazepines', 'exercise', 'leans', 'tend', 'self-harmed', 'managing', 'pushing', 'being', 'multifamily', 'apparently', 'months', 'put', 'mind', 'drugs', 'ultimately', 'keep', 'moods', 'dependence', 'failing', 'probably', 'argument', 'struggle', 'until', 'opinion', 'painkillers', 'anti-depressants', 'or', 'taken', 'any', 'withdrawal', 'reply', 'edge', 'ruth', 'endlessly', 'window', 'prefix', 'power', 'reduced', 'eaten', 'while', 'drug', 'refusal', 'karen', 'psychiatrists', 'little', 'dysphagia', 'effectively', 'rang', 'requirement', 'research', 'moved', 'hard',

'lectures', 'co-codamol', 'nearly', 'slept', 'syndrome', 'class', 'west', 'doctor', 'spouse-less', 'uncared', 'least', 'lost', 'sounds', 'unveiled', 'part', 'sang', 'name', 'restart', 'summary', 'others', 'wail', 'deposit', 'useful', 'cream', 'old', 'great', 'weirdo', 'hurts', 'voice', 'surrounded', 'teach', 'finish', 'codeine', 'stupid', 'dazed', 'years', 'track', 'prepared', 'coping', 'slightly', 'crashing', 'perform', 'blood', 'times', 'specifically', 'reason', 'dose', 'height', 'round', 'big', 'worker', 'binged', 'comforted', 'crises', 'hate', 'tough', 'medicine', 'tacky', 'before', 'meet', 'no', 'paying', 'friday', 'other', 'coffee', 'pack', 'etc', 'customers', 'train', 'addict', 'counter', 'millions', 'falls', 'atheist', 'midst', 'knows', 'public', 'else', 'year', 'punch', 'pleading', 'truck', 'capable', 'when', 'congress', 'sits', 'type', 'met', 'although', 'panic', 'history', 'true', 'couldn't', 'bulimic', 'under', 'yesterday', 'kicks', 'gone', 'escape', 'venlafaxine', 'strangers', 'cover', 'total', 'short', 'though', 'assessed', 'moan', 'clients', 'think', 'thought', 'then', 'through', 'seriously', 'reports', 'sick', 'bustle', 'noticed', 'same', 'redundancy', 'disability', 'instead', 'caps', 'beginning', 'cmht', 'figured', 'fighting', 'seemed', 'comes', 'soon', 'hadn't', 'number', 'industries', 'job', 'allison', 'worth', 'damaging', 'tests', 'extra', 'state', 'smiley', 'cope', 'conclusion', 'bearly', 'a&e', 'mask', 'trust', 'self-harm', 'after', 'fatigue', 'believe', 'apply', 'everyday', 'earlier', 'respected', 'panicked', 'groggy', 'following', 'bridge', 'club', 'script', 'angry', 'chronic', 'should', 'help', 'whatsoever', 'threatening', 'green', 'learn', 'pain', 'have', 'cherish', 'heard', 'very', 'patriotic', 'such', 'mournful', 'week', 'night', 'gp', 'support', 'starbucks', 'pointed', 'withdrawing', 'cut', 'ages', 'mean', 'thirsty', 'received', 'psychiatrist', 'several', 'humiliation', 'numb', 'final', 'street', 'those', 'till', 'jobs', 'embarrass', 'you', 'usually', 'tasks', 'however', 'relocate', 'wtf', 'aging', 'terrified', 'professional', 'try', 'under-grad', 'he', 'miffed', 'also', 'symptoms', 'investigation', 'asperger', 'approached', 'knowledgeable', 'safe', 'schedule', 'him', 'hardest', 'house', 'revision', 'rather', 'standard', 'england', 'illicit', 'english', 'fist', 'read', 'student', 'pressure', 'something', 'everything', 'awake', 'personnel', 'swear', 'dental', 'anybody', 'monday', 'makes', 'dad', 't', 'reliant', 'marks', 'temazepam', 'humor', 'battles', 'passport', 'wasn't', 'substance', 'going', 'far', 'leaf', 'otc', 'clothes', 'take', 'camden', 'employees', 'become', 'course', 'by', 'doze', 'studies', 'morning', 'argue', 'mention', 'needs', 'sean', 'hot', 'trying', 'summarize', 'claims', 'graduate', 'due', 'two', 'suffer', 'loan', 'either', 'guess', 'below', 'phobic', 'in', 'dealt', 'world', 'frustration', 'derbyshire', 'exhibiting', 'hell', 'thursday', 'together', 'this', 'case', 'thrown', 'uborka', 'yard-less', 'leave', 'screw', 'bad', 'shut', 'sales', 'control-freak', 'whether', 'abandonment', 'cares', 'plans', 'coming', 'absence', 'packet', 'means', 'month', 'which', 'dealing', 'defined', 'consensus', 'mentally', 'proud', 'summarized', 'apartment', 'truth', 'advanced', 'defense', 'shaky', 'warning', 'honestly', 'self-pitying', 'hasn't', 'minds', 'situation', 'lecture', 'duties', 'packaging', 'corner', 'sedatives', 'relapse', 'asked', 'post-graduate', 'actually', 'happen', 'tomorrow', 'girls', 'whinging', 'underlying', 'hypothyroidism', 'story', 'hold', 'pub', 'fact', 'possibly', 'could', 'dragging', 'how', 'around', 'really', 'aren't', 'snakes', 'freakily', 'nothing', 'hustle', 'cup', 'alcohol', 'covered', 'tube', 'efficiently', 'content', 'easily', 'primarily', 'different', 'south', 'hack', 'fault', 'deep', 'disaster', 'bar', 'ugly', 'oh', 'minute', 'anxiety', 'colorless', 'lately', 'may', 'always', 'buy', 'medicines', 'uttered', 'explain', 'three', 'supervisors', 'clown', 'flight', 'underneath', 'sunday', 'mainly', 'prepare', 'turned', 'child', 'unfortunately', 'medicaid', 'ghastly', 'wonderful', 'hands', 'sense', 'worked', 'went', 'gmt', 'interrupted', 'unlike', 'africa', 'loss', 'yellow', 'everyone', 'need', 'diagnoses', 'crap', 'afraid', 'humorless', 'nerve', 'reach', 'anonymous', 'much', 'honest', 'on', 'attorney', 'wind', 'obnoxious', 'national', 'time', 'barman', 'called', 'necessary', 'coke', 'list', 'long', 'reasons', 'patience', 'wall', 'paranoia', 'bore', 'warming', 'needed', 'wobble', 'stumbled', 'hypnotics', 'inspectors', 'uch', 'blag', 'there', 'problem', 'randoms', 'request', 'identity', 'recently', 'lies', 'community', 'find', 'inadequate', 'joint', 'scarper', 'cold', 's', 'yet', 'scared', 'thinks', 'not', 'check', 'color', 'mondays', 'scotland', 'alliance', 'nothingness', 'it', 'sent', 'stuck', 'bit', 'wait', 'logical', 'sort', 'death', 'weather', 'difference', 'parents', 'worried', 'says', 'started', 'where', 'talk', 'few', 'addicted', 'lithium', 'am', 'spanish-language', 'define', 'hopeless', 'weird', 'useless', 'if', 'sloppy', 'loans', 'knew', 'test', 'do', 'line', 'misuse', 'well', 'housemates', 'spoken', 'related', 'partly', 'their', 'love', 'less', 'k', 'seven', 'minority', 'isn't', 'lose', 'supervision', 'tablet', 'rent', 'common', 'weight', 'loneliness', 'some', 'stop', 'will', 'sure', 'services', 'shambles', 'admitted', 'third', 'furiously', 'leaving', 'ago', 'honours', 'email', 'anti-aging', 'are', 'talking', 'sorry', 'risky', 'an', 'hi', 'jean', 'universities', 'pay', 'intelligent', 'starting', 'each', 'matter', 'way', 'meant', 'only', 'fridge', 'woke', 'latched', 'cpn', 'ailments', 'purged', 'plummet', 'dictation', 'bloody', 'advertised', 'swallowing', 'today', 'whilst', 'bulimia', 'point', 'hour', 'self-harming', 'team', 'haven', 'bosses', 'cried', 'accompanied', 'apologise', 'wednesday', 'don', 'felt', 'fan', 'both', 'temporary', 'stab', 'surface', 'sit', 'return', 'locks', 'referral', 'translated', 'northern', 'annoying', 'samaritans', 'kinda', 'terrible', 'hear', 'spiders', 'attacks', 'at', 'i.e.', 'package', 'disorder', 'fall', 'never', 'lord', 'alarm', 'freaking', 'defender', 'determined', 'anyway', 'money', 'ill', 'introverted',

'assessment', 'might', 'anymore', 'city', 'suffers', 'blah', 'term', 'finds', 'said', 'stomach', 'does', 'seen', 'slide', 'nearby', 'strong', 'formal', 'mortgage', 'medication', 'tries', 'us', 'fake', 'title', 'remember', 'duty', 'people', 'drop', 'worry', 'aside', 'matters', 'career', 'live', 'mental', 'onto', 'let', 'head', 'finally', 'rolling', 'bet', 'discharge', 'points', 'athletic', 'experience', 'badly', 'suicidal', 'paddling', 'issue', 'saying', 'place', 'close', 'worst', 'toilet', 'took', 'degree', 'work', 'rational', 'medical', 'thing', 'bills', 'bolshy', 'cases', 'tired', 'face', 'burden', 'girlies', 'lazily', 'drag', 'insurance', 'swollen', 'bodies', 'obamacare'

The following words were tagged as POSITIVE FIRE:

'living', 'personalities', 'taught', 'witty', 'still', 'because', 'nice', 'eyes', 'investigator', 'blow', 'spending', 'stand', 'confidence', 'purpose', 'wrong', 'be', 'but', 'proper', 'post', 'ocean', 'go', 'depressing', 'massive', 'information', 'allowed', 'resources', 'family', 'binge-purge', 'debates', 'category', 'plan', 'active', 'comment', 'position', 'simply', 'volunteering', 'stressful', 'staring', 'parent', 'right', 'allows', 'absolutely', 'repeatedly', 'alert', 'able', 'religion', 'adventure', 'conversation', 'must', 'steps', 'judge', 'provided', 'often', 'provides', 'hearing', 'wil', 'turn', 'openness', 'effect', 'entered', 'control', 'hope', 'told', 'say', 'goals', 'catch', 'visits', 'focus', 'cuz', 'last', 'perfectly', 'hello', 'moon', 'army', 'seaneen', 'every', 'cereal', 'adhd', 'miles', 'show', 'set', 'myself', 'with', 'made', 'speak', 'many', 'resurgence', 'cause', 'security', 'come', 'master', 'personality', 'stabilising', 'likes', 'note', 'words', 'truly', 'start', 'details', 'group', 'listening', 'process', 'undergraduate', 'life', 'just', 'back', 'limited', 'space', 'all', 'admit', 'understand', 'notes', 'activities', 'count', 'dani', 'adopting', 'tend', 'helping', 'managing', 'pushing', 'places', 'believing', 'put', 'ultimately', 'keep', 'what', 'dependence', 'essence', 'argument', 'self-harmer', 'until', 'opinion', 'painkillers', 'the', 'reply', 'edge', 'wants', 'endlessly', 'power', 'extremely', 'refusal', 'effectively', 'moved', 'hard', 'waiting', 'effort', 'spouse-less', 'extraordinarily', 'least', 'ringing', 'sang', 'name', 'restart', 'success', 'others', 'air', 'planning', 'exclamation', 'old', 'great', 'move', 'weirdo', 'message', 'voice', 'teach', 'finish', 'track', 'perform', 'blood', 'specifically', 'reason', 'big', 'paying', 'friends', 'ready', 'pack', 'counter', 'run', 'falls', 'depressed', 'knows', 'public', 'else', 'capable', 'dream', 'god', 'history', 'cover', 'total', 'though', 'see', 'through', 'sick', 'bustle', 'beginning', 'cmht', 'fighting', 'wrote', 'job', 'allison', 'worth', 'damaging', 'tests', 'extra', 'state', 'smiley', 'trust', 'self-harm', 'believe', 'apply', 'walked', 'end', 'comedy', 'now', 'senses', 'positive', 'decided', 'should', 'help', 'blog', 'learn', 'pain', 'everywhere', 'patriotic', 'bed', 'very', 'her', 'support', 'mean', 'my', 'clean', 'jobs', 'tasks', 'however', 'ensure', 'ahead', 'takes', 'genuinely', 'choose', 'try', 'whenever', 'share', 'own', 'investigation', 'approached', 'longer', 'above', 'fist', 'look', 'ideas', 'student', 'pressure', 'something', 'everything', 'awake', 'making', 'swear', 'anybody', 'makes', 'humor', 'battles', 'going', 'take', 'studies', 'morning', 'sean', 'hot', 'running', 'kept', 'trying', 'summarize', 'claims', 'suffer', 'therefore', 'treat', 'me', 'in', 'beautiful', 'real', 'energy', 'welcome', 'fed', 'exhibiting', 'full', 'together', 'this', 'watching', 'next', 'used', 'whether', 'salvation', 'cares', 'new', 'coming', 'overcompensates', 'means', 'which', 'dealing', 'defined', 'mentally', 'proud', 'summarized', 'defense', 'continuing', 'lights', 'situation', 'duties', 'corner', 'asked', 'happen', 'tomorrow', 'danced', 'could', 'otherwise', 'how', 'really', 'shower', 'hustle', 'covered', 'efficiently', 'thrive', 'primarily', 'different', 'engaging', 'one', 'act', 'always', 'explain', 'fight', 'urge', 'prepare', 'child', 'allow', 'incredibly', 'sense', 'worked', 'yellow', 'everyone', 'first', 'day', 'nerve', 'reach', 'so', 'on', 'wind', 'national', 'necessary', 'curse', 'care', 'reasons', 'patience', 'wall', 'consume', 'warming', 'physical', 'inspectors', 'experienced', 'exactly', 'rugby', 'request', 'identity', 'rewards', 'find', 'depression', 'check', 'alliance', 'stuck', 'fit', 'newly', 'hard-earned', 'save', 'started', 'am', 'hopeless', 'do', 'spoken', 'related', 'fulfilment', 'continuously', 'optimistic', 'clear', 'love', 'salted', 'was', 'social', 'stop', 'will', 'sure', 'admitted', 'leaving', 'forever', 'are', 'win', 'major', 'talking', 'hi', 'jean', 'universities', 'mum', 'pay', 'starting', 'matter', 'way', 'bath', 'only', 'woke', 'even', 'cpn', 'purged', 'moment', 'convinced', 'bloody', 'distinctive', 'team', 'bosses', 'has', 'apologise', 'both', 'contacting', 'sit', 'rest', 'locks', 'referral', 'translated', 'samaritans', 'trader', 'attacks', 'at', 'disorder', 'ourselves', 'defender', 'determined', 'almost', 'anymore', 'getting', 'enter', 'finds', 'does', 'seen', 'slide', 'strong', 'hand', 'tries', 'remember', 'title', 'duty', 'friend', 'urges', 'circumstances', 'live', 'mental', 'onto', 'moral', 'affective', 'abroad', 'athletic', 'experience', 'sometimes', 'suicidal', 'paddling', 'saying', 'close', 'degree', 'straight', 'bolshy', 'tired', 'drag', 'bodies', 'ideal'

The following words were tagged as NEGATIVE FIRE:

'abuse', 'rooms', 'clocks', 'f', 'lunches', 'saw', 'thankfully', 'wouldn', 'dog', 'maybe', 'borrowed', 'doesn', 'dreaming', 'suddenly', 'they', 'park', 'entitled', 'risk', 'mood', 'bpd', 'vendors', 'rests', 'giving', 'out', 'decrease', 'prescription', 'fluke', 'pan', 'stopped', 'hat', 'muttered', 'self-destruct', 'hormones', 'none', 'mummy-like', 'half', 'pills', 'days', 'having', 'tramadol', 'appears', 'hospital', 'needless', 'resitting', 'numbers', 'patient', 'wishing', 'westernized', 'soppy', 'eating', 'crawling', 'keyed', 'floating', 'sitting', 'seasonal', 'frankly', 'fear', 'compliance', 'iceland', 'ended', 'crashed', 'involving', 'grown', 'were', 'reading', 'dependency', 'gets', 'anyone', 'anything', 'rich', 'know', 'tuesdays', 'creams', 'without', 'keeping', 'usual', 'zopiclone', 'killer', 'lottery', 'later', 'why', 'routine', 'except', 'street', 'considering', 'circling', 'hit', 'ring', 'problems', 'viewpoint', 'meeting', 'ran', 'them', 'make', 'antidepressant', 'witless', 'would', 'session', 'thyroid', 'alive', 'eastenders', 'degrees', 'floor', 'thinking', 'women', 'joe', 'ok', 'afternoon', 'given', 'seminar', 'nottingham', 'fine', 'ones', 'typed', 'cars', 'confused', 'resent', 'opoid', 'hides', 'stormed', 'overstay', 'imagery', 'inbetween', 'landmark', 'handed', 'won', 'kids', 'side-tracked', 'easier', 'uni', 'contacted', 'didn', 'westminster', 'forgot', 'faults', 'court', 'blip', 'ther', 'broken', 'off', 'writing', 'transcribed', 'physically', 'self-medicates', 'criminal', 'decade', 'down', 'wat', 'cry', 'relaxed', 'coherent', 'general', 'surgery', 'lazy', 'phone', 'particularly', 'blanks', 'worse', 'wake', 'we', 'to', 'appointment', 'country', 'london', 'alone', 'ends', 'its', 'realise', 'slipped', 'did', 'eventually', 'moments', 'sketch', 'seeing', 'toilets', 'psych', 'upset', 'make-up', 'known', 'flat', 'lucky', 'describe', 'stay', 'securing', 'cheerios', 'weeny', 'system', 'dark', 'already', 'laughs', 'side', 'slow', 'tended', 'appear', 'mooched', 'came', 'american', 'present', 'university', 'quickly', 'against', 'sentence', 'nami', 'foregone', 'across', 'issues', 'breeze', 'benzodiazepines', 'exercise', 'leans', 'self-harmed', 'being', 'multifamily', 'apparently', 'fraud', 'months', 'mind', 'drugs', 'anti-wrinkle', 'moods', 'failing', 'probably', 'struggle', 'anti-depressants', 'or', 'taken', 'any', 'withdrawal', 'ruth', 'party', 'window', 'prefix', 'telling', 'stats', 'tell', 'reduced', 'as', 'eaten', 'while', 'drug', 'phase', 'intern', 'karen', 'psychiatrists', 'decades', 'little', 'dysphagia', 'our', 'enjoyable', 'rang', 'requirement', 'happy', 'hiking', 'research', 'lectures', 'cocodamol', 'nearly', 'slept', 'syndrome', 'class', 'west', 'doctor', 'uncared', 'away', 'spent', 'lost', 'sounds', 'unveiled', 'part', 'again', 'summary', 'wail', 'got', 'deposit', 'useful', 'cream', 'once', 'hurts', 'joy', 'boyfriend', 'surrounded', 'dazed', 'codeine', 'stupid', 'years', 'times', 'prepared', 'coping', 'slightly', 'crashing', 'another', 'dose', 'cushioned', 'height', 'round', 'lemonade', 'worker', 'binged', 'comforted', 'crises', 'difficult', 'tough', 'medicine', 'hate', 'tacky', 'before', 'meet', 'no', 'coffee', 'friday', 'other', 'etc', 'customers', 'train', 'addict', 'your', 'millions', 'manner', 'frying', 'atheist', 'midst', 'towards', 'shout', 'of', 'that', 'year', 'punch', 'pleading', 'truck', 'husband', 'when', 'congress', 'sits', 'type', 'met', 'although', 'panic', 'yourself', 'things', 'true', 'and', 'bulimic', 'couldn', 'under', 'kicks', 'gone', 'escape', 'yesterday', 'venlafaxine', 'lot', 'strangers', 'receive', 'is', 'drink', 'can', 'random', 'short', 'totally', 'assessed', 'using', 'grass', 'moan', 'clients', 'think', 'thought', 'then', 'seriously', 'reports', 'autistic', 'for', 'noticed', 'self-image', 'same', 'redundancy', 'disability', 'over-stimulation', 'instead', 'caps', 'figured', 'seemed', 'comes', 'soon', 'hadn', 'number', 'industries', 'additionally', 'cope', 'buying', 'conclusion', 'bearly', 'person', 'a&e', 'happier', 'mask', 'wandering', 'fatigue', 'after', 'important', 'taking', 'everyday', 'earlier', 'feeling', 'freedom', 'respected', 'especially', 'panicked', 'following', 'groggy', 'bridge', 'club', 'script', 'angry', 'chronic', 'whatsoever', 'free', 'up', 'bipolar', 'threatening', 'green', 'into', 'have', 'plant', 'laugh', 'heard', 'cherish', 'such', 'mournful', 'wish', 'week', 'laughing', 'night', 'gp', 'skydiving', 'had', 'starbucks', 'pointed', 'withdrawing', 'cut', 'over', 'happens', 'ages', 'thirsty', 'received', 'psychiatrist', 'smile', 'humiliation', 'numb', 'checks', 'several', 'final', 'sparkling', 'huge', 'about', 'those', 'till', 'heart', 'most', 'frame', 'you', 'embarrass', 'lay', 'rock', 'usually', 'm&m', 'ever', 'feel', 'been', 'relocate', 'wtf', 'aging', 'lunch', 'terrified', 'change', 'normal', 'professional', 'under-grad', 'he', 'miffed', 'also', 'symptoms', 'asperger', 'knowledgeable', 'safe', 'schedule', 'him', 'reflect', 'hardest', 'house', 'revision', 'rather', 'standard', 'england', 'illicit', 'english', 'dvd', 'read', 'sleeping', 'personnel', 'dental', 'monday', 't', 'dad', 'temazepam', 'reliant', 'marks', 'passport', 'wasn', 'seem', 'substance', 'far', 'addictive', 'leaf', 'otc', 'clothes', 'call', 'camden', 'employees', 'become', 'course', 'creamer', 'by', 'doze', 'argue', 'than', 'grapefruit', 'mention', 'food', 'needs', 'affect', 'graduate', 'due', 'girlfriend', 'two', 'soul', 'loan', 'either', 'guess', 'below', 'phobic', 'changing', 'dealt', 'calm', 'world', 'glad', 'she', 'frustration', 'happiness', 'derbyshire', 'hell', 'thursday', 'case', 'thrown', 'uborka', 'girl', 'yard-less', 'leave', 'screw', 'bad', 'shut', 'sales', 'sarcastically', 'control-freak', 'abandonment', 'plans', 'absence', 'packet', 'water', 'month', 'health', 'unknown', 'whole', 'like', 'skipping', 'consensus', 'pretzels', 'tablets', 'apartment', 'wanted', 'truth', 'advanced'

'film', 'shaky', 'warning', 'honestly', 'self-pitying', 'hasn', 'minds', 'lecture', 'packaging', 'sedatives', 'lips', 'relapse', 'post-graduate', 'internet', 'actually', 'better', 'bizarre', 'girls', 'whinging', 'underlying', 'fun', 'hypothyroidism', 'story', 'hold', 'pub', 'fact', 'graduated', 'delivery', 'possibly', 'dragging', 'around', 'fill', 'aren', 'snakes', 'freakily', 'nothing', 'cup', 'adoption', 'alcohol', 'tube', 'awareness', 'content', 'easily', 'south', 'hack', 'fault', 'deep', 'disaster', 'healthcare', 'bar', 'give', 'ugly', 'home', 'oh', 'minute', 'anxiety', 'therapy', 'helpless', 'colorless', 'lately', 'may', 'buy', 'joyless', 'medicines', 'designed', 'uttered', 'three', 'kind', 'supervisors', 'clown', 'flight', 'millionaire', 'society', 'underneath', 'stars', 'loud', 'sunday', 'mainly', 'deal', 'arrived', 'turned', 'unfortunately', 'medicaid', 'ghastly', 'wonderful', 'hands', 'went', 'gmt', 'interrupted', 'unlike', 'here', 'africa', 'loss', 'need', 'bells', 'diagnoses', 'crap', 'too', 'afraid', 'humorless', 'anonymous', 'much', 'honest', 'attorney', 'more', 'obnoxious', 'time', 'called', 'barman', 'coke', 'list', 'changes', 'good', 'long', 'paranoia', 'bore', 'needed', 'wobble', 'peach', 'stumbled', 'hypnotics', 'uch', 'structure', 'blag', 'there', 'problem', 'randoms', 'pantry', 'recently', 'lies', 'community', 'inadequate', 'joint', 'quite', 'cold', 'scarper', 's', 'scared', 'yet', 'thinks', 'not', 'color', 'mondays', 'scotland', 'from', 'iced', 'nothingness', 'throw', 'it', 'sent', 'bit', 'escaped', 'wait', 'logical', 'sort', 'subject', 'death', 'weather', 'difference', 'parents', 'worried', 'says', 'talk', 'where', 'normally', 'few', 'addicted', 'dance', 'cheap', 'lithium', 'spanish-language', 'define', 'weird', 'useless', 'if', 'sloppy', 'loans', 'knew', 'baby', 'test', 'line', 'misuse', 'well', 'housemates', 'sack', 'these', 'seems', 'partly', 'their', 'drivers', 'less', 'k', 'seven', 'minority', 'isn', 'lose', 'supervision', 'tablet', 'rent', 'common', 'wave', 'school', 'weight', 'loneliness', 'looking', 'some', 'invisible', 'services', 'shambles', 'third', 'furiously', 'couple', 'a', 'ago', 'who', 'feels', 'honours', 'email', 'fits', 'anti-aging', 'surprising', 'sorry', 'risky', 'an', 'loved', 'crying', 'carriage', 'intelligent', 'lovely', 'bedroom', 'each', 'weekend', 'meant', 'online', 'fridge', 'get', 'latched', 'ailments', 'happening', 'plummet', 'dictation', 'room', 'drunk', 'advertised', 'swallowing', 'today', 'whilst', 'bulimia', 'point', 'hour', 'self-harming', 'haven', 'swings', 'cried', 'accompanied', 'felt', 'wednesday', 'don', 'fan', 'temporary', 'watched', 'stab', 'surface', 'return', 'someone', 'northern', 'annoying', 'definitely', 'kinda', 'terrible', 'hear', 'spiders', 'i.e', 'package', 'fall', 'never', 'want', 'since', 'lord', 'alarm', 'front', 'grumpy', 'freaking', 'anyway', 'money', 'ill', 'introverted', 'assessment', 'might', 'city', 'eyeliner', 'sofa', 'blah', 'suffers', 'term', 'said', 'stomach', 'during', 'nearby', 'formal', 'mortgage', 'tea', 'medication', 'us', 'fake', 'worry', 'people', 'drop', 'matters', 'aside', 'career', 'let', 'head', 'finally', 'perfect', 'pretty', 'rolling', 'bet', 'discharge', 'herself', 'points', 'badly', 'leaves', 'sleep', 'stuff', 'issue', 'place', 'toilet', 'i', 'worst', 'took', 'rational', 'work', 'loves', 'medical', 'changed', 'thing', 'bills', 'past', 'doing', 'along', 'cases', 'face', 'burden', 'girlies', 'lazily', 'australia', 'looks', 'insurance', 'swollen', 'found', 'obamacare'

The following words were tagged as POSITIVE HEART:

'wants', 'living', 'warming', 'peach', 'physical', 'try', 'personalities', 'whenever', 'change', 'still', 'needed', 'power', 'extremely', 'tell', 'as', 'there', 'share', 'approached', 'nice', 'eyes', 'dreaming', 'suddenly', 'they', 'him', 'rewards', 'identity', 'community', 'mood', 'joint', 'yet', 'effectively', 'our', 'enjoyable', 'message', 'happy', 'giving', 'alliance', 'from', 'pressure', 'something', 'confidence', 'effort', 'mummy-like', 'newly', 'wrong', 'away', 'extraordinarily', 'dad', 'be', 'reliant', 'marks', 'sounds', 'death', 'parents', 'ringing', 'talk', 'patient', 'wishing', 'dance', 'others', 'planning', 'hopeless', 'depressing', 'baby', 'affect', 'well', 'hot', 'housemates', 'spoken', 'joy', 'family', 'kept', 'surrounded', 'trying', 'grown', 'fulfilment', 'these', 'were', 'teach', 'boyfriend', 'girlfriend', 'times', 'dependency', 'gets', 'reason', 'cushioned', 'treat', 'love', 'know', 'changing', 'rock', 'calm', 'beautiful', 'real', 'glad', 'simply', 'she', 'energy', 'stressful', 'welcome', 'loneliness', 'staring', 'why', 'happiness', 'parent', 'friends', 'considering', 'together', 'meeting', 'services', 'girl', 'couple', 'a', 'who', 'of', 'cases', 'feels', 'cares', 'forever', 'are', 'absolutely', 'coming', 'husband', 'when', 'religion', 'talking', 'surprising', 'hi', 'loved', 'dream', 'women', 'must', 'god', 'crying', 'mum', 'things', 'starting', 'bedroom', 'lovely', 'matter', 'and', 'provided', 'hearing', 'only', 'provides', 'like', 'even', 'latched', 'openness', 'lot', 'strangers', 'turn', 'resent', 'moment', 'advanced', 'convinced', 'is', 'room', 'bloody', 'cover', 'can', 'total', 'hope', 'lips', 'goals', 'cried', 'through', 'accompanied', 'seriously', 'felt', 'don', 'for', 'noticed', 'both', 'same', 'happen', 'cuz', 'danced', 'last', 'girls', 'beginning', 'underlying', 'fun', 'hear', 'hold', 'fact', 'how', 'really', 'wrote', 'fall', 'since', 'lord', 'show', 'thrive', 'awareness', 'with', 'to', 'we', 'give', 'many', 'into', 'conclusion', 'country', 'home', 'person', 'alone', 'resurgence', 'cause', 'happier', 'engaging', 'trust', 'anxiety', 'after', 'helpless', 'moments', 'finds', 'believe', 'enter', 'seeing', 'does', 'always', 'said', 'joyless', 'likes',

'words', 'uttered', 'strong', 'note', 'end', 'freedom', 'comedy', 'especially', 'stay', 'following', 'truly', 'positive', 'fight', 'kind', 'tries', 'angry', 'group', 'us', 'remember', 'listening', 'decided', 'friend', 'people', 'urge', 'laughs', 'circumstances', 'life', 'let', 'affective', 'child', 'pain', 'wonderful', 'everywhere', 'allow', 'just', 'plant', 'cherish', 'perfect', 'incredibly', 'have', 'all', 'admit', 'wish', 'laughing', 'understand', 'points', 'night', 'loss', 'support', 'her', 'adopting', 'need', 'had', 'across', 'leaves', 'experience', 'sleep', 'happens', 'rational', 'nerve', 'smile', 'multifamily', 'being', 'received', 'apparently', 'loves', 'believing', 'sparkling', 'mind', 'my', 'more', 'obnoxious', 'time', 'about', 'heart', 'keep', 'most', 'frame', 'what', 'you', 'dependence', 'moods', 'tired', 'essence', 'argument', 'along', 'feel', 'good', 'long', 'however', 'm&m', 'ever', 'patience', 'care', 'ensure', 'found', 'been', 'oh', 'aging'

The following words were tagged as NEGATIVE HEART:

'abuse', 'rooms', 'clocks', 'taught', 'witty', 'lunches', 'f', 'thankfully', 'saw', 'because', 'wouldn', 'dog', 'maybe', 'borrowed', 'doesn', 'they', 'park', 'entitled', 'risk', 'investigator', 'blow', 'bpd', 'vendors', 'rests', 'out', 'decrease', 'prescription', 'fluke', 'spending', 'stopped', 'pan', 'hat', 'stand', 'muttered', 'self-destrurt', 'purpose', 'hormones', 'none', 'half', 'pills', 'days', 'having', 'but', 'tramadol', 'appears', 'post', 'hospital', 'needless', 'ocean', 'proper', 'resitting', 'numbers', 'go', 'soppy', 'westernized', 'eating', 'crawling', 'massive', 'keyed', 'floating', 'sitting', 'seasonal', 'information', 'frankly', 'allowed', 'resources', 'fear', 'compliance', 'iceland', 'ended', 'crashed', 'involving', 'binge-purge', 'reading', 'debates', 'category', 'anyone', 'plan', 'active', 'anything', 'rich', 'comment', 'tuesdays', 'position', 'creams', 'without', 'keeping', 'usual', 'zopiclone', 'killer', 'lottery', 'volunteering', 'later', 'routine', 'except', 'right', 'circling', 'hit', 'ring', 'problems', 'viewpoint', 'ran', 'them', 'make', 'antidepressant', 'allows', 'witless', 'would', 'session', 'thyroid', 'repeatedly', 'alive', 'alert', 'able', 'eastenders', 'adventure', 'conversation', 'thinking', 'degrees', 'floor', 'joe', 'ok', 'afternoon', 'given', 'steps', 'judge', 'seminar', 'nottingham', 'fine', 'ones', 'often', 'typed', 'cars', 'wil', 'confused', 'opoid', 'hides', 'stormed', 'overstay', 'imagery', 'inbetween', 'entered', 'landmark', 'control', 'handed', 'won', 'effect', 'kids', 'side-tracked', 'easier', 'told', 'uni', 'contacted', 'say', 'didn', 'westminster', 'forgot', 'faults', 'court', 'blip', 'catch', 'visits', 'ther', 'focus', 'broken', 'perfectly', 'hello', 'stuff', 'off', 'writing', 'transcribed', 'moon', 'physically', 'self-medicates', 'criminal', 'decade', 'down', 'wat', 'cry', 'army', 'seaneen', 'relaxed', 'every', 'coherent', 'cereal', 'general', 'adhd', 'miles', 'surgery', 'lazy', 'phone', 'particularly', 'blanks', 'worse', 'set', 'wake', 'myself', 'made', 'speak', 'appointment', 'london', 'ends', 'its', 'security', 'realise', 'come', 'slipped', 'did', 'eventually', 'stabilising', 'master', 'sketch', 'personality', 'toilets', 'psych', 'upset', 'make-up', 'known', 'flat', 'lucky', 'describe', 'start', 'details', 'securing', 'cheerios', 'weeny', 'system', 'process', 'dark', 'already', 'undergraduate', 'side', 'slow', 'tended', 'appear', 'mooched', 'back', 'came', 'american', 'limited', 'present', 'university', 'quickly', 'space', 'against', 'sentence', 'notes', 'nami', 'activities', 'count', 'dani', 'foregone', 'issues', 'breeze', 'benzodiazepines', 'exercise', 'leans', 'tend', 'helping', 'self-harmed', 'managing', 'pushing', 'fraud', 'months', 'places', 'put', 'drugs', 'ultimately', 'anti-wrinkle', 'failing', 'probably', 'self-harmer', 'struggle', 'until', 'opinion', 'painkillers', 'the', 'anti-depressants', 'or', 'taken', 'any', 'withdrawal', 'reply', 'edge', 'ruth', 'party', 'endlessly', 'window', 'prefix', 'telling', 'stats', 'reduced', 'eaten', 'while', 'drug', 'phase', 'intern', 'refusal', 'karen', 'psychiatrists', 'decades', 'little', 'dysphagia', 'rang', 'hiking', 'requirement', 'research', 'moved', 'hard', 'lectures', 'co-codamol', 'nearly', 'slept', 'waiting', 'syndrome', 'class', 'west', 'doctor', 'spouse-less', 'uncared', 'spent', 'least', 'lost', 'unveiled', 'part', 'sang', 'name', 'restart', 'again', 'summary', 'success', 'air', 'wail', 'exclamation', 'got', 'deposit', 'useful', 'cream', 'old', 'once', 'great', 'move', 'weirdo', 'hurts', 'voice', 'finish', 'codeine', 'stupid', 'dazed', 'years', 'track', 'prepared', 'coping', 'slightly', 'crashing', 'perform', 'blood', 'another', 'specifically', 'dose', 'height', 'round', 'big', 'lemonade', 'binged', 'comforted', 'worker', 'crises', 'difficult', 'tough', 'medicine', 'hate', 'tacky', 'before', 'meet', 'no', 'paying', 'friday', 'other', 'coffee', 'ready', 'pack', 'etc', 'customers', 'train', 'addict', 'your', 'counter', 'millions', 'run', 'manner', 'falls', 'depressed', 'frying', 'atheist', 'midst', 'knows', 'shout', 'towards', 'public', 'that', 'else', 'year', 'punch', 'pleading', 'truck', 'capable', 'congress', 'sits', 'type', 'met', 'although', 'panic', 'yourself', 'history', 'true', 'couldn', 'bulimic', 'under', 'yesterday', 'kicks', 'gone', 'escape', 'venlafaxine', 'receive', 'drink', 'random', 'short', 'though', 'totally', 'assessed', 'using', 'grass', 'moan', 'clients', 'think', 'thought', 'see', 'then', 'reports', 'sick', 'autistic', 'self-image', 'bustle', 'redundancy', 'disability', 'over-stimulation', 'instead', 'caps', 'cmht', 'figured', 'fighting', 'seemed', 'comes', 'soon', 'hadn', 'number', 'industries', 'job', 'allison', 'worth',

'additionally', 'damaging', 'tests', 'extra', 'state', 'smiley', 'cope', 'buying', 'bearly', 'a&e', 'mask', 'wandering', 'self-harm', 'fatigue', 'important', 'taking', 'apply', 'everyday', 'earlier', 'feeling', 'walked', 'respected', 'panicked', 'groggy', 'bridge', 'senses', 'club', 'now', 'script', 'chronic', 'should', 'free', 'help', 'up', 'bipolar', 'whatsoever', 'threatening', 'green', 'blog', 'learn', 'such', 'laugh', 'heard', 'very', 'bed', 'patriotic', 'mournful', 'week', 'gp', 'skydiving', 'starbucks', 'pointed', 'withdrawing', 'cut', 'over', 'ages', 'mean', 'thirsty', 'several', 'psychiatrist', 'street', 'humiliation', 'numb', 'checks', 'final', 'huge', 'clean', 'till', 'those', 'jobs', 'embarrass', 'lay', 'usually', 'tasks', 'relocate', 'wtf', 'takes', 'ahead', 'lunch', 'terrified', 'genuinely', 'normal', 'professional', 'choose', 'under-grad', 'he', 'miffed', 'also', 'symptoms', 'own', 'investigation', 'asperger', 'knowledgeable', 'safe', 'schedule', 'reflect', 'hardest', 'longer', 'house', 'revision', 'rather', 'standard', 'england', 'illicit', 'english', 'above', 'dvd', 'fist', 'look', 'read', 'ideas', 'student', 'everything', 'awake', 'sleeping', 'making', 'personnel', 'swear', 'dental', 'anybody', 'monday', 'makes', 't', 'temazepam', 'humor', 'battles', 'passport', 'wasn', 'seem', 'substance', 'going', 'far', 'addictive', 'leaf', 'otc', 'clothes', 'call', 'take', 'camden', 'employees', 'become', 'course', 'creamer', 'by', 'doze', 'studies', 'than', 'grapefruit', 'mention', 'food', 'needs', 'sean', 'morning', 'argue', 'running', 'summarize', 'claims', 'graduate', 'due', 'two', 'soul', 'suffer', 'loan', 'either', 'therefore', 'guess', 'below', 'me', 'phobic', 'in', 'dealt', 'world', 'frustration', 'derbyshire', 'fed', 'exhibiting', 'hell', 'thursday', 'full', 'this', 'case', 'watching', 'next', 'uborka', 'yard-less', 'leave', 'used', 'thrown', 'bad', 'shut', 'sales', 'sarcastically', 'control-freak', 'screw', 'whether', 'salvation', 'abandonment', 'new', 'plans', 'absence', 'packet', 'water', 'means', 'overcompensates', 'month', 'health', 'which', 'dealing', 'unknown', 'whole', 'skipping', 'defined', 'consensus', 'mentally', 'pretzels', 'proud', 'apartment', 'wanted', 'tablets', 'truth', 'summarized', 'film', 'defense', 'lights', 'shaky', 'continuing', 'warning', 'honestly', 'self-pitying', 'hasn', 'minds', 'situation', 'lecture', 'duties', 'packaging', 'corner', 'sedatives', 'relapse', 'asked', 'internet', 'post-graduate', 'actually', 'better', 'tomorrow', 'bizarre', 'whinging', 'hypothyroidism', 'story', 'pub', 'possibly', 'graduated', 'delivery', 'could', 'dragging', 'otherwise', 'around', 'shower', 'fill', 'aren', 'snakes', 'freakily', 'nothing', 'hustle', 'cup', 'adoption', 'alcohol', 'covered', 'tube', 'efficiently', 'content', 'easily', 'primarily', 'different', 'south', 'hack', 'fault', 'deep', 'disaster', 'healthcare', 'bar', 'ugly', 'one', 'minute', 'act', 'therapy', 'colorless', 'lately', 'may', 'buy', 'medicines', 'designed', 'explain', 'three', 'supervisors', 'clown', 'flight', 'millionaire', 'society', 'underneath', 'stars', 'loud', 'sunday', 'mainly', 'deal', 'prepare', 'arrived', 'turned', 'unfortunately', 'medicaid', 'ghastly', 'hands', 'sense', 'worked', 'went', 'gmt', 'interrupted', 'unlike', 'here', 'africa', 'yellow', 'everyone', 'bells', 'diagnoses', 'crap', 'too', 'afraid', 'first', 'humorless', 'day', 'reach', 'so', 'anonymous', 'much', 'honest', 'on', 'attorney', 'wind', 'national', 'called', 'barman', 'necessary', 'curse', 'coke', 'list', 'changes', 'reasons', 'wall', 'consume', 'paranoia', 'bore', 'wobble', 'stumbled', 'hypnotics', 'experienced', 'inspectors', 'uch', 'structure', 'blag', 'exactly', 'problem', 'rugby', 'randoms', 'request', 'pantry', 'recently', 'lies', 'find', 'depression', 'inadequate', 'quite', 'scarper', 'cold', 's', 'thinks', 'scared', 'not', 'check', 'color', 'mondays', 'scotland', 'iced', 'nothingness', 'throw', 'it', 'sent', 'fit', 'stuck', 'escaped', 'bit', 'wait', 'logical', 'sort', 'hard-earned', 'subject', 'weather', 'difference', 'worried', 'save', 'says', 'started', 'where', 'normally', 'few', 'addicted', 'cheap', 'lithium', 'am', 'define', 'spanish-language', 'weird', 'useless', 'if', 'sloppy', 'loans', 'knew', 'do', 'test', 'line', 'misuse', 'sack', 'related', 'continuously', 'optimistic', 'seems', 'partly', 'their', 'clear', 'drivers', 'less', 'k', 'seven', 'minority', 'was', 'isn', 'salted', 'lose', 'supervision', 'tablet', 'rent', 'common', 'wave', 'school', 'weight', 'looking', 'social', 'some', 'invisible', 'stop', 'will', 'sure', 'shambles', 'admitted', 'third', 'furiously', 'leaving', 'ago', 'honours', 'email', 'fits', 'anti-aging', 'win', 'major', 'risky', 'sorry', 'an', 'jean', 'universities', 'carriage', 'pay', 'intelligent', 'each', 'weekend', 'way', 'meant', 'bath', 'online', 'fridge', 'woke', 'get', 'cpn', 'ailments', 'happening', 'purged', 'plummet', 'dictation', 'drunk', 'advertised', 'swallowing', 'today', 'whilst', 'bulimia', 'point', 'hour', 'distinctive', 'self-harming', 'haven', 'bosses', 'swings', 'team', 'apologise', 'wednesday', 'has', 'fan', 'temporary', 'watched', 'stab', 'contacting', 'surface', 'sit', 'return', 'rest', 'locks', 'referral', 'translated', 'someone', 'northern', 'annoying', 'definitely', 'kinda', 'trader', 'terrible', 'samaritans', 'spiders', 'attacks', 'at', 'i.e', 'package', 'disorder', 'never', 'want', 'ourselves', 'alarm', 'front', 'grumpy', 'freaking', 'defender', 'determined', 'anyway', 'money', 'ill', 'introverted', 'almost', 'assessment', 'might', 'anymore', 'city', 'eyeliner', 'sofa', 'blah', 'suffers', 'getting', 'term', 'stomach', 'during', 'seen', 'slide', 'nearby', 'hand', 'formal', 'mortgage', 'tea', 'medication', 'fake', 'title', 'duty', 'worry', 'drop', 'matters', 'aside', 'urges', 'career', 'live', 'mental', 'onto', 'moral', 'head', 'finally', 'pretty', 'rolling', 'bet', 'abroad', 'discharge', 'herself', 'athletic', 'badly', 'sometimes', 'suicidal', 'paddling', 'issue', 'saying', 'place', 'close', 'i', 'worst', 'took', 'degree',

'work', 'toilet', 'medical', 'changed', 'straight', 'thing', 'bills', 'past', 'doing', 'bolshy', 'face', 'burden', 'girlies', 'lazily', 'australia', 'looks', 'drag', 'insurance', 'swollen', 'bodies', 'ideal', 'obamacare'

The following words were tagged as POSITIVE SOUND:

'living', 'rooms', 'clocks', 'taught', 'thankfully', 'still', 'because', 'wouldn', 'borrowed', 'doesn', 'they', 'risk', 'investigator', 'blow', 'bpd', 'vendors', 'rests', 'purpose', 'be', 'having', 'but', 'tramadol', 'proper', 'ocean', 'go', 'patient', 'westernized', 'seasonal', 'information', 'allowed', 'compliance', 'iceland', 'involving', 'grown', 'category', 'plan', 'know', 'position', 'tuesdays', 'usual', 'zopiclone', 'why', 'considering', 'viewpoint', 'meeting', 'make', 'thyroid', 'absolutely', 'alive', 'conversation', 'thinking', 'joe', 'judge', 'nottingham', 'hearing', 'typed', 'opoid', 'effect', 'imagery', 'entered', 'landmark', 'uni', 'say', 'goals', 'court', 'focus', 'cuz', 'last', 'hello', 'off', 'writing', 'moon', 'criminal', 'seaneen', 'every', 'coherent', 'cereal', 'show', 'set', 'made', 'country', 'london', 'ends', 'cause', 'resurgence', 'psych', 'note', 'flat', 'describe', 'details', 'cheerios', 'listening', 'undergraduate', 'back', 'american', 'limited', 'space', 'university', 'admit', 'understand', 'sentence', 'notes', 'nami', 'dani', 'benzodiazepines', 'tend', 'helping', 'managing', 'apparently', 'multifamily', 'months', 'believing', 'put', 'ultimately', 'self-harmer', 'the', 'any', 'prefix', 'telling', 'power', 'stats', 'tell', 'as', 'refusal', 'karen', 'dysphagia', 'rang', 'requirement', 'research', 'lectures', 'co-codamol', 'waiting', 'effort', 'west', 'doctor', 'extraordinarily', 'unveiled', 'name', 'again', 'success', 'air', 'wail', 'got', 'old', 'message', 'voice', 'teach', 'finish', 'codeine', 'years', 'times', 'prepared', 'blood', 'round', 'lemonade', 'crises', 'difficult', 'friday', 'pack', 'customers', 'addict', 'run', 'manner', 'knows', 'of', 'year', 'pleading', 'congress', 'god', 'history', 'true', 'and', 'bulimic', 'venlafaxine', 'is', 'total', 'random', 'assessed', 'using', 'grass', 'think', 'through', 'seriously', 'reports', 'same', 'redundancy', 'beginning', 'job', 'allison', 'tests', 'extra', 'conclusion', 'a&e', 'trust', 'after', 'important', 'apply', 'everyday', 'feeling', 'end', 'groggy', 'positive', 'up', 'threatening', 'green', 'into', 'learn', 'plant', 'everywhere', 'patriotic', 'night', 'starbucks', 'over', 'mean', 'thirsty', 'received', 'smile', 'about', 'heart', 'tasks', 'aging', 'choose', 'under-grad', 'he', 'also', 'share', 'investigation', 'asperger', 'approached', 'knowledgeable', 'him', 'reflect', 'house', 'standard', 'english', 'fist', 'ideas', 'student', 'everything', 'personnel', 'swear', 'makes', 't', 'temazepam', 'reliant', 'marks', 'passport', 'substance', 'going', 'leaf', 'clothes', 'camden', 'employees', 'by', 'sean', 'graduate', 'two', 'suffer', 'loan', 'in', 'calm', 'real', 'welcome', 'derbyshire', 'thursday', 'this', 'uborka', 'used', 'control-freak', 'sales', 'whether', 'salvation', 'new', 'plans', 'absence', 'water', 'means', 'month', 'health', 'which', 'whole', 'like', 'defined', 'consensus', 'apartment', 'truth', 'defense', 'warning', 'honestly', 'asked', 'post-graduate', 'actually', 'better', 'bizarre', 'hypothyroidism', 'fact', 'dragging', 'adoption', 'alcohol', 'awareness', 'content', 'disaster', 'minute', 'act', 'colorless', 'always', 'buy', 'designed', 'three', 'supervisors', 'clown', 'stars', 'arrived', 'turned', 'medicaid', 'sense', 'gmt', 'here', 'yellow', 'everyone', 'first', 'day', 'reach', 'much', 'honest', 'on', 'wind', 'obnoxious', 'time', 'called', 'barman', 'necessary', 'curse', 'list', 'reasons', 'patience', 'consume', 'paranoia', 'inspectors', 'experienced', 'structure', 'blag', 'there', 'exactly', 'problem', 'identity', 'find', 'joint', 'cold', 'color', 'mondays', 'scotland', 'alliance', 'iced', 'escaped', 'hard-earned', 'logical', 'sort', 'weather', 'says', 'started', 'where', 'talk', 'lithium', 'am', 'spanish-language', 'define', 'test', 'misuse', 'spoken', 'related', 'these', 'continuously', 'k', 'seven', 'tablet', 'common', 'school', 'sure', 'email', 'major', 'risky', 'an', 'jean', 'matter', 'way', 'get', 'latched', 'convinced', 'swallowing', 'today', 'point', 'distinctive', 'accompanied', 'apologise', 'wednesday', 'rest', 'translated', 'someone', 'northern', 'definitely', 'samaritans', 'hear', 'attacks', 'at', 'i.e', 'determined', 'assessment', 'anymore', 'city', 'blah', 'getting', 'term', 'during', 'seen', 'mortgage', 'medication', 'fake', 'title', 'friend', 'onto', 'moral', 'finally', 'pretty', 'experience', 'leaves', 'sometimes', 'saying', 'place', 'i', 'rational', 'degree', 'bills', 'past', 'cases', 'burden', 'obamacare'

The following words were tagged as NEGATIVE SOUND:

'abuse', 'personalities', 'witty', 'lunches', 'f', 'saw', 'dog', 'nice', 'maybe', 'eyes', 'dreaming', 'suddenly', 'they', 'park', 'entitled', 'mood', 'giving', 'out', 'decrease', 'prescription', 'fluke', 'spending', 'stopped', 'pan', 'hat', 'stand', 'confidence', 'muttered', 'self-destruct', 'hormones', 'none', 'mummy-like', 'half', 'pills', 'wrong', 'days', 'appears', 'hospital', 'post', 'needless', 'resitting', 'numbers', 'soppy', 'wishing', 'eating', 'depressing', 'massive', 'keyed', 'crawling', 'floating', 'sitting', 'frankly', 'fear', 'resources', 'ended', 'family', 'crashed', 'were', 'binge-purge', 'reading', 'debates', 'dependency', 'gets', 'anyone', 'active', 'anything', 'rich', 'comment', 'creams', 'without', 'keeping', 'killer', 'simply', 'lottery', 'volunteering', 'stressful', 'later', 'staring', 'routine', 'parent', 'except', 'right', 'circling', 'hit', 'ring', 'problems', 'ran', 'them', 'antidepressant', 'allows', 'witless', 'would', 'session', 'repeatedly', 'alert', 'able', 'eastenders', 'adventure', 'religion', 'degrees', 'floor', 'women', 'ok', 'afternoon', 'given', 'steps', 'must', 'provided', 'seminar', 'fine', 'ones', 'often', 'provides', 'cars', 'wil', 'turn', 'confused', 'openness', 'resent', 'hides', 'stormed', 'overstay', 'inbetween', 'control', 'handed', 'won', 'kids', 'side-tracked', 'easier', 'hope', 'told', 'contacted', 'didn', 'westminster', 'forgot', 'faults', 'catch', 'blip', 'visits', 'ther', 'broken', 'perfectly', 'self-medicates', 'transcribed', 'physically', 'decade', 'down', 'wat', 'cry', 'army', 'relaxed', 'general', 'adhd', 'miles', 'surgery', 'lazy', 'phone', 'particularly', 'blanks', 'worse', 'wake', 'myself', 'with', 'we', 'to', 'speak', 'appointment', 'many', 'alone', 'its', 'security', 'realise', 'come', 'slipped', 'did', 'eventually', 'stabilising', 'master', 'sketch', 'moments', 'seeing', 'personality', 'toilets', 'upset', 'make-up', 'words', 'likes', 'known', 'lucky', 'truly', 'start', 'stay', 'group', 'securing', 'weeny', 'dark', 'system', 'process', 'already', 'laughs', 'side', 'slow', 'tended', 'life', 'appear', 'just', 'mooched', 'came', 'present', 'quickly', 'all', 'against', 'activities', 'count', 'foregone', 'adopting', 'across', 'issues', 'breeze', 'exercise', 'leans', 'self-harmed', 'pushing', 'being', 'fraud', 'places', 'mind', 'drugs', 'keep', 'anti-wrinkle', 'what', 'moods', 'dependence', 'failing', 'essence', 'probably', 'argument', 'struggle', 'until', 'opinion', 'painkillers', 'anti-depressants', 'or', 'taken', 'withdrawal', 'reply', 'edge', 'wants', 'ruth', 'party', 'endlessly', 'window', 'extremely', 'reduced', 'eaten', 'while', 'drug', 'phase', 'intern', 'psychiatrists', 'decades', 'little', 'effectively', 'our', 'enjoyable', 'happy', 'hiking', 'moved', 'hard', 'nearly', 'slept', 'syndrome', 'class', 'spouse-less', 'uncared', 'away', 'spent', 'least', 'lost', 'ringing', 'sounds', 'part', 'sang', 'restart', 'summary', 'others', 'planning', 'exclamation', 'deposit', 'useful', 'cream', 'once', 'great', 'move', 'weirdo', 'hurts', 'joy', 'boyfriend', 'surrounded', 'dazed', 'stupid', 'track', 'coping', 'slightly', 'perform', 'crashing', 'another', 'specifically', 'reason', 'cushioned', 'height', 'dose', 'big', 'worker', 'binged', 'comforted', 'hate', 'tough', 'medicine', 'tacky', 'before', 'meet', 'no', 'paying', 'coffee', 'other', 'friends', 'ready', 'etc', 'train', 'your', 'counter', 'millions', 'falls', 'depressed', 'frying', 'atheist', 'midst', 'towards', 'shout', 'public', 'that', 'else', 'punch', 'truck', 'capable', 'husband', 'when', 'dream', 'sits', 'type', 'met', 'although', 'panic', 'yourself', 'things', 'couldn', 'under', 'yesterday', 'kicks', 'gone', 'escape', 'lot', 'strangers', 'receive', 'cover', 'drink', 'can', 'short', 'though', 'totally', 'moan', 'clients', 'thought', 'see', 'then', 'sick', 'for', 'noticed', 'autistic', 'self-image', 'bustle', 'disability', 'over-stimulation', 'instead', 'caps', 'cmht', 'figured', 'fighting', 'seemed', 'comes', 'soon', 'hadn', 'wrote', 'number', 'industries', 'worth', 'additionally', 'damaging', 'state', 'smiley', 'cope', 'buying', 'bearly', 'person', 'happier', 'mask', 'wandering', 'self-harm', 'fatigue', 'believe', 'taking', 'earlier', 'walked', 'freedom', 'respected', 'comedy', 'especially', 'panicked', 'following', 'senses', 'bridge', 'club', 'now', 'script', 'angry', 'decided', 'chronic', 'should', 'free', 'help', 'whatsoever', 'bipolar', 'blog', 'pain', 'have', 'laugh', 'heard', 'very', 'bed', 'cherish', 'such', 'mournful', 'wish', 'week', 'laughing', 'her', 'gp', 'skydiving', 'support', 'had', 'pointed', 'withdrawing', 'cut', 'ages', 'happens', 'street', 'several', 'psychiatrist', 'humiliation', 'numb', 'checks', 'final', 'sparkling', 'huge', 'my', 'clean', 'till', 'those', 'most', 'frame', 'jobs', 'embarrass', 'you', 'lay', 'rock', 'usually', 'm&m', 'ever', 'however', 'feel', 'ensure', 'been', 'relocate', 'wtf', 'takes', 'ahead', 'lunch', 'terrified', 'change', 'normal', 'professional', 'try', 'genuinely', 'whenever', 'miffed', 'symptoms', 'own', 'safe', 'schedule', 'hardest', 'longer', 'england', 'revision', 'rather', 'illicit', 'above', 'dvd', 'look', 'read', 'pressure', 'something', 'awake', 'sleeping', 'making', 'dental', 'anybody', 'monday', 'dad', 'humor', 'battles', 'wasn', 'seem', 'far', 'addictive', 'etc', 'call', 'take', 'become', 'course', 'creamer', 'doze', 'studies', 'than', 'grapefruit', 'mention', 'food', 'needs', 'morning', 'argue', 'affect', 'hot', 'running', 'kept', 'trying', 'summarize', 'claims', 'due', 'girlfriend', 'soul', 'either', 'therefore', 'guess', 'treat', 'below', 'phobic', 'me', 'changing', 'dealt', 'beautiful', 'world', 'glad', 'she', 'energy', 'frustration', 'happiness', 'fed', 'exhibiting', 'hell', 'full', 'together', 'case', 'watching', 'next', 'girl', 'yard-less', 'leave', 'thrown', 'screw', 'bad', 'shut', 'sarcastically', 'abandonment', 'cares', 'coming', 'packet', 'overcompensates', 'dealing', 'unknown', 'skipping', 'mentally', 'pretzels', 'proud', 'tablets', 'wanted', 'summarized', 'advanced', 'film', 'continuing', 'lights', 'shaky', 'self-pitying', 'hasn', 'minds', 'situation', 'lecture', 'duties', 'packaging', 'corner', 'sedatives', 'lips', 'relapse',

'internet', 'happen', 'tomorrow', 'danced', 'girls', 'whinging', 'underlying', 'fun', 'possibly', 'story', 'hold', 'pub', 'graduated', 'delivery', 'could', 'around', 'otherwise', 'how', 'really', 'shower', 'fill', 'aren', 'snakes', 'freakily', 'nothing', 'hustle', 'cup', 'covered', 'tube', 'efficiently', 'thrive', 'easily', 'primarily', 'different', 'south', 'hack', 'fault', 'deep', 'healthcare', 'bar', 'give', 'ugly', 'home', 'engaging', 'one', 'anxiety', 'therapy', 'helpless', 'may', 'lately', 'joyless', 'medicines', 'uttered', 'explain', 'kind', 'flight', 'fight', 'millionaire', 'society', 'underneath', 'loud', 'sunday', 'mainly', 'urge', 'deal', 'prepare', 'child', 'unfortunately', 'ghastly', 'wonderful', 'allow', 'hands', 'incredibly', 'worked', 'went', 'interrupted', 'unlike', 'africa', 'loss', 'need', 'bells', 'diagnoses', 'crap', 'too', 'afraid', 'humorless', 'nerve', 'so', 'anonymous', 'attorney', 'more', 'national', 'coke', 'changes', 'good', 'long', 'care', 'wall', 'bore', 'warming', 'needed', 'wobble', 'physical', 'stumbled', 'hypnotics', 'peach', 'uch', 'rugby', 'randoms', 'request', 'pantry', 'recently', 'lies', 'rewards', 'community', 'depression', 'inadequate', 'quite', 'scarper', 's', 'yet', 'thinks', 'scared', 'not', 'check', 'from', 'nothingness', 'throw', 'it', 'sent', 'fit', 'stuck', 'newly', 'bit', 'wait', 'subject', 'death', 'difference', 'parents', 'worried', 'save', 'normally', 'few', 'addicted', 'dance', 'cheap', 'hopeless', 'weird', 'useless', 'if', 'sloppy', 'loans', 'knew', 'do', 'baby', 'line', 'well', 'housemates', 'sack', 'fulfilment', 'optimistic', 'seems', 'partly', 'their', 'clear', 'drivers', 'love', 'less', 'minority', 'was', 'isn', 'salted', 'lose', 'supervision', 'rent', 'wave', 'weight', 'loneliness', 'looking', 'social', 'some', 'invisible', 'stop', 'will', 'services', 'shambles', 'admitted', 'third', 'furiously', 'leaving', 'couple', 'a', 'ago', 'who', 'feels', 'honours', 'forever', 'fits', 'are', 'anti-aging', 'win', 'surprising', 'talking', 'sorry', 'loved', 'hi', 'universities', 'crying', 'carriage', 'mum', 'pay', 'lovely', 'starting', 'bedroom', 'each', 'weekend', 'meant', 'intelligent', 'bath', 'only', 'online', 'fridge', 'woke', 'even', 'cpn', 'ailments', 'happening', 'purged', 'plummet', 'moment', 'dictation', 'room', 'bloody', 'drunk', 'advertised', 'whilst', 'bulimia', 'hour', 'self-harming', 'team', 'haven', 'bosses', 'swings', 'cried', 'has', 'felt', 'don', 'fan', 'both', 'temporary', 'watched', 'stab', 'contacting', 'surface', 'sit', 'return', 'locks', 'referral', 'annoying', 'kinda', 'trader', 'terrible', 'spiders', 'package', 'disorder', 'fall', 'never', 'want', 'since', 'ourselves', 'lord', 'alarm', 'front', 'grumpy', 'freaking', 'defender', 'anyway', 'money', 'ill', 'introverted', 'almost', 'might', 'eyeliner', 'sofa', 'suffers', 'enter', 'finds', 'said', 'stomach', 'does', 'slide', 'nearby', 'strong', 'hand', 'formal', 'tea', 'tries', 'us', 'remember', 'duty', 'people', 'drop', 'worry', 'aside', 'matters', 'urges', 'circumstances', 'career', 'live', 'mental', 'let', 'affective', 'head', 'perfect', 'rolling', 'bet', 'abroad', 'discharge', 'herself', 'points', 'athletic', 'badly', 'suicidal', 'sleep', 'paddling', 'issue', 'stuff', 'close', 'worst', 'toilet', 'took', 'work', 'loves', 'medical', 'changed', 'straight', 'thing', 'doing', 'along', 'tired', 'bolshy', 'face', 'girlies', 'lazily', 'australia', 'looks', 'drag', 'insurance', 'swollen', 'found', 'bodies', 'ideal', 'oh'

The following words were tagged as POSITIVE LIGHT:

'living', 'taught', 'f', 'thankfully', 'still', 'because', 'nice', 'borrowed', 'doesn', 'suddenly', 'park', 'entitled', 'investigator', 'mood', 'vendors', 'rests', 'decrease', 'fluke', 'stopped', 'stand', 'confidence', 'muttered', 'purpose', 'none', 'be', 'having', 'tramadol', 'appears', 'proper', 'needless', 'ocean', 'resitting', 'numbers', 'go', 'patient', 'crawling', 'sitting', 'seasonal', 'allowed', 'iceland', 'family', 'involving', 'grown', 'binge-purge', 'reading', 'debates', 'category', 'active', 'comment', 'know', 'position', 'tuesdays', 'without', 'usual', 'zopiclone', 'simply', 'later', 'why', 'staring', 'parent', 'except', 'considering', 'hit', 'problems', 'viewpoint', 'meeting', 'ran', 'allows', 'session', 'absolutely', 'repeatedly', 'alive', 'alert', 'eastenders', 'conversation', 'thinking', 'joe', 'ok', 'afternoon', 'steps', 'judge', 'provided', 'nottingham', 'fine', 'provides', 'hearing', 'typed', 'wil', 'openness', 'hides', 'stormed', 'overstay', 'inbetween', 'entered', 'landmark', 'hope', 'uni', 'contacted', 'say', 'westminster', 'faults', 'court', 'catch', 'ther', 'focus', 'cuz', 'perfectly', 'physically', 'decade', 'down', 'seaneen', 'relaxed', 'every', 'coherent', 'cereal', 'adhd', 'miles', 'lazy', 'particularly', 'blanks', 'set', 'speak', 'london', 'cause', 'realise', 'personality', 'eventually', 'stabilising', 'sketch', 'toilets', 'note', 'words', 'known', 'flat', 'lucky', 'truly', 'details', 'cheerios', 'listening', 'process', 'already', 'tended', 'mooched', 'back', 'american', 'space', 'university', 'quickly', 'all', 'understand', 'admit', 'against', 'nami', 'dani', 'count', 'foregone', 'adopting', 'across', 'breeze', 'leans', 'tend', 'helping', 'apparently', 'believing', 'put', 'ultimately', 'keep', 'moods', 'dependence', 'essence', 'probably', 'the', 'reply', 'edge', 'wants', 'ruth', 'prefix', 'telling', 'power', 'stats', 'tell', 'as', 'eaten', 'phase', 'refusal', 'karen', 'psychiatrists', 'dysphagia', 'our', 'happy', 'lectures', 'co-codamol', 'nearly', 'waiting', 'effort', 'class', 'west', 'doctor', 'away', 'spent', 'extraordinarily', 'sang', 'restart', 'summary', 'planning', 'air', 'wail', 'got', 'great', 'message', 'joy', 'boyfriend',

'voice', 'teach', 'times', 'slightly', 'blood', 'specifically', 'reason', 'dose', 'height', 'round', 'lemonade', 'difficult', 'tough', 'tacky', 'before', 'meet', 'no', 'other', 'pack', 'etc', 'customers', 'counter', 'depressed', 'midst', 'year', 'punch', 'pleading', 'congress', 'sits', 'although', 'things', 'history', 'true', 'and', 'couldn't', 'yesterday', 'kicks', 'venlafaxine', 'is', 'total', 'random', 'moan', 'through', 'seriously', 'bustle', 'noticed', 'same', 'instead', 'caps', 'figured', 'seemed', 'hadn't', 'wrote', 'job', 'allison', 'tests', 'extra', 'conclusion', 'trust', 'self-harm', 'after', 'important', 'apply', 'end', 'bridge', 'following', 'club', 'positive', 'decided', 'whatsoever', 'help', 'up', 'green', 'blog', 'into', 'plant', 'have', 'laugh', 'heard', 'bed', 'patriotic', 'such', 'laughing', 'her', 'night', 'support', 'starbucks', 'pointed', 'ages', 'over', 'street', 'received', 'smile', 'numb', 'checks', 'final', 'my', 'about', 'embarrass', 'lay', 'feel', 'takes', 'genuinely', 'normal', 'try', 'whenever', 'under-grad', 'he', 'miffed', 'symptoms', 'share', 'asperger', 'approached', 'him', 'reflect', 'hardest', 'house', 'england', 'rather', 'standard', 'fist', 'read', 'everything', 'awake', 'making', 'makes', 't', 'temazepam', 'battles', 'passport', 'wasn't', 'substance', 'going', 'far', 'leaf', 'camden', 'employees', 'become', 'course', 'by', 'mention', 'sean', 'kept', 'due', 'girlfriend', 'two', 'soul', 'therefore', 'treat', 'below', 'me', 'in', 'dealt', 'calm', 'glad', 'she', 'energy', 'welcome', 'derbyshire', 'exhibiting', 'hell', 'full', 'this', 'case', 'watching', 'uborka', 'used', 'sales', 'whether', 'salvation', 'abandonment', 'cares', 'absence', 'month', 'unknown', 'like', 'defined', 'summarized', 'truth', 'defense', 'lights', 'shaky', 'warning', 'honestly', 'hasn't', 'situation', 'packaging', 'lips', 'asked', 'actually', 'girls', 'underlying', 'fun', 'hypothyroidism', 'story', 'dragging', 'aren't', 'nothing', 'tube', 'thrive', 'content', 'awareness', 'easily', 'different', 'south', 'hack', 'fault', 'deep', 'disaster', 'give', 'home', 'one', 'minute', 'always', 'joyless', 'designed', 'uttered', 'three', 'supervisors', 'fight', 'underneath', 'sunday', 'prepare', 'turned', 'unfortunately', 'medicaid', 'wonderful', 'allow', 'hands', 'sense', 'unlike', 'here', 'africa', 'yellow', 'need', 'crap', 'first', 'reach', 'much', 'honest', 'on', 'wind', 'called', 'coke', 'list', 'long', 'reasons', 'patience', 'experienced', 'uch', 'there', 'exactly', 'randoms', 'request', 'recently', 'depression', 'joint', 's', 'thinks', 'not', 'check', 'mondays', 'scotland', 'alliance', 'from', 'sent', 'escaped', 'hard-earned', 'wait', 'logical', 'sort', 'death', 'weather', 'difference', 'parents', 'worried', 'save', 'says', 'started', 'talk', 'few', 'cheap', 'lithium', 'knew', 'baby', 'line', 'misuse', 'housemates', 'spoken', 'related', 'these', 'optimistic', 'love', 'less', 'k', 'seven', 'minority', 'salted', 'looking', 'social', 'invisible', 'stop', 'sure', 'shambles', 'third', 'leaving', 'couple', 'ago', 'email', 'major', 'surprising', 'talking', 'an', 'hi', 'jean', 'crying', 'mum', 'starting', 'lovely', 'each', 'matter', 'way', 'online', 'woke', 'even', 'latched', 'dictation', 'convinced', 'whilst', 'distinctive', 'swings', 'cried', 'apologise', 'fan', 'temporary', 'watched', 'stab', 'contacting', 'surface', 'rest', 'referral', 'translated', 'someone', 'northern', 'definitely', 'samaritans', 'terrible', 'hear', 'at', 'i.e.', 'never', 'ourselves', 'lord', 'front', 'determined', 'anyway', 'almost', 'assessment', 'anymore', 'sofa', 'blah', 'getting', 'term', 'said', 'stomach', 'during', 'slide', 'nearby', 'tea', 'remember', 'worry', 'friend', 'drop', 'aside', 'onto', 'affective', 'finally', 'pretty', 'discharge', 'abroad', 'herself', 'points', 'athletic', 'badly', 'sometimes', 'saying', 'place', 'toilet', 'took', 'degree', 'work', 'loves', 'medical', 'straight', 'bills', 'past', 'along', 'tired', 'girlies', 'australia', 'looks', 'drag', 'obamacare'

The following words were tagged as NEGATIVE LIGHT:

'abuse', 'rooms', 'clocks', 'personalities', 'witty', 'lunches', 'saw', 'wouldn't', 'dog', 'maybe', 'eyes', 'dreaming', 'they', 'risk', 'blow', 'bpd', 'giving', 'out', 'prescription', 'spending', 'pan', 'hat', 'self-destruct', 'hormones', 'mummy-like', 'half', 'pills', 'wrong', 'days', 'but', 'hospital', 'post', 'soppy', 'wishing', 'westernized', 'eating', 'depressing', 'massive', 'keyed', 'floating', 'information', 'frankly', 'fear', 'resources', 'compliance', 'ended', 'crashed', 'were', 'dependency', 'gets', 'anyone', 'plan', 'anything', 'rich', 'creams', 'keeping', 'killer', 'lottery', 'volunteering', 'stressful', 'routine', 'right', 'circling', 'ring', 'them', 'make', 'antidepressant', 'witless', 'would', 'thyroid', 'able', 'religion', 'adventure', 'degrees', 'floor', 'women', 'given', 'must', 'seminar', 'ones', 'often', 'cars', 'turn', 'confused', 'resent', 'opoid', 'effect', 'imagery', 'control', 'handed', 'won', 'kids', 'side-tracked', 'easier', 'told', 'didn't', 'goals', 'forgot', 'blip', 'visits', 'broken', 'last', 'hello', 'off', 'writing', 'transcribed', 'moon', 'self-medicates', 'criminal', 'wat', 'cry', 'army', 'general', 'surgery', 'phone', 'show', 'worse', 'wake', 'myself', 'with', 'we', 'to', 'made', 'appointment', 'many', 'country', 'alone', 'ends', 'its', 'security', 'resurgence', 'come', 'slipped', 'did', 'master', 'moments', 'seeing', 'psych', 'upset', 'make-up', 'likes', 'describe', 'start', 'stay', 'group', 'securing', 'weeny', 'dark', 'system', 'undergraduate', 'laughs', 'side', 'slow', 'life', 'appear', 'just', 'came', 'limited', 'present', 'sentence', 'notes', 'activities', 'issues', 'benzodiazepines', 'exercise', 'self-harmed', 'managing', 'pushing', 'being', 'multifamily', 'fraud', 'months', 'places', 'mind', 'drugs',

'anti-wrinkle', 'what', 'failing', 'argument', 'self-harmer', 'struggle', 'until', 'opinion', 'painkillers', 'anti-depressants', 'or', 'taken', 'any', 'withdrawal', 'party', 'endlessly', 'window', 'extremely', 'reduced', 'while', 'drug', 'intern', 'decades', 'little', 'effectively', 'enjoyable', 'rang', 'requirement', 'hiking', 'research', 'moved', 'hard', 'slept', 'syndrome', 'spouse-less', 'uncared', 'least', 'lost', 'ringing', 'sounds', 'unveiled', 'part', 'name', 'again', 'success', 'others', 'exclamation', 'deposit', 'useful', 'cream', 'old', 'once', 'move', 'weirdo', 'hurts', 'surrounded', 'finish', 'codeine', 'stupid', 'dazed', 'years', 'track', 'prepared', 'coping', 'perform', 'crashing', 'another', 'cushioned', 'big', 'worker', 'binged', 'comforted', 'crises', 'hate', 'medicine', 'coffee', 'paying', 'friday', 'friends', 'ready', 'train', 'addict', 'your', 'millions', 'run', 'manner', 'falls', 'frying', 'atheist', 'knows', 'towards', 'shout', 'of', 'public', 'else', 'that', 'truck', 'capable', 'husband', 'when', 'dream', 'type', 'met', 'yourself', 'panic', 'god', 'under', 'bulimic', 'gone', 'escape', 'lot', 'strangers', 'receive', 'cover', 'drink', 'can', 'short', 'though', 'totally', 'assessed', 'using', 'grass', 'clients', 'think', 'thought', 'see', 'then', 'reports', 'sick', 'for', 'autistic', 'self-image', 'redundancy', 'disability', 'over-stimulation', 'beginning', 'cmht', 'fighting', 'comes', 'soon', 'number', 'industries', 'worth', 'additionally', 'damaging', 'state', 'smiley', 'cope', 'buying', 'bearly', 'person', 'a&e', 'happier', 'mask', 'wandering', 'fatigue', 'believe', 'taking', 'everyday', 'earlier', 'feeling', 'walked', 'freedom', 'respected', 'comedy', 'especially', 'panicked', 'groggy', 'senses', 'now', 'script', 'angry', 'chronic', 'should', 'free', 'bipolar', 'threatening', 'learn', 'pain', 'everywhere', 'cherish', 'very', 'mournful', 'wish', 'week', 'gp', 'skydiving', 'had', 'withdrawing', 'cut', 'happens', 'mean', 'thirsty', 'several', 'psychiatrist', 'humiliation', 'sparkling', 'huge', 'clean', 'till', 'those', 'most', 'heart', 'frame', 'jobs', 'you', 'rock', 'm&m', 'usually', 'tasks', 'however', 'ever', 'ensure', 'been', 'relocate', 'wtf', 'ahead', 'aging', 'lunch', 'terrified', 'change', 'professional', 'choose', 'also', 'own', 'investigation', 'knowledgeable', 'safe', 'schedule', 'longer', 'revision', 'illicit', 'english', 'above', 'dvd', 'look', 'ideas', 'student', 'pressure', 'something', 'sleeping', 'personnel', 'swear', 'dental', 'anybody', 'monday', 'dad', 'reliant', 'marks', 'humor', 'seem', 'addictive', 'otc', 'clothes', 'call', 'take', 'creamer', 'doze', 'studies', 'than', 'grapefruit', 'morning', 'food', 'needs', 'argue', 'affect', 'hot', 'running', 'trying', 'summarize', 'claims', 'graduate', 'suffer', 'loan', 'either', 'guess', 'phobic', 'changing', 'beautiful', 'world', 'real', 'frustration', 'happiness', 'fed', 'thursday', 'together', 'thrown', 'next', 'girl', 'yard-less', 'leave', 'screw', 'bad', 'shut', 'sarcastically', 'control-freak', 'new', 'plans', 'coming', 'packet', 'water', 'means', 'overcompensates', 'health', 'which', 'dealing', 'whole', 'skipping', 'consensus', 'mentally', 'pretzels', 'proud', 'apartment', 'wanted', 'tablets', 'advanced', 'film', 'continuing', 'self-pitying', 'minds', 'lecture', 'duties', 'corner', 'sedatives', 'relapse', 'post-graduate', 'internet', 'better', 'happen', 'tomorrow', 'bizarre', 'danced', 'whinging', 'possibly', 'hold', 'pub', 'fact', 'graduated', 'delivery', 'could', 'around', 'otherwise', 'how', 'really', 'shower', 'fill', 'freakily', 'snakes', 'hustle', 'cup', 'adoption', 'alcohol', 'covered', 'efficiently', 'primarily', 'healthcare', 'bar', 'ugly', 'engaging', 'act', 'anxiety', 'therapy', 'helpless', 'colorless', 'lately', 'may', 'buy', 'medicines', 'explain', 'kind', 'flight', 'clown', 'millionaire', 'society', 'stars', 'loud', 'mainly', 'urge', 'deal', 'arrived', 'child', 'ghastly', 'incredibly', 'worked', 'went', 'gmt', 'interrupted', 'loss', 'everyone', 'bells', 'diagnoses', 'too', 'afraid', 'humorless', 'day', 'nerve', 'so', 'anonymous', 'attorney', 'more', 'obnoxious', 'national', 'time', 'barman', 'necessary', 'curse', 'changes', 'good', 'care', 'wall', 'consume', 'paranoia', 'bore', 'warming', 'needed', 'wobble', 'physical', 'stumbled', 'hypnotics', 'peach', 'inspectors', 'structure', 'blag', 'problem', 'rugby', 'pantry', 'identity', 'lies', 'rewards', 'community', 'find', 'inadequate', 'quite', 'scarper', 'cold', 'yet', 'scared', 'color', 'iced', 'nothingness', 'throw', 'it', 'stuck', 'fit', 'bit', 'newly', 'subject', 'where', 'normally', 'addicted', 'dance', 'am', 'spanish-language', 'define', 'hopeless', 'weird', 'useless', 'if', 'sloppy', 'loans', 'do', 'test', 'well', 'sack', 'fulfilment', 'continuously', 'seems', 'partly', 'their', 'clear', 'drivers', 'was', 'isn', 'lose', 'supervision', 'tablet', 'rent', 'common', 'wave', 'school', 'weight', 'loneliness', 'some', 'will', 'services', 'admitted', 'furiously', 'a', 'who', 'feels', 'honours', 'forever', 'fits', 'are', 'anti-aging', 'win', 'risky', 'sorry', 'loved', 'universities', 'carriage', 'pay', 'intelligent', 'bedroom', 'weekend', 'meant', 'bath', 'only', 'fridge', 'get', 'cpn', 'ailments', 'happening', 'purged', 'plummet', 'moment', 'room', 'bloody', 'drunk', 'advertised', 'swallowing', 'today', 'bulimia', 'point', 'hour', 'self-harming', 'team', 'haven', 'bosses', 'has', 'accompanied', 'felt', 'wednesday', 'don', 'both', 'sit', 'return', 'locks', 'annoying', 'kinda', 'trader', 'spiders', 'attacks', 'package', 'disorder', 'fall', 'want', 'since', 'alarm', 'grumpy', 'freaking', 'defender', 'money', 'ill', 'introverted', 'might', 'city', 'eyeliner', 'suffers', 'enter', 'finds', 'does', 'seen', 'strong', 'hand', 'formal', 'mortgage', 'medication', 'tries', 'us', 'fake', 'title', 'duty', 'people', 'matters', 'urges', 'circumstances', 'career', 'live', 'mental', 'let', 'moral', 'head', 'perfect', 'rolling', 'bet', 'experience', 'leaves', 'suicidal', 'sleep', 'paddling', 'issue', 'stuff', 'close', 'i', 'worst', 'rational', 'changed', 'thing', 'doing', 'bolshy', 'cases', 'face', 'burden', 'lazily', 'insurance', 'swollen', 'found', 'bodies', 'ideal', 'oh'

The following words were tagged as POSITIVE COSMIC:

'rooms', 'witty', 'f', 'saw', 'thankfully', 'because', 'maybe', 'eyes', 'dreaming', 'suddenly', 'they', 'park', 'entitled', 'mood', 'bpd', 'fluke', 'pan', 'stopped', 'stand', 'confidence', 'muttered', 'none', 'wrong', 'days', 'but', 'appears', 'needless', 'resitting', 'go', 'soppy', 'westernized', 'depressing', 'keyed', 'crawling', 'sitting', 'frankly', 'fear', 'reading', 'debates', 'gets', 'comment', 'position', 'without', 'keeping', 'usual', 'except', 'hit', 'viewpoint', 'make', 'would', 'session', 'thyroid', 'repeatedly', 'alert', 'able', 'degrees', 'floor', 'ok', 'afternoon', 'given', 'steps', 'provided', 'seminar', 'provides', 'wil', 'turn', 'confused', 'hides', 'stormed', 'inbetween', 'entered', 'easier', 'told', 'westminster', 'faults', 'catch', 'blip', 'ther', 'cuz', 'perfectly', 'hello', 'writing', 'decade', 'down', 'wat', 'relaxed', 'every', 'miles', 'lazy', 'particularly', 'blanks', 'worse', 'wake', 'myself', 'country', 'alone', 'ends', 'its', 'security', 'realise', 'slipped', 'personality', 'eventually', 'stabilising', 'sketch', 'psych', 'upset', 'words', 'known', 'lucky', 'describe', 'truly', 'stay', 'already', 'laughs', 'tended', 'life', 'appear', 'mooched', 'present', 'quickly', 'admit', 'space', 'understand', 'sentence', 'against', 'count', 'foregone', 'breeze', 'leans', 'tend', 'managing', 'pushing', 'apparently', 'fraud', 'months', 'drugs', 'ultimately', 'what', 'failing', 'probably', 'argument', 'self-harmer', 'struggle', 'until', 'taken', 'any', 'withdrawal', 'reply', 'ruth', 'endlessly', 'window', 'prefix', 'telling', 'stats', 'reduced', 'eaten', 'phase', 'refusal', 'dysphagia', 'rang', 'requirement', 'moved', 'hard', 'nearly', 'slept', 'class', 'west', 'spouse-less', 'uncared', 'spent', 'extraordinarily', 'least', 'lost', 'sang', 'restart', 'again', 'summary', 'others', 'planning', 'exclamation', 'old', 'message', 'years', 'prepared', 'slightly', 'another', 'specifically', 'dose', 'height', 'round', 'big', 'comforted', 'tough', 'tacky', 'before', 'meet', 'no', 'other', 'friends', 'ready', 'etc', 'train', 'your', 'counter', 'run', 'manner', 'falls', 'depressed', 'knows', 'midst', 'towards', 'of', 'pleading', 'capable', 'dream', 'sits', 'type', 'met', 'although', 'true', 'couldn't', 'under', 'yesterday', 'kicks', 'gone', 'cover', 'total', 'random', 'though', 'using', 'thought', 'seriously', 'bustle', 'same', 'redundancy', 'instead', 'beginning', 'figured', 'seemed', 'hadn', 'number', 'worth', 'smiley', 'cope', 'conclusion', 'happier', 'after', 'important', 'believe', 'apply', 'everyday', 'earlier', 'feeling', 'respected', 'comedy', 'especially', 'panicked', 'following', 'groggy', 'positive', 'script', 'angry', 'decided', 'should', 'help', 'whatsoever', 'bipolar', 'learn', 'cherish', 'such', 'heard', 'mournful', 'had', 'pointed', 'ages', 'cut', 'happens', 'thirsty', 'humiliation', 'final', 'checks', 'sparkling', 'clean', 'jobs', 'embarrass', 'lay', 'tasks', 'ever', 'relocate', 'genuinely', 'choose', 'miffed', 'also', 'symptoms', 'knowledgeable', 'safe', 'hardest', 'rather', 'standard', 'illicit', 'student', 'something', 'sleeping', 'swear', 'anybody', 'marks', 'wasn', 'substance', 'going', 'far', 'become', 'course', 'doze', 'argue', 'mention', 'food', 'hot', 'running', 'trying', 'claims', 'due', 'soul', 'suffer', 'either', 'therefore', 'guess', 'treat', 'below', 'phobic', 'changing', 'dealt', 'calm', 'energy', 'welcome', 'frustration', 'happiness', 'exhibiting', 'hell', 'thursday', 'full', 'together', 'this', 'thrown', 'watching', 'girl', 'leave', 'shut', 'whether', 'salvation', 'abandonment', 'new', 'plans', 'absence', 'overcompensates', 'means', 'which', 'unknown', 'whole', 'defined', 'consensus', 'truth', 'advanced', 'lights', 'shaky', 'warning', 'honestly', 'self-pitying', 'hasn', 'minds', 'lecture', 'corner', 'asked', 'happen', 'danced', 'girls', 'underlying', 'possibly', 'story', 'fact', 'otherwise', 'how', 'really', 'aren', 'freakily', 'nothing', 'hustle', 'tube', 'awareness', 'content', 'easily', 'primarily', 'south', 'fault', 'deep', 'engaging', 'anxiety', 'helpless', 'colorless', 'always', 'uttered', 'kind', 'underneath', 'sunday', 'mainly', 'prepare', 'arrived', 'unfortunately', 'allow', 'hands', 'worked', 'went', 'gmt', 'unlike', 'loss', 'everyone', 'diagnoses', 'so', 'anonymous', 'honest', 'more', 'time', 'curse', 'coke', 'long', 'reasons', 'patience', 'bore', 'warming', 'needed', 'stumbled', 'hypnotics', 'uch', 'exactly', 'randoms', 'request', 'recently', 'depression', 'quite', 's', 'cold', 'yet', 'thinks', 'scared', 'not', 'check', 'throw', 'stuck', 'escaped', 'wait', 'logical', 'sort', 'difference', 'parents', 'worried', 'started', 'where', 'few', 'cheap', 'define', 'hopeless', 'useless', 'if', 'sloppy', 'knew', 'do', 'line', 'misuse', 'related', 'continuously', 'seems', 'their', 'clear', 'less', 'k', 'minority', 'was', 'isn', 'lose', 'wave', 'school', 'loneliness', 'looking', 'social', 'invisible', 'stop', 'will', 'sure', 'shambles', 'third', 'leaving', 'couple', 'ago', 'feels', 'forever', 'major', 'surprising', 'sorry', 'risky', 'loved', 'hi', 'carriage', 'each', 'way', 'bath', 'get', 'even', 'happening', 'plummet', 'moment', 'convinced', 'drunk', 'swallowing', 'today', 'whilst', 'point', 'hour', 'distinctive', 'swings', 'apologise', 'don', 'both', 'temporary', 'watched', 'contacting', 'annoying', 'trader', 'spiders', 'at', 'i.e', 'never', 'since', 'lord', 'anyway', 'introverted', 'assessment', 'might', 'anymore', 'term', 'enter', 'finds', 'does', 'seen', 'slide', 'nearby', 'medication', 'us', 'title', 'worry', 'aside', 'live', 'let', 'affective', 'perfect', 'bet', 'abroad', 'discharge', 'herself', 'points', 'badly', 'leaves', 'sometimes', 'sleep', 'took', 'degree', 'straight', 'bolshy', 'girlies', 'lazily', 'looks', 'found', 'bodies', 'ideal', 'oh'

The following words were tagged as NEGATIVE COSMIC:

'living', 'abuse', 'clocks', 'personalities', 'taught', 'lunches', 'still', 'wouldn', 'dog', 'nice', 'borrowed', 'doesn', 'they', 'risk', 'investigator', 'blow', 'vendors', 'rests', 'giving', 'out', 'decrease', 'prescription', 'spending', 'hat', 'self-destruct', 'purpose', 'hormones', 'mummy-like', 'half', 'pills', 'be', 'having', 'tramadol', 'hospital', 'proper', 'post', 'ocean', 'numbers', 'patient', 'wishing', 'eating', 'massive', 'floating', 'seasonal', 'information', 'allowed', 'resources', 'compliance', 'iceland', 'family', 'crashed', 'ended', 'grown', 'involving', 'were', 'binge-purge', 'dependency', 'category', 'anyone', 'plan', 'active', 'anything', 'rich', 'know', 'tuesdays', 'creams', 'zopiclone', 'killer', 'simply', 'lottery', 'volunteering', 'stressful', 'later', 'why', 'routine', 'parent', 'staring', 'right', 'considering', 'circling', 'ring', 'problems', 'meeting', 'ran', 'them', 'antidepressant', 'allows', 'witless', 'absolutely', 'alive', 'eastenders', 'religion', 'adventure', 'conversation', 'thinking', 'women', 'joe', 'must', 'judge', 'nottingham', 'fine', 'ones', 'often', 'hearing', 'typed', 'cars', 'openness', 'resent', 'opoid', 'effect', 'overstay', 'imagery', 'landmark', 'control', 'handed', 'won', 'kids', 'side-tracked', 'hope', 'uni', 'contacted', 'say', 'didn', 'goals', 'forgot', 'court', 'visits', 'focus', 'broken', 'last', 'stuff', 'off', 'transcribed', 'physically', 'moon', 'self-medicates', 'criminal', 'cry', 'army', 'seaneen', 'cereal', 'coherent', 'general', 'adhd', 'surgery', 'phone', 'show', 'set', 'with', 'we', 'to', 'made', 'speak', 'many', 'appointment', 'london', 'resurgence', 'cause', 'come', 'did', 'master', 'moments', 'seeing', 'toilets', 'make-up', 'likes', 'note', 'flat', 'start', 'details', 'group', 'securing', 'cheerios', 'listening', 'system', 'weeny', 'process', 'dark', 'undergraduate', 'side', 'slow', 'just', 'back', 'came', 'american', 'limited', 'university', 'all', 'notes', 'nami', 'activities', 'dani', 'adopting', 'across', 'issues', 'benzodiazepines', 'exercise', 'helping', 'self-harmed', 'being', 'multifamily', 'places', 'believing', 'mind', 'put', 'keep', 'anti-wrinkle', 'moods', 'dependence', 'essence', 'opinion', 'painkillers', 'the', 'anti-depressants', 'or', 'edge', 'wants', 'party', 'power', 'extremely', 'tell', 'as', 'while', 'drug', 'intern', 'karen', 'psychiatrists', 'decades', 'little', 'effectively', 'our', 'enjoyable', 'happy', 'hiking', 'research', 'lectures', 'co-codamol', 'waiting', 'syndrome', 'effort', 'doctor', 'away', 'ringing', 'sounds', 'unveiled', 'part', 'name', 'success', 'air', 'wail', 'got', 'deposit', 'useful', 'cream', 'once', 'great', 'move', 'weirdo', 'hurts', 'joy', 'boyfriend', 'voice', 'surrounded', 'teach', 'finish', 'codeine', 'stupid', 'dazed', 'track', 'coping', 'times', 'perform', 'crashing', 'blood', 'reason', 'cushioned', 'lemonade', 'worker', 'binged', 'crises', 'difficult', 'hate', 'medicine', 'coffee', 'paying', 'friday', 'pack', 'customers', 'addict', 'millions', 'frying', 'atheist', 'shout', 'public', 'that', 'else', 'year', 'punch', 'truck', 'husband', 'when', 'congress', 'yourself', 'god', 'panic', 'things', 'history', 'and', 'bulimic', 'escape', 'venlafaxine', 'lot', 'strangers', 'receive', 'is', 'drink', 'can', 'short', 'totally', 'assessed', 'grass', 'moan', 'clients', 'think', 'see', 'then', 'through', 'reports', 'sick', 'for', 'noticed', 'autistic', 'self-image', 'disability', 'over-stimulation', 'caps', 'cmht', 'fighting', 'comes', 'soon', 'wrote', 'industries', 'job', 'allison', 'damaging', 'additionally', 'tests', 'extra', 'state', 'buying', 'bearly', 'person', 'a&e', 'mask', 'trust', 'wandering', 'self-harm', 'fatigue', 'taking', 'walked', 'end', 'freedom', 'bridge', 'club', 'senses', 'now', 'chronic', 'free', 'up', 'threatening', 'blog', 'green', 'into', 'plant', 'pain', 'have', 'laugh', 'very', 'bed', 'patriotic', 'everywhere', 'wish', 'week', 'laughing', 'her', 'night', 'gp', 'skydiving', 'support', 'starbucks', 'withdrawing', 'over', 'mean', 'street', 'received', 'psychiatrist', 'smile', 'several', 'numb', 'huge', 'my', 'about', 'those', 'till', 'heart', 'most', 'frame', 'you', 'rock', 'usually', 'm&m', 'feel', 'however', 'ensure', 'been', 'wtf', 'takes', 'ahead', 'aging', 'lunch', 'terrified', 'change', 'normal', 'professional', 'try', 'whenever', 'under-grad', 'he', 'share', 'own', 'investigation', 'asperger', 'approached', 'schedule', 'him', 'reflect', 'longer', 'house', 'revision', 'england', 'english', 'above', 'dvd', 'fist', 'look', 'read', 'ideas', 'pressure', 'everything', 'awake', 'making', 'personnel', 'dental', 'monday', 'makes', 'dad', 't', 'reliant', 'temazepam', 'humor', 'battles', 'passport', 'seem', 'addictive', 'leaf', 'otc', 'clothes', 'call', 'take', 'camden', 'employees', 'by', 'creamier', 'studies', 'than', 'grapefruit', 'morning', 'affect', 'needs', 'sean', 'kept', 'summarize', 'graduate', 'girlfriend', 'two', 'loan', 'me', 'in', 'beautiful', 'world', 'glad', 'she', 'real', 'derbyshire', 'fed', 'case', 'next', 'uborka', 'yard-less', 'used', 'screw', 'bad', 'control-freak', 'sales', 'sarcastically', 'cares', 'coming', 'packet', 'water', 'month', 'health', 'dealing', 'like', 'skipping', 'mentally', 'pretzels', 'proud', 'tablets', 'apartment', 'wanted', 'summarized', 'film', 'defense', 'continuing', 'situation', 'duties', 'packaging', 'sedatives', 'lips', 'relapse', 'post-graduate', 'internet', 'actually', 'better', 'tomorrow', 'bizarre', 'whinging', 'fun', 'hypothyroidism', 'hold', 'pub', 'graduated', 'delivery', 'could', 'dragging', 'around', 'shower', 'fill', 'snakes', 'cup', 'adoption', 'alcohol', 'covered', 'efficiently', 'thrive', 'different', 'hack', 'healthcare', 'disaster', 'bar', 'give', 'ugly', 'home', 'one', 'minute', 'act', 'therapy', 'may', 'lately', 'buy', 'joyless', 'medicines', 'designed', 'explain', 'three', 'supervisors', 'clown', 'flight', 'fight',

'millionaire', 'society', 'stars', 'loud', 'urge', 'deal', 'turned', 'child', 'ghastly', 'medicaid', 'wonderful', 'incredibly', 'sense', 'interrupted', 'here', 'africa', 'yellow', 'need', 'bells', 'too', 'crap', 'afraid', 'first', 'humorless', 'day', 'nerve', 'reach', 'much', 'on', 'attorney', 'wind', 'obnoxious', 'national', 'called', 'barman', 'necessary', 'list', 'changes', 'good', 'care', 'wall', 'consume', 'paranoia', 'wobble', 'peach', 'physical', 'inspectors', 'experienced', 'structure', 'blag', 'there', 'problem', 'rugby', 'pantry', 'identity', 'lies', 'rewards', 'community', 'find', 'inadequate', 'joint', 'scarper', 'color', 'mondays', 'scotland', 'alliance', 'from', 'iced', 'nothingness', 'it', 'sent', 'fit', 'bit', 'newly', 'hard-earned', 'subject', 'death', 'weather', 'save', 'says', 'talk', 'normally', 'addicted', 'dance', 'lithium', 'am', 'spanish-language', 'weird', 'loans', 'baby', 'test', 'well', 'housemates', 'spoken', 'sack', 'these', 'fulfilment', 'optimistic', 'partly', 'drivers', 'love', 'seven', 'salted', 'supervision', 'tablet', 'rent', 'common', 'weight', 'some', 'services', 'admitted', 'furiously', 'a', 'who', 'honours', 'email', 'fits', 'are', 'anti-aging', 'win', 'talking', 'an', 'jean', 'universities', 'crying', 'mum', 'pay', 'starting', 'bedroom', 'weekend', 'matter', 'lovely', 'meant', 'intelligent', 'only', 'online', 'fridge', 'woke', 'latched', 'cpn', 'ailments', 'purged', 'dictation', 'room', 'bloody', 'advertised', 'bulimia', 'self-harming', 'team', 'haven', 'cried', 'has', 'accompanied', 'felt', 'wednesday', 'bosses', 'fan', 'stab', 'surface', 'sit', 'return', 'rest', 'locks', 'referral', 'translated', 'someone', 'northern', 'definitely', 'samaritans', 'kinda', 'terrible', 'hear', 'attacks', 'package', 'disorder', 'fall', 'want', 'ourselves', 'alarm', 'front', 'grumpy', 'freaking', 'defender', 'determined', 'money', 'ill', 'almost', 'city', 'eyeliner', 'sofa', 'blah', 'suffers', 'getting', 'said', 'stomach', 'during', 'strong', 'hand', 'formal', 'mortgage', 'tea', 'tries', 'fake', 'remember', 'duty', 'people', 'drop', 'matters', 'friend', 'urges', 'circumstances', 'career', 'mental', 'onto', 'moral', 'head', 'finally', 'pretty', 'rolling', 'athletic', 'experience', 'suicidal', 'paddling', 'issue', 'saying', 'place', 'close', 'i', 'worst', 'toilet', 'rational', 'work', 'loves', 'medical', 'changed', 'thing', 'bills', 'past', 'doing', 'along', 'cases', 'tired', 'face', 'burden', 'australia', 'drag', 'insurance', 'swollen', 'obamacare'