A Semiotic Experiment

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ABSTRACT
Words and language are products of societal necessity. Without structured communication devices, we would have misunderstanding and chaos. "Dictionary: A Semiotic Experiment" is an interactive multimedia piece that explores the structure and manufacture of language and the ability of language to portray concepts, thoughts and ideas.

Keywords
Semiotics, Interactive Art, Multimedia, Computer Art, Web Art

Splash Page, *Dictionary: A Semiotic Experiment*

1. INTRODUCTION
Words are essential, yet, arbitrary. We require language to communicate ideas, however the multitudes of languages that exist limit the free-flow of information exchange between all persons of all cultures. Most societies/cultures have their own beliefs and stories that explain this discontinuity of language and very existence of words.

Christians believe that, according to Genesis 2:18-23, God gave Adam domination over the animals and on the sixth day of creation brought each animal before Adam for him to name (all before Eve was ever created). This account is the first in the Bible tackling the creation of words and demonstrates a patriarchal approach to the development of language. Genesis 11:1-9 also explains the transformation from this single language of Adam to many in the story of Babel. The inhabitants of Babylon attempted to build a tower to heaven, so that man would become equal to God. Man's greed of power led to his downfall, once again, and his ability to understand (one language) was revoked. Many religions and cultures have

their own histories that explain or suggest how language came to be.

Whether or not one believes in a creation story is irrelevant, what is important is to understand the arbitrary nature of language parables/myths attempt to explain in the first place. According to Genesis, Adam had free reign to name the animals. Is there any reason why the word bird signifies an animal with wings? A bird could have easily been named "tree," "rain," "igloo," or "lamp." Our systems of language/communication are sets of signs, symbols and rules collectively accepted and utilized.

2. CREATION
Who creates alphabets, words and grammar? If language is a collective agreement and collectively used, shouldn't the creation of language also be a collective activity?

If we look at computer languages like JAVA, C, C++, etc. authors can develop extensions to a pre-existing skeleton of terms, commands and rules. There is a mutual understanding of a grammar/ordering of commands that allows the computer or other programmers to understand. Likewise, in English, there is a predetermined alphabet, predetermined words and a predetermined grammar, however the letters and words can be strung together in infinite combinations and compositions. New words are added to the dictionary over time as words infiltrate mainstream culture.

D:ASE [1] utilizes components from both spoken languages and written/computational languages to create a unique procedural language.

2.1 Birth: First Sounds
Alphabets can be made up of letters, or images that signify a specific sound. D:ASE explores the concept of "alphabet" as a pronunciation guide (see **Figure 1**). Each character is a phoneme, a signifier of a specific sound. Like Hieroglyphics the phonemes are images. Each image is a map of pronunciation representing the labial, dental and velar points of articulation used to create a specific sound. For example an English sounding long "o" is represented in **Figure 2** below. The top third represents the open circular shape of lips, the bottom two thirds demonstrate an open airway, where the tongue and palate do not touch.

Figure 1. D:ASE Phonemes/Alphabet

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[1] *Dictionary: A Semiotic Experiment*

Sounds/phonemes are procedurally strung together to form words. Sounds are pre-recorded and pronounced in the feminine voice by the computer. The voice is human, yet, systematically pronounced in a robotic, crisp, explicit and articulate manner to avoid the morphology or simplification a human language would develop over time. D:ASE is not vocalized in the masculine, or technically, the human. The denial of the human/masculine is a rejection of traditional ways, masculine creator and originator that the Judeo-Christian tradition preaches. The feminine and computational voice signifies an "other," a language that is not spoken, yet is heard and visualized.

Figure 2. D:ASE Phonemes

2.2 Growth: Forming a Vocabulary

A vocabulary, or a repertoire of words is not formed overnight. A word is essentially a sign the collective agrees upon to signify a particular thought, idea, object or concept. D:ASE is a database of equality and encourages everyone of every background to create words and include them in the lexicon. Anyone who visits and interacts with D:ASE is entitled to, and has the opportunity to, append the dictionary database (**Figure 3**).
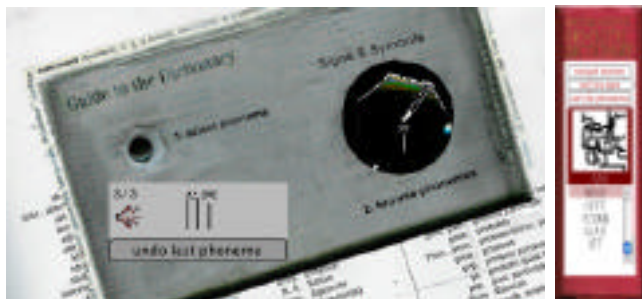

**Figure 3. Left: Interface to create words.
Right: Dictionary Database Interface
with Image Definitions**

An individual, however, cannot simply submit a combination of any symbols and call it a word. There are rules, a structure, and a particular alphabet that need to be abided by.

Words are meaningless without definitions. In Western cultures words are defined by other words, which are defined by more words. In many cases words can signify a variety of things; for example, the English word "boat" can signify a gravy boat, a banana boat, a sailboat, a canoe, a kayak, a motorboat, a yacht, or a cruise liner. The clarity of definition, or signified, therefore, is often vague. D:ASE recognizes, reveals and exploits this ambiguity. A user created, black and white pixel image, defines each word. In essence, the word and the definition become a pair of signifiers of a real event, activity or object.

Images help the individual to think beyond the limitations of words. The purpose is to exercise the subconscious visualization of meanings and concepts. It forces the individual to recognize how s/he thinks and conceptualizes ideas and demonstrates that each individual does not envision the same word the same way. The pixel-by-pixel drawing acts as a filter to mediate language. It forces a level of simplicity into each image/definition to maintain a similar level of readability/usability between all definitions that the specificity of a photograph would not permit. Image as definition restricts the easy translation of one language into another. For example, each individual does not visualize an emotion in the same way. Often emotions are understood based on an individual's own life experiences and of those around them. My understanding of grief, for example, may be much more shallow than that of someone who has lost a parent or a child.

A quick and easy experiment to demonstrate how often language is misunderstood or interpreted can be performed by simply asking the next ten people you come in contact with to draw a picture of a shoe. Each of those people have an immediate preconception of what a shoe is, however, among people that conception can greatly vary. A shoe is a general term that is often used to signify something particular. For example, "Go put on a pair of shoes" could mean any number of things: put on pumps, tie-up shoes, sneakers, boots, high-heels, slip-ons, sandals, flip-flops, shoes with buckles, shoes that Velcro, clogs, masculine shoes or feminine ones. Although this is a fairly harmless and obvious example, miscommunication due to the limitations of language happen all the time, and often with negative results. D:ASE highlights this characteristic of language by obliging users to interact with a language s/he is not familiar with and offers no explanation or translation of a word into another language. Users are left to interpret image definitions blindly and creatively, exemplifying the idiosyncratic nature of language, despite cultural attempts to unify, simplify and clarify communication systems.

2.3 Parenthood: Procedural Communication

Computational languages are the best representations of very regular and specific grammars. Rules are integral to the ability of a programmer to write a program that can be read by the computer. If the sequencing is not correct, then the program will fail. Computers analyze systematically and will malfunction when an error has occurred. The computer does not attempt to guess or interpret anything that does not follow procedure. Irregularities and slang make it especially difficult for newbies to understand and utilize language.

Rules and procedure are integral to the clarity of D:ASE. Words are constructed out of three, four or five letters, depending on its type: action, subject, or descriptor.

> *Action: 3 Letters*
> *Subject: 4 Letters*
> *Descriptor: 5 Letters*

Actions are analogous to the English language's verbs, the subject comparable to a noun, and descriptors parallel to an adjective or an adverb. The ordering of words to form sentences is also regular; irregularities would result in further ambiguity and miscommunication. Sentences are given a tense as a whole, rather than specifying the tense of verbs in agreement with nouns. A sentence is indicated as present tense by writing an arrow pointing down. A sentence is placed in the

future with an arrow pointing to the right; an arrow pointing left indicates past tense. No arrow defaults as present tense. Descriptor words applying to the subject are placed after the tense indicator and before the subject. The subject is followed by descriptors applicable to the action. The action is always the last word at the end of a sentence (see **Figure 4**).

Figure 4. Procedural Grammar Diagram

A systematic ordering should restrict the confusion complex compositions nurture. Precision is obtained by a standard structural convention. Although the individual defines words in D:ASE, the collective must agree upon and utilize rules of construction to ensure accessibility to the entire population of users.

3. Life and Living

In many ways the concept of language is a belief system like a set of laws or a religion. The growth and existence of words and language is a direct result of its practice and use. Many languages die and have revivals; many words fade into oblivion and several new ones develop. D:ASE is not an exception to this pattern. After the concept of a communication device is created it is dependent upon the society, or the set of users, to cultivate and energize it.

Although D:ASE is the offspring of a woman, that woman no longer has creative control. As the creator she determined rules of government and structural guidelines, however, the innards and the spirit are out of her hands and into the hands of users of all cultures, all backgrounds, and all sexes. The only guaranteed characteristic each user has in common is that s/he has access to the World Wide Web. Once a belief system becomes accessible to a population it can grow, segregate, mutate, or be forgotten, but the creator no longer has an off switch to completely destroy it.

D:ASE is a database, a feminine voice, an experimental language, an alphabet, a systems of signs, an interactive multimedia website, a procedural grammar, an exchange of viewpoints, and a living system.

4. ACKNOWLEDGMENTS