The consequences of symbolic interaction
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This essay addresses the various ways of how language can influence behavior that have been suggested in the literature on language and on culture. Some of these influences can be attributed by the presence of language structure, while others reflect the consequences of language use. These various influences are summarized in the conclusion.

Structure and Use

The distinction between structure and use was introduced by Saussure (1931) as one between langue and parole. Paul Ricoeur (1978) presented a similar distinction between structure and event. In both cases, these two components stand in a complementary and dialectical relationship with each other.

Structure, also called grammar, allows the construction of messages which in turn can be used to interact with others. In addition to its communicative function, the use of language is where innovation and change begin. Users can change language structure simply by adding new words. They can also change language structure by modifying the grammar. Take for example, the contraction of the negative from not to n't. Users can also change structure by not using a word or grammatical structure.

Thus, language use, as Ricoeur's essay, entitled "Structure, word, event," points out an approach which focuses on a purely structural approach to language, as modern structural linguistics since Saussure does, is oblivious to the importance of the communicative event, so central to human life and is at a loss to explain how and why language changes.

Ricoeur also pointed out that the word is a mediator between the structure/use dialectic. Rather than word, I prefer to consider the sentence as the mediator. When we look at a sentence from the structural component, we see a string of one or more words, organized according to a given set of principles called a grammar and bearing a meaning and as such it is a potential message.

When a sentence is used as an event, we see a message being sent to someone for a reason. G.H. Mead (1934) introduced the concept of symbolic interaction as the process of actualizing the potential of sentences and with it he pointed out ways in which this process can affect our behavior. Symbolic interaction enables an individual (known as the subject) to export one's subjective thoughts and intentions into the public domain for others to apprehend. Berger and Luckmann (1967) termed this process objectivation, because it involves the production of objects, which are in this case sentences.

Symbols and interaction

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1 At the time of writing, the modern understanding of syntax (Chomsky 1965) was just beginning to reach disciplines outside of linguistics and this is why Ricoeur used the word, instead of the sentence, as mediator.
Sentences consist of words organized by a set of rules called a grammar. Although the orthodox view among linguists holds that a grammar is synonymous with syntax, Dwyer (1986) who after comparing the two-word sentences of apes and young humans, concluded that in hominids there are actually three types of grammar used in the hominid world: atax (words), paratax (the two-word sentences of) and syntax. Thus a single word or a string of words will be conveyed to others as a sentence. Appendix A summarizes the distinctions between these types of sentences.

**Referential words**

Following Keita (1997) Dwyer and Moshi (2002) drew a distinction between two types of words, expressive and referential. In humans, expressive signs are termed “ideophones” and are used to convey impressions about an event. For example, in the sentence (1) splat is an expressive.

(1) The paint fell on the floor; splat.

Vervet monkeys (Cheney and Seyfarth 1990) have expressive danger signs for leopard, snake, and raptor. I consider them to be expressive because they have an instinctive base, even though they also have a learning component. Young vervets, for example learn to narrow down their eagle call from any large bird to just dangerous raptors.

While expressive signs can be controlled, they do have limitations as Burling (1993) points out. He further concludes that analytic symbols could not have evolved from the control of expressive signals because expressive signs have an instinctive base are limited in the range of meanings they can represent.

In contrast referential words characterize aspects of an event being described. For example, the rest of the words in (1) describe properties of the event: the thing involved (paint); the action (fell); and the location of the action (on the floor). Saussure (1931< 1916) points out that analytic words do not refer to a specific thing, but rather the concept of a thing. Thus the paint is not a specific instance of paint, but the concept of what paint is. When used in a sentence, it is up to the users to determine which specific instance of paint to which the concept refers.

**What can symbols (referential signs) do?**

**Naming**

All apes have expressive words, but not all apes have analytic words. However they can learn them. From this, we can presume that expressive words are older and that somewhere along the line, humans developed and began to use analytic words. An important task for the understanding of the evolution of language is to try to explain how expressive signs originated and the way in which vocabulary expanded. It is likely that the first analytic words were names for things and actions that could be observed in the natural world. Some of these natural objects seem straight forward such as the grouping all dogs into one category. But others are not so straight forward. Do we group rivers, streams, brooks, creeks and rills into a general category or give them separate names? Where do we draw the line between a river and a creek? Thus for many of the natural objects we name, our decision on how to categorize them is to some extent arbitrary.
This arbitrariness becomes even more apparent when we move away from the naming of objects in the natural world. Modern human language now has a rich array of such words that we can classify as follows: naming empirical objects and actions, generic categories, roles, abstract, abstracted qualities, time and space, imaginary concepts and emotions.

**Generic categories**

In a sense, any word is a generic category, for a name like dog or run is not the name of a specific dog or run is not the name of a specific dog, but a category to which all dogs belong and to which no cats belong. Likewise the word run represents a category of actions to be distinguished from walking and swimming. A generic category, however, is the name of a concept to which other words belong. Thus dogs and cats belong to the generic category of animal and run, walk and swim belong to a general category of locomotion. As in the case of naming, the categories are not absolute. In Cameroonian Pidgin English, mushrooms belong to the general category of meat. In English, bratwurst and Vienna sausage are types of sausage, while a hot dog is not. Just as not all things are named, not all names are classified. Although we probably know what a lichen or a mushroom is, we may be hard pressed to find a generic category for either.

Generic categories allow us to classify our observations and to manipulate larger collections of phenomena and allow us to say, for example, “eat your vegetables,” without having to say “eat your carrots, or peas, or beans, or ....”

**Roles**

The words for social roles deserve special attention for several reasons. First of all, a category like mother or child appears to be a natural category because we see mothers of most vertebrate species tending to their infants. But the capacity to mother is different from the word mother which marks a role. At the heart of the word mother is the concept of motherhood. With this concept one can say, for example: (1) this is what I do as a mother; (2) Sheila is the mother of Harry and Nancy is the mother of Fifi; and (3) Tanya is not a very good mother. Without the concept of motherhood, none of these statements is possible.

Second, once we adopt roles like father, mother and child, or teacher and student, we see the world indirectly through the perspective of these roles. Rather than ask, what does this mean? We ask, what does this mean to me as a teacher?

**Abstract concepts**

Cassirer (1944:38), reasons that symbolic thought “makes it possible for an organism to isolate relationships abstractly and to "hold on to them mentally." Although we refer to

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2 This list needs to be expanded based on the categories of words found in the vocabularies of signing apes and young humans.
3 And finally in syntax, words are classified into abstract grammatical categories such as noun, verb and noun phrase.
4 The mere awareness of the relations cannot, therefore, be regarded as a specific feature of human consciousness. We do find, however, in man a special type of relational thought which has no parallel in the animal world. In man an ability to isolate relations – to consider them in their abstract meaning – has developed. In order to grasp this meaning man is no longer dependent on concrete sense data, upon visual, auditory, tactile, kinesthetic data. He considers relations “in themselves” - ... - as Plato said. Geometry is the classic example of this turning point
this ability as abstract thought, the power of symbols allows us to label abstract concepts, and thus make them concrete. Once an abstract concept is labeled with a word, it can now be manipulated like any other word. Thus, each of the types of words listed above enables us to think more abstractly.\textsuperscript{5}

\textit{Qualities}
Abstract concepts also include an array of words that represent qualities that have been abstracted from referential words. This enables us to be more specific about our referent: a red hat, a good dog, and sweet morsel.

\textit{Time and space}
With the names of places we can link our present location with others that we know. Thus words permit the temporal and special expansion of our intersubjective world. With words like \textit{yesterday} and \textit{today}, we can link the present with the past and with words like tomorrow, we can link the present with events that have yet to happen. Cassirer (944:53) accords the future a special status.\textsuperscript{6} “In our consciousness of time, the future is an indispensable element. Even in the earliest stages of life this element begins to play a dominant role.”

One of the most important, and frightening events of the future is the awareness of our own demise and this awareness transforms the way I look at time.

“The knowledge of my inevitable death makes this time finite for me. I have only a certain amount of time available for the realization of my projects, and the knowledge of this affects my attitude to these projects” (Berger and Luckmann 1967:27).

Thus, through words our immediate world of the here and now is expanded in time and in space and enables us to view time as a finite quantity.

\textit{Imaginary concepts}
In fact, we can give names to nonexistent places like heaven and hell and further link our experienced worlds with those of our imagination.

\textit{Emotions}
- words that describe how we feel: happy, angry, tired, sore, hungry.
Structural determinism

In a series of essays, Whorf (1956) proposed that the structure of a language can influence the way one thinks. Despite many serious attempts to find empirical support for this hypothesis, we have only been able to find only modest support for this hypothesis. For example, we find it more difficult to distinguish between two related, but different, concepts if they are represented by the same word and that if we have a name for a concept we are more likely to use it.

What do utterances do?

While the ability of words to improve our cognitive abilities is substantial, this ability is by no means the most important. At this point we turn to the consequences of symbolic interaction, the capacity to objectivate our subjectivity.

Objectivation

Berger and Luckmann (1967) describe objectivation as the process of making objects. Since the linguistic sign is an object, the act of using signs is an act of objectivation. Objectivation allows an individual to express one's feelings and understandings, that is one's subjectivity.

The use of expressive signs, a capacity widely distributed in the animal kingdom, is especially effective in clarifying for others one's feelings and intentions: threats; requests; submission; and pleasure. Although G.H. Mead (1934) draws a sharp line between analytic words and instinctive gestures [expressive words], I am not convinced that this distinction is as clear-cut as Mead suggests. However, the potential for increasing this intersubjectivity is vastly increased by the use of analytic signs because they provide a the potential for an infinite variety of meanings.

The consequences of objectivation include: (1) enabling intersubjectivity; (2) directing the attention of others including space and time travel; (3) developing an interest in others; and (4) developing a self awareness, all of which are possible at the atactic and paratactic levels. In addition, at the syntactic level objectivation leads to (5) the process of negotiating agreements which in turn leads to the establishment of cultural institutions.

Intersubjectivity

Objectivation allows us to express our subjectivity and to develop our intersubjectivity. Generally speaking, intersubjectivity has to do with shared understandings between two individuals, i.e., between two subjectivities. Such knowledge includes not only facts, but theories about how the world is and the subjective feelings of others. While intersubjective knowledge can develop through observing the behavior of others, it is vastly facilitated by symbolic interaction.

Directing of attention

By issuing a sign, we can direct others attention to the same item. This gives some control over the thoughts of others. For example, suppose I say, “Look at that dog.” It is likely that those listening will focus their attention on the dog and perhaps wonder why I called their
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attention to it. Nevertheless, we find that this act has drawn several different individuals to focus on the same thing. This marks an important first step in the development of intersubjectivity, the sharing of common understandings. Having noted that vervets have the ability to issue danger calls, we must recognize that these beings have also embarked on this first stage of intersubjectivity. Also, with the addition to the vocabulary of words for time and space we can direct the attention of others to distant times and places.

Developing an interest in the other

Intersubjective knowledge, however, is not just shared knowledge, for it includes the knowledge that we share (or don’t share) this knowledge including whether we agree we agree (or don’t agree) to do something. The discovery the other may not share the same knowledge, leads to another important discovery that the reason that the other is acting in a certain way is because different knowledge is involved.

Dennett (1987) describes several progressive stages in the development of the mind. For the purposes of this discussion, I take the mind to consist of knowledge, feelings and an ability to act on the basis of those feelings. I interpret Dennett’s stages:

(0) The mindless self in which the self has no mind;
(1) The mindful self in which the self has a mind;
(2) The mindful other in which the self is aware that the other has a mind;
(3) The self-conscious self in which the self is aware that the other is aware that the self has a mind.

At the beginning of stage (2), the mindful other, the self presumes that the other possesses the same range of knowledge. The discovery that the other may not have the same knowledge, be it more or less, leads the self to postulate that the other’s behavior is dependent on the other’s knowledge and if the other did, or did not know something, it would act differently.

This awareness in turn leads me to increase my interest in what you know. I may observe your behavior for hints of what you know that will be helpful to me. I also will begin to realize that I can influence your actions by choosing to inform you or not inform you about something or even misinform you.7

Assessing intentions

Furthermore, when we receive a symbolic message sent from someone else, we generally do not react to it automatically, but examine it for its content (what the message means). Why did the sender send the message? This process also increases our interest in the other which has already been promoted by our awareness of our intersubjectivity. Our interest expands beyond the knowledge we share (intersubjectivity) to what knowledge we don’t share.

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7 The ability to influence the other is possible at stage (1). For example, Cheney and Seyfarth (1990) report that some vervets have been observed to give the eagle call which causes other vervets to run into the trees and thus ending a fight they were loosing. Cheney and Seyfarth consider this use of signs instrumental as opposed to symbolic interaction because there is no evidence that these vervets are aware that the other vervets have a mind. They simply know that this act will have this effect, much like throwing a stone in the water will cause a splash.
Developing self consciousness

With the awareness that I am watching your behavior for indications of what you know, will come the awareness (stage 3) that you may be watching me in the same way. This means that I begin to become conscious of my own activity, and that I may attempt to conceal some of my behavior from you. At this point I become conscious of how I appear to you and may endeavor to enhance my appearance both physically and behaviorally.  

I may not, for example want you know where a new stash of bananas is located. This marks the beginning of the compartment of my self into a private self, which I do not want to objectivate and a public self which I am willing to share with others.

The other as equal

In addition, when I realize that you are observing me in the same way I am observing you, along with our developing intersubjectivity, we discover that we are more similar than other beings we encounter and as humans, we are unique and that you and I are equal in a way that others (species) cannot be. An important consequence of this intersubjectivity is that it leads to an even greater interest in the other, both what the other knows and in thinking.

Agreements

This awareness opens the door to the possibility of cooperative action. Using utterances we can begin to develop cooperative schemes like group hunting and alliances that benefit each of far more than non participation.

Agreements begin with the establishment of two (or more parties) and the mutual understanding (intersubjective) of the specifications of the responsibilities and benefits of each party. In an agreement, each party expects to benefit more from participating than from not participating, and each party expects that the benefits for each party are pretty much proportional to the effort the responsibilities assigned to each party.

Symbolic interaction is important to agreements because it allows (1) an open discussion of the intersubjective understanding of the agreement, (2) the ability to negotiate the agreement if it is considered unequal by one or more of the parties and (3) the justification of the fairness of a particular agreement.

A cooperative agreement generally involves the parties undertaking different duties and often receiving different benefits. This complicates the evaluation of fairness by each party. If one party perceives the distribution of benefits to be unfair, then the distribution of

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8 Meddin points out that "specifically, for Mead, the reflective self is essentially a cognitive structure (1934:173) ... [and] it is a structure contingent on the ability of the organism to assume the perspective of others towards itself (1934:194). (104-5). Central to this development is the concept of role playing.

9 When it comes to the reflexive self, the literature shows little evidence of primates other than humans and cross-fostered, signing chimpanzees having any abilities in this area. As mentioned earlier, with the exception of Meddin (1979) there has been virtually no follow up on Mead's symbolic interactionism and the development of the self. This section largely summarizes Meddin's insights.
benefits is open to renegotiation until all parties deem then fair and equitable. If this does not happen, one or more parties may refuse to participate.

In addition, each party will keep tabs on the other to make sure that he is living up to his responsibilities and if not, the agreement may fail. In addition, each party will keep tabs on the others reliability in agreements and if the other is judged unreliable, the first party will be unwilling to participate in future agreements.

The development of cooperative agreements marks a new level of interaction with the other. While other species have developed cooperative arrangements, they have had to do so without the negotiation made possible by symbolic interaction. This explains why cooperative activities in humans are so massive, when compared to those of other beings. Cooperative agreements also offer a nonviolent alternative to interactions that are rely on threats of intimidation.

**Syntax and the development of institutional culture**

Although atactic and even paratactic sentences can lead to agreements, they are far less effective than syntactic sentences because sentences can be much more explicit which is so important for the negotiation process. One can define the responsibilities of each party, the benefits each party will receive and most importantly why the agreement is fair.

Agreements are formally very similar to social institutions. They represent cooperative agreements, have cooperative roles with assigned responsibility, and are justified by legitimations of fairness. But whereas agreements are between specific individuals, social institutions involve generic roles. It is my contention that institutions evolve from agreements through the standardization of roles.

The transition from an agreement could be a simple matter of adopting a best practices model. Suppose two (or more) people agree to go hunting and the first party agrees to chase the prey toward the second party who agrees to kill the prey and share it with the first party. Given that some arrangements will work out better than others, participants will most likely favor the best practice so that the hunting model becomes standardized. As this happens, individuals who agree to participate in a hunting party will need only decide which role to take. As this happens, participants will begin to think in terms of the generic roles of chaser and catcher, and when this happens, an institution is created.

Presently, as humans, nearly all of our interactions with others are carried out through these institutions and our life becomes cultural rather than individual.

**Sharing**

One of the key components of an agreement is the fair distribution of the benefits of that agreement, in other words, sharing. It is also my contention that cooperative agreements lead to sharing. Thus learning to share is a key component in the process of becoming human.

**Speech acts – Austin**

Austin (1962) and Searle (1969) developed the concept of speech acts, in which what was said wasn’t an informative message, but an act which accomplished something. In fact, the speech act is many ways the only way to accomplish certain things as when the jury
pronounces the accused “guilty,” or when the minister pronounces the couple “bride and groom,” or when legislation is signed by the president. But speech acts just don’t happen, there are conditions that have to be met. It takes an authorized jury to declare the accused innocent or guilty, etc. Bourdieu (1982) pointed out that such authorizations are institutionally based, e.g., a court of law, a religious order, or a government. The upshot of all this is that speech acts cannot take place until cultural institutions have evolved.

Conclusion
This essay has presented the many ways in which language, both structure and use, can influence behavior. Given that all of these ways are part of our human existence, there can be no doubt that language has played an important part of our becoming human.

References
Appendix: Atax, paratax and syntax.

1. Atax, paratax and syntax.

As humans acquire grammar, they go through three distinct stages, the one-word, the two-word, and syntax. The first two stages, which I call atax and paratax, are seen by some as incipient forms of syntax and described accordingly Braine (1963) and Bickerton (1990). Despite having common properties, like using referential signs and case roles, each stage has distinct formal properties. The table to the right contrasts these three tactic types using six defining properties which are explained below.

1.1 Sentence Structure and length. The sentence begins with an intention on the part of the speaker “to say something about something to someone” Ricoeur (1978). However, the speaker has to convey this message using one or more sentences. These sentences will vary in complexity, depending on the grammar. The task of the grammatical analysis is to describe the internal organization of these sentences and show the formal properties of the grammar that produced them. Briefly, an atactic sentence consists of a single word. A paratactic sentence has two words. And in a syntax sentence, the number of words is potentially infinite. The phrase structure rule for atax is $S \rightarrow W$ (each sentence has only one word). The phrase structure rule for paratax is $S \rightarrow W:W$ (each sentence consists of only two words). Syntax, of course, has a number of phrase structure rules including: $S \rightarrow NP + VP; VP \rightarrow V + (NP);$ and $NP \rightarrow Det + N.$

1.2 Word order. Word order is only significant in syntax where the position of the syntactic sign is crucial to determining the meaning of the sentence. This is not the case in paratax, where word order cannot influence meaning. This is why the concatenation for paratax is marked with a colon (:) instead of a plus (+).

1.3 Parts of speech. Part of the reason that word order is not significant in parataxis is because parataxis has no parts of speech, as I show below, following Bowerman (1973).

1.4 Case roles. Fillmore (1968) introduced the term case to help to explain how syntax assigns meaning. He said that the constituents of a syntactic construction have a specific case role in the sentence. Because a common list of these case roles has yet to emerge, let me suggest at least the following roles: agent, action, object, recipient, modifier and head. While others use the terms semantic relationship (Brown 1973) and functional notion (Chomsky 1965), I prefer Fillmore’s term, case, because it carries a purely grammatical sense, in contrast to an analogous terms like cognitive role or semantic relationship. A major conclusion of this paper is that these case roles are not only found in syntax, but are
part of the paratactic grammars of chimpanzees, bonobos\textsuperscript{ii} and young humans. Importantly, this means that while case roles are universal, they are not unique to human language, and thus not a (human) linguistic universal.

In syntax, unlike paratax, a specific case role is assigned to each syntactic structure. This means that in syntax the case role is clear, even in two word sentences like those shown in the sidebar.

\textsuperscript{i} Phrase structure is discussed in greater depth in the section on syntax.

\textsuperscript{ii} Bonobos (\textit{pan paniscus}), were once considered a subspecies of chimpanzee (\textit{pan troglodytes}).