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Narratives by Six Year Old and Nine Year Old Boys: Brute: Institutional, and Non-Institutional Mental Facts

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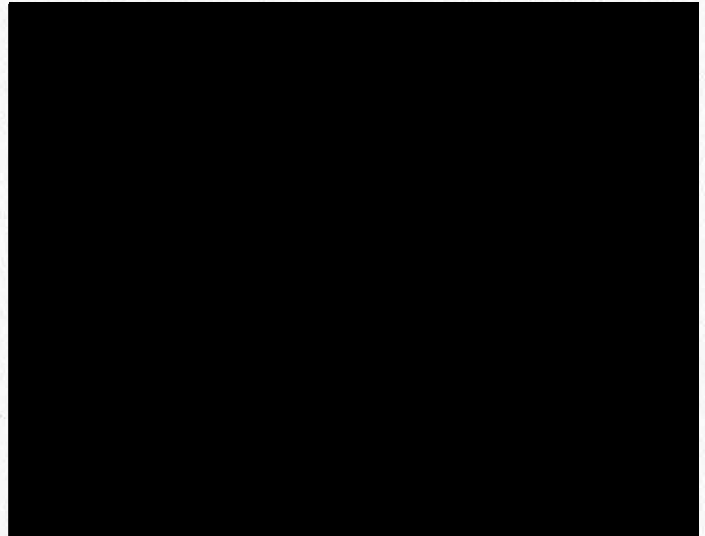
NARRATIVES BY SIX YEAR OLD AND NINE YEAR OLD BOYS:
BRUTE, INSTITUTIONAL, AND NON-INSTITUTIONAL MENTAL FACTS

by

Adam Craig Whipple

A Thesis
Submitted to the Graduate School
of The University of Southern Mississippi
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ABSTRACT

NARRATIVES BY 6-YEAR-OLD AND 9-YEAR-OLD BOYS: BRUTE, INSTITUTIONAL, AND NON-INSTITUTIONAL MENTAL FACTS

by Adam Craig Whipple

December 2013

Brute facts, institutional facts, and non-institutional mental facts were studied. The philosophy of constructionism and the theory of intent provided a framework for this research. Intentionality provided the basis for social facts. Brute, institutional, and non-institutional mental facts were operationally defined. This study analyzed the use of these facts in the narratives of 6-year-old boys and 9-year-old boys. There were a total of 19 participants in this research.

This research established brute, institutional, and non-institutional mental facts as appropriate operational categories for studying children's narratives. The 6-year-old boys produced more brute facts than the 9-year-old boys. The 9-year-old boys produced significantly more institutional facts in spontaneous narratives than the 6-year-old boys. The production of non-institutional mental facts was not significantly different between the two groups.

The discussion pertained to the ramifications of these results as related to spontaneous language samples, appropriate language sampling size, and the syntagmatic-paradigmatic shift.

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CHAPTER I

INTRODUCTION

Problem Statement

Several scholars have discussed institutional facts and the distinction between brute and institutional facts (Anscombe, 1958; Lakoff, 1987; Searle, 2011). Searle (2011) stated, “We live in a sea of human institutional facts” (p. 90). Hund (1982) stated, “Most philosophers have been perfectly ready to accept the notion of ‘brute’ facts, but they have preferred to ignore the notion of ‘social,’ ‘societal,’ or ‘institutional’ facts” (p. 271). Searle (1997) stated that “...since institutional reality is in some sense our creation we ought to be able to state precisely the mechanisms of that creation and the ontology of the resulting structure” (p. 458). Insofar as our society is impacted by institutional facts, their existence and their use in social commerce warrant research.

Searle (1969) stated that the traditional models of language are “incapable of dealing with institutional facts” (p. 184). Perhaps what Searle suggested is that the traditional models do not consider consciousness and intent. Inasmuch as consciousness and intent are significant features of brute and institutional facts, it is understandable why Searle made this comment.

Lakoff (1987) stated, “...unresolved is the question of whether a clear division exists between brute facts and institutional facts” (p. 170). While scholars have discussed brute and institutional facts and have provided preliminary definitions, no previous operational definitions have been outlined. Likewise, no previous research has been carried out to determine the difference in the use of brute and institutional facts in actual social commerce. An analysis of the use of brute and institutional facts in spontaneous

language samples has yet to be carried out. Such research could contribute to an understanding of language abilities.

Significance of the Study

The authors of this study operationally defined brute facts and institutional facts for the first time, thus providing a framework for working definitions for this and future studies. This study investigated the existence of non-institutional mental facts and likewise operationally defined them. This study compared the difference in the use of brute facts, institutional facts, and non-institutional mental facts in the narratives of 6-year-old boys and 9-year-old boys.

A spontaneous language sample often leads to a useful grammatical analysis of a child's repertoire. This study considered the use of brute, institutional, and non-institutional mental facts in children's narratives as a possible companion to grammatical assessment. Presumably, this study will lead to further research concerning these facts and their use in spontaneous narratives of children.

CHAPTER II

REVIEW OF THE LITERATURE

Constructionism

Constructionism is a philosophical view of language. Bruner (1986) stated that constructionism recognizes the “mind as an instrument of construction” (p. 97). The basic tenant of constructionism is that a child is an active processor of the world in which he lives. Berger and Luckmann (1989) stated, “...reality is socially constructed” (p. 1). Berger and Luckmann (1989) further stated, “Everyday life presents itself as a reality interpreted by men and subjectively meaningful to them as a coherent world” (p. 19). Searle (1995) stated, “...we do not experience things as material objects, much less as collections of molecules. Rather, we experience a world of chairs and tables, houses and cars, lecture halls, pictures, streets, gardens, houses, and so forth” (p. 14).

To use one of Searle’s examples, a car is actually a collection of metal, rubber, and other materials. When one views an attractive new car, it is unlikely that he would say to himself the following: *I want to own that collection of metal and rubber*. Rather, he would more likely say to himself the following: *I want to own that car*. At some point, probably early in childhood, that individual would have learned to experience that collection of metal and rubber as a car. This is possible as an individual constructs mental representations of his environment.

Bruner (1986) stated that a child actively constructs possible worlds through the “transformation of worlds and world versions already made” (p. 97). Sperber and Wilson (1986) stated, “An individual’s total cognitive environment...consists of not only all the facts that he is aware of, but also all the facts that he is capable of becoming aware of...”

(p. 39). Bruner (1986) stated, “We do not begin with something absolute or prior to all reasoning, but...begin instead with the kinds of construction that lead to the creation of worlds” (p. 97). Sperber and Wilson (1986) stated, “We are all engaged in a lifetime’s enterprise of deriving information from this common environment and constructing the best possible mental representation of it” (p. 38). In this way we move “from electrons to elections and from protons to presidents” (Searle, 2011, p. 1).

To use the latter of Searle’s examples, it is unlikely that a child would view President Obama as only a collection of protons and other molecules. Rather, a young child may likely view President Obama first only as a man, just as any other man. Later, as a child begins to construct mental representations of countries and governments, he may then understand that President Obama is indeed the President and leader of a nation.

Some philosophies of the mind and language indicate an opposition between mental states and physical reality, between culture and biology. However, Searle (1992) stated, “Mental phenomena are caused by neurophysiological processes in the brain and are themselves features of the brain” (p. 1). Additionally, Searle (1995) stated, “...mental states are higher-level features of our nervous system...” and, “...there is no opposition between culture and biology; culture is the form that biology takes” (p. 227). Searle (2011) stated, “Consciousness and intentionality are caused by and realized in neurobiology” (p. 25). Rather than being isolated entities, the mind, culture, and mental states are inseparably connected to biology, physical reality, and the brain. Furthermore, Searle (1995) stated that “the connecting terms between biology and culture are...consciousness and intentionality” (p. 228). Therefore, consciousness in general, and intent in particular, are irreducible issues of language.

Intent

Humans deal with intentionality, and Searle (1995) defined intentionality as “the capacity of an organism to represent objects and states of affairs in the world to itself” (p. 7). Searle (2011) subsequently defined intentionality as “...that capacity of the mind by which it is directed at, or about, objects and states of affairs in the world” (p. 25). Sperber and Wilson (1986) stated, “Intentions are mental representations capable of being realised in the form of actions” (p. 31). Nelson (1996) defined intentionality as “a person’s intention to carry out an action” (p. 293). Whenever an individual deals with belief, desire, want, need, etc., that individual deals with intentionality.

Intent is the driving force of language. According to Bruner (1986), intent is the “what for” of language (p. 157). Intent gives purpose to phonemes, meaning to morphemes, and significance to syntax. Nelson (1996) stated, “It is the intentionality of the actors that provides the consciousness, and ultimately the meaning, to the story” (p. 188). Searle (1992) stated, “Consciousness is indeed consciousness of something, and the ‘of’ in ‘consciousness of’ is the ‘of’ of intentionality” (p. 130). When an individual is conscious of a belief, desire, want, need, etc., he is conscious of his intentionality, and it is the intentionality which gives significance to language.

Language provides a social platform for expressing human intents. The primary focus of language is the manifestation of intent, and all structured forms of language serve intent. According to Searle (1969), language is “rule-governed intentional behavior” (p. 16). Bruner (1986) stated, “Discourse is governed by the communicative intentions of speakers” (p. 81). Sperber and Wilson (1986) stated that language is important because “...communication exploits that ability of humans to attribute

intentions to each other..." (p. 24). Additionally, Sperber and Wilson (1986) said, "Utterances are used not only to convey thoughts but to reveal the speaker's attitude to, or relation to, the thought expressed" (p. 10-11). Therefore, language exists so that human intents might become transmittable and recognizable (Sperber & Wilson, 1986). Searle (1992) stated, "Any attempt to reduce intentionality to something nonmental will always fail because it leaves out intentionality" (p. 51). If intent is removed from language, a meaningless system of codes and symbols remains.

One unique attribute of language is its arbitrariness. A word is different from its referent. A referent can be an idea, a concept, or an object. For example, the word *table* does not have the physical form of an actual table. The set of five graphemes that constitute the word *table* refers to an object. The word is arbitrary in form. Nelson (1996) stated, "Language brings mental models under symbolic control" (p. 68). The five graphemes that represent a table are the structure under which a table is brought under symbolic control. Rather than structure, function is the crucial issue. Nelson (1996) stated, "Its structure emerges from its function but is not its primary focus. This development must then be understood within the experiential-social-communicative system" (p. 114). The structure of language has as much meaning and purpose as its accompanying functions, consciousness and intention, allow.

Social Facts

In addition to the intentionality of an individual, there is also collective intentionality (Searle, 1995). Searle (2011) stated, "Collective intentionality is a type of intentionality, and society is created by collective intentionality" (p. 25). Collective intentionality refers to two or more individuals intending to do something together, such

as violinists playing together in an orchestra (Searle, 1995). When a group has collective intention, they have the "...capacity of conscious agents to create social facts..." and social reality (Searle, 1995, p. 19). Similarly, Wagner (1998) stated, "A constructive event is an event in the course of which a something is named, equipped with attributes and values, and integrated into a socially meaningful world" (p. 307).

Collective intentionality allows for humans to have the capacity to assign status functions, which means "...to impose functions on objects and people where the objects and the people cannot perform the functions solely in virtue of their physical structure. The performance of the function requires that there be a collectively recognized status that the person or object has, and it is only in virtue of that status that the person or object can perform the function in question" (Searle, 2011, p. 7). The existence of the planet earth is true independent of human agreement and collective intentionality. In contrast, the existence of the state of Mississippi depends upon a collective agreement that the mass of land bordered by the Mississippi River and the Gulf of Mexico is in fact a state named Mississippi. The land itself has no governmental status by virtue of its physical features alone. Its status as an independent state is only a fact as long as a collective society considers it so.

Searle (1995) stated that "...social reality is created by us for our purposes and seems as readily intelligible to us as those purposes themselves" (p. 4). In most cases, it is easier to perceive objects and states of affairs "in terms of their socially defined functions," rather than in terms of their molecules and physical reality (Searle, 1995, p. 4). Moreover, Searle (1995) stated, "...once there is no function, no answer to the

question, what's it for? we are left with a harder intellectual task of identifying things in terms of their intrinsic features without reference to our interests, purposes, and goals" (p. 5). This concept is coherent with the theory of relevance, which is the idea that "...there is a single property – relevance – which makes information worth processing for a human being" (Sperber & Wilson, 1986, p. 46). Sperber and Wilson (1986) stated, "...humans automatically turn their attention to what seems most relevant to them" (p. 50). Berger and Luckmann (1989) stated that "...knowledge of everyday life is structured in terms of relevances" (p. 45).

Searle (1995) identified social facts as a subcategory of mental facts. First, what is a fact? Frege (1956) stated, "A fact is a thought that is true" (p. 307). Mental facts are those facts which "are dependent on [humans] for their existence" (Searle, 1995, p. 9). The following is an example of a mental fact: *I want to go on vacation*. For this sentence to be true, a conscious human being must exist. The following sentence is an example of a social fact: *We want to go on vacation together*. This sentence requires the existence of two or more conscious individuals in order to be a fact. Likewise, the existence of the state of Mississippi is a social fact, because a society of conscious humans must believe in and agree upon the fact for it to exist.

Brute, Institutional, and Non-Institutional Mental Facts

Searle (1995) considered mental facts as being the opposite of *brute facts*. Lakoff (1987) stated that brute facts are "...those that are true regardless of any human institution. Thus, someone's height is a brute fact, as is the atomic weight of gold" (p. 170). Searle (1995) defined brute facts as "...facts totally independent of any human opinions...Brute facts require no human institutions for their existence" (p. 2).

Anscombe (1958) defined brute facts as "...the facts which held, and in virtue of which, in a proper context, such-and-such a description is true or false, and which are more 'brute' than the alleged fact answering to that description" (p. 71).

The following is an example of a brute fact: *The meadow is full of grass*. This sentence can be true independent of all human institutions and opinions. Whether or not a human or group of humans believes, opines, or declares that the meadow is full of grass has no actual bearing on the existence of this fact. Another example of a brute fact is the following sentence: *Earth has one moon*. This statement is a fact, regardless of any social or cultural agreement. A brute fact is a matter of the physical world and biology (Searle, 1995).

Humans deal with more than brute facts. Anscombe (1958) first suggested the idea that the world included not only brute facts, but also institutional facts upon which society is built. Berger and Luckmann (1989) stated, "Society is a human product" (p. 61). Zaibert (1999) said, "Some facts can exist independently of human beings and their institutions; the existence of other facts depends on human institutions" (p. 274). MacCormick (1998) stated, "Our judgment of the state of the world is not simply in terms of pure physical fact and relationships, but in terms of an understanding of such facts and relationships as humanly meaningful" (p. 323).

Institutional facts comprise a subcategory of social facts, which are in turn a subcategory of mental facts (Searle, 1995). Institutional facts are, therefore, a type of social mental facts. First, what is an institution? Searle (2011) stated, "An institution is a system of constitutive rules" (p. 10). Anscombe (1958) stated, "The existence of the description A in the language in which it occurs presupposes a context, which we will call

'the institution behind A'... For example, the institution of buying and selling is presupposed to the description 'sending a bill'" (p. 72). Berger and Luckmann (1989) stated that institutionalization is "...the foundation for the social construction of reality" (p. 182). Human institutions include systems such as "money, property, governments, and marriages" (Searle, 1995, p. 1). Other examples of institutions include such things as sports leagues, holidays, and elected positions. These entities are created by humans and remain in existence based upon social norms or rules. Berger and Luckmann (1989) stated, "Institutions...by the very fact of their existence, control human conduct by setting up predefined patterns of conduct" (p. 55).

Lakoff (1987) defined institutional facts as facts "...that are true by virtue of some human institution. Someone's social standing and the dollar value of gold are institutional facts" (p. 170). Searle (1995) posited that "...these are things that exist only because we believe them to exist...facts dependent on human agreement... Institutional facts are so called because they require human institutions for their existence" (pp. 1-2). Hulsen (1998) stated that "...an institutional fact is a meaning-content which achieves intersubjective existence simply and solely by being generally accepted as such" (p. 284). Therefore, in the case of Anscombe's example, receiving a bill is an institutional fact. Speaking in brute terms, an individual may in fact be receiving a sheet of paper with ink markings. The paper with ink becomes a bill once certain rules and norms are accepted by a group of individuals, acting with collective intentionality.

Therefore, a mental fact may be a social fact if its existence involves two or more individuals. Subsequently, a social fact may be an institutional fact if its existence is dependent upon human institutions. A mental fact may exist independent of human

institutions. Mental facts which exist independent of institutional facts are *non-institutional mental facts*. The following sentence is an example of a mental fact that exists independent of human institutions: *We need the paper*. The intention of needing was performed by two or more individuals; however, this fact can exist independent of collective human acceptance or recognition. Paper is paper “in virtue of intrinsic physical structure” (Searle, 1995, p. 124). If the sentence is slightly altered – *We need the bill* – then the new sentence becomes an institutional fact. The paper is now given a social status. The existence of a bill requires certain “constitutive rules” upon which the human institution of commerce is predicated (Searle, 1969, p. 186).

Searle (1997) stated, “Institutional facts require the existence of social institutions” (p. 452). Searle (1997) stated, “The institutional fact that I bought a car with money can only exist within such institutions as money, property and exchange” (p. 452). The following example of a mental fact – *I want to be with you* - is dependent upon the consciousness of one individual. If made plural - *We want to be together* - the sentence becomes a social fact. If a human institution (marriage) is included - *We want to be married* - the sentence becomes an institutional fact.

The following is another example of an institutional fact: *The book costs 20 dollars*. In order for this sentence to be a fact, the human institution of money must exist. The paper, fiber, and ink that comprise a 20 dollar bill are recognized as a 20 dollar bill based upon the human institutions of money and commerce. This sentence requires human agreement regarding the worth of a dollar. Another example of an institutional fact is the following sentence: *Barack Obama is the President*. This sentence requires the human institution of democratic government and human agreement regarding voting

rights and voting procedures for its existence. An institutional fact is a matter of culture and society (Searle, 1995).

Searle (1995) held that all institutional facts are reducible to brute facts and require brute facts in order to exist. The previous institutional fact can be reduced to a brute fact by doing away with societal norms, voting regulations, and constitutional declarations. The following is an example of a possible remaining brute fact: *Barack Obama is a human*. The fact that Barack Obama is a human exists independent of societal acceptance. Hulsén (1998) stated, "An institutional fact is a fact simply and solely because it receives acceptance as a fact" (p. 286).

The following institutional fact will now be examined: *The team played a basketball game*. The game of basketball only exists "...in the light of a common belief that the situation is the case" (Hulsén, 1998, p. 284). Plausibly, five individuals could work together to place a ball through a circle without playing a basketball game. The existence of basketball and other sports "...are facts, not because they are states of affairs, but because they are generally accepted as states of affairs" (Hulsén, 1998, p. 284). The following statement is a brute fact: *Five individuals place a ball through a circle*. For this brute fact to be transformed into an institutional fact, a group must accept a set of rules or norms. Hulsén (1998) stated, "...the facticity of an institutional fact depends on its being internalized by the members of a group. For it is only on this condition that an institutional fact can have the same kind of incontestability as a brute fact" (p. 285). Once the rules and norms of basketball are accepted by a group and applied to the previously stated brute fact, the following institutional fact may be created: *The team played a game of basketball*. As MacCormick (1998) stated, "That the one

counts as the other depends on the possibility of interpreting what occurs in the light of a norm or norms, that may range from the most informal implicit norm or convention to the most highly formalized and articulated rule” (p. 333).

Important to this study is the consideration of fictional characters as institutional facts. Hulsén (1998) posited that the existence of Santa Claus is an institutional fact, insofar as Santa Claus is being discussed by children who believe in Santa Claus. Hulsén (1998) stated that because a group of adults know Santa Claus to be a fictitious character, to them his existence ceases to be an institutional fact. As Searle (1995) stated, institutional facts are “...things that exist only because we believe them to exist...facts dependent on human agreement” (p. 1-2).

Speaking in brute terms, fictional characters such as those seen on television cartoons may actually be sketches, drawings, or animation. For example, the existence of one large black circle with two smaller adjoining black circles is a brute fact. In contrast, the existence of Mickey Mouse is an institutional fact. If a child utters the following sentence – *I want to watch Mickey Mouse* – the child is producing an institutional fact. The existence of Santa Claus and Mickey Mouse depend upon collective human agreement. Although they remain fictitious, humans have *agreed* them into existence. Without collective human agreement, the United States of America is no more real than Santa Claus. Thus, for a child, the existence of fictional characters is an institutional fact.

One could inquire as to which institution fictional characters rely upon, since it has been stated that a bill depends upon the institution of commerce and a state depends upon the institution of government. For purposes of this study, fictional characters depend upon the institution of fictional existence, insofar as humans *agree* them into

existence. Since this study deals with 6-year-old and 9-year-old boys, fictional characters such as Santa Claus are incorporated as part of an operational definition for institutional facts. The question as to whether or not fictional characters are institutional facts for adults is a topic for future research.

Zaibert (1999) applied the distinction between brute and institutional facts to property rights over land, stating that, "the existence of parcels of real estate is wholly a matter of human institutions: without humans all that exists is raw land. And what an owner of landed property owns is not raw land. The owner owns a land-parcel, or real estate..." (p. 274). Indeed, institutions and institutional facts are required in order to own land. Additionally, Zaibert (1999) applied the distinction between brute and institutional facts to powers and rights, stating, "The existence of powers is, in most cases, a brute fact, and the existence of rights is, in most cases, an institutional fact" (p. 274). More research is needed in order to fully develop the latter idea.

Brute and Institutional Values

In addition to discussing brute and institutional facts, Genova (1970) also discussed brute and institutional values. Using the example of chess, Genova (1970) stated that a checkmate has more institutional value than a check. Speaking in brute terms, both actions are the movement of an object from one location to another. It is the social agreement upon the rules of chess that place higher institutional value on one movement of an object in comparison to the movement of another.

The following institutional fact was found in the narratives analyzed in this study: *They won the SEC Championship*. In accordance with Genova (1970), it can be assumed that winning the SEC Championship has more institutional value than winning a

scrimmage game. The distinction between brute and institutional values is a topic for future research.

CHAPTER III

METHODOLOGY

Research Question, Hypothesis, and Variables

Research Question

Is there a difference between the use of brute facts, institutional facts, and non-institutional mental facts in narratives by 6-year-old boys and 9-year-old boys?

Null Hypothesis

There is no difference between the use of brute facts, institutional facts, and non-institutional mental facts in narratives by 6-year-old and 9-year-old boys.

Directional Hypothesis

[Because no previous research was conducted to warrant a directional hypothesis, it is appropriate to utilize a null hypothesis only.]

Variables

The independent variables are 6-year-old boys and 9-year-old boys. The dependent variables are the use of brute facts, institutional facts, and non-institutional mental facts in narratives.

Operational Procedures

This study utilized a total of 19 participants. Ten participants were 6-year-olds, and 9 participants were 9-year-olds. The participants were from the greater Hattiesburg, Mississippi, area. Parental permission was obtained and a consent form was signed before procedures were administered. Approval was gained from the Institutional Review Board.

The participants produced language in the form of spontaneous narratives. The language samples were collected by university students and professors in environments familiar to the participants. Each utterance analyzed in this investigation was produced in actual social commerce.

Those utterances which were incomplete or could not be categorized readily were not included and were not counted in the average number of utterances per participant. The following are examples of utterances found in the narratives which were not included in this research:

1. Your turn.
2. The pizza.
3. The chief school.
4. Not that much pages.
5. Maybe two pages.
6. And three.
7. And ten fingers.
8. Like the fever on the next block.
9. That new commercial.
10. Not that big.
11. One of my teachers.
12. One of my Spiderman movies.
13. An Eagle hat?
14. Mario vs. Donkey Kong.
15. You cheater.

The narratives were then analyzed for the use of brute facts (B), institutional facts (I), and non-institutional mental facts (N), according to the following operational definitions:

1. *Brute facts* – those facts which deal with the physical world and exist independent of human opinion and societal agreement, such as biology or chemistry, personal physical experience, physical action or movement, possession, and physical characteristics.
2. *Institutional facts* – those facts which require human agreement and social institutions for their existence, such as holidays, sports leagues and teams, fictional characters, school courses, games, money and commerce, elected and appointed positions, cities/states/countries, marriage, etc.
3. *Non-institutional mental facts* – those facts which require cognition and consciousness for their existence, yet exist independent of human institutions, such as desire, knowledge, likes and dislikes, favorites, love and hatred, ease and difficulty, need, motive, thought, forgetting and remembering, fear, etc.

The construct validity of this research method is based upon the theory of constructionism. Specifically, the research focuses on the intent of the speaker by utilizing spontaneous utterances, as opposed to elicited utterances. The participants were not asked to perform tasks which they had never previously performed. Additionally, these utterances came from actual social use of language, thereby giving the results ecological validity.

CHAPTER IV

RESULTS

Descriptive Evidence

Table 1 provides descriptive data for the study. Among 6-year-old boys, 1,946 utterances were recorded and analyzed. As displayed in Table 2, the 6-year-old boys produced an average of 194.6 utterances. Brute facts (B) constituted a mean of 63.3% of spontaneous utterances spoken. Institutional facts (I) constituted a mean of 11.2% of spontaneous utterances spoken. Non-institutional mental facts (N) constituted 25.5% of spontaneous utterances spoken.

Table 1

Descriptive Group Statistics for 6-Year-Old and 9-Year-Old Boys

	Group	Participants	Mean	Standard Deviation
Count	B - 6	10	123.1	14.1
	B - 9	9	103.9	29.9
	I - 6	10	21.5	13.8
	I - 9	9	39.6	13.7
	N - 6	10	50.0	18.1
	N - 9	9	43.7	15.1
	Total - 6	10	194.6	16.3
	Total - 9	9	187.1	28.6
Proportional	B - 6	10	.633	.057
	B - 9	9	.549	.114
	I - 6	10	.112	.074
	I - 9	9	.214	.073
	N - 6	10	.255	.086
	N - 9	9	.237	.088

Among 9-year-old boys, 1684 utterances were recorded and analyzed. The 9-year-old boys produced an average of 187.1 utterances. Brute facts (B) constituted a mean of 54.9% of spontaneous utterances spoken. Institutional facts (I) constituted 21.4% of spontaneous utterances spoken. Non-institutional mental facts (N) constituted 23.7% of spontaneous utterances spoken.

Figure 1 provides visual comparisons of production of brute, institutional, and non-institutional mental facts both within age group and between age groups. Both age groups produced significantly more brute facts than institutional or non-institutional mental facts. The 6-year-old boys produced significantly more non-institutional mental facts than institutional facts. The 6-year-old boys produced more brute facts than the 9-year-old boys. The 9-year-old boys produced significantly more institutional facts than the 6-year-old boys. The use of non-institutional mental facts was comparable between age groups.

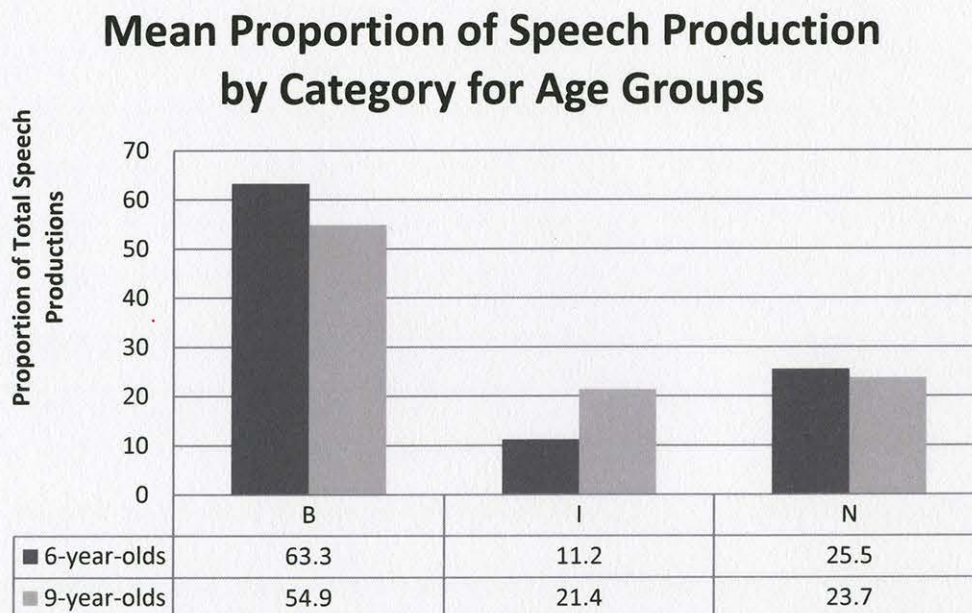


Figure 1. Mean Proportion of Production of Brute (B), Institutional (I), and Non-Institutional Mental Facts (N) in Narratives of 6-Year-Old and 9-Year-Old Boys.

Appropriate Categories

Table 2 displays the paired comparisons of production of brute, institutional, and non-institutional mental facts within age groups. The 6-year-old boys produced significantly more brute facts than institutional facts or non-institutional mental facts, and they produced significantly more non-institutional mental facts than institutional facts.

The 9-year-old boys also produced significantly more brute facts than institutional or non-institutional mental facts. The use of institutional and non-institutional mental facts was not significantly different among 9-year-old boys. These results indicated that the three operational categories utilized in this research are appropriate and useful for studying narratives of 6-year-old and 9-year-old boys.

Table 2

Paired Comparisons for Brute (B), Institutional (I), and Non-Institutional Mental Facts (N) for 6-Year-Old and 9-Year-Old Boys within Age Groups

	Paired 95% Confidence Upper	T	df	Sig. (2-tailed)
6-B – 6-I	.594	16.373	9	.000
6-B – 6-N	.468	9.468	9	.000
6-I – 6-N	-.037	-3.034	9	.014
9-B – 9-I	.465	5.917	8	.000
9-B – 9-N	.458	4.923	8	.001
9-I – 9-N	.065	-.605	8	.562

As seen in Table 3, the use of institutional facts was significantly different in 6-year-old and 9-year old boys. The 9-year-old boys produced significantly more institutional facts in narratives than the 6-year-old boys. The use of non-institutional mental facts was not significantly different across age groups. While the use of brute

facts was not significantly different across age groups (the significance was .069), the 6-year-old boys tended to produce more brute facts than the 9-year-olds.

Table 3

Independent Samples Test Comparing Production of Brute Facts (B), Institutional Facts (I), and Non-Institutional Mental Facts (N) in 6-Year-Old Boys and 9-Year-Old Boys across Age Groups

	t-test for Equality of Means			
	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence
				Lower
B-PROPORTIONAL Equal variances not assumed	.069	.0844167	.0421089	-.0077328
I-PROPORTIONAL Equal variances not assumed	.007	-.1026022	.0336500	-.1736438
N-PROPORTIONAL Equal variances not assumed	.654	.0182044	.0399492	-.0661920

Discussion

Spontaneous Language Samples

In order for assessment to be valid, clinicians should obtain a language sample that is representative of the individual's actual use of narratives. An individual's daily use of language is the manifestation of the speaker's intentions and mental states. A sample of the speaker's actual repertoire in social commerce provides a useful sample. According to Ninio, Snow, Pan, and Rollins (1994), "A description of a language user's linguistic system must include information about the communicative intents s/he can express" (p. 158). Cole, Mills, and Dale (1989) stated, "For young children in particular, language sampling is believed to provide more representative information about the

child's productive ability than more structured test procedures because it allows child-initiated language production" (p. 259).

Intent is the irreducible nucleus of language (Bruner, 1996). Bruner (1986) stated, "Narrative deals with the vicissitudes of human intentions" (p. 16). It follows that the assessment of narrative should also deal with the human intentions. It is desirable for clinicians to rely on language sampling when making judgments about a child's language abilities. The critical question then becomes whether or not a specific language assessment technique addresses the intent of the speaker. Clinicians who rely on elicited or imitative behavior for language samples may miss the importance of the child's intents and subsequently misrepresent the child's language ability. When predetermined behaviors are elicited outside of social commerce, the resulting sample may be misleading. Culatta, Page, and Ellis (1983) were concerned that some elicited approaches may yield invalid results. Examples of such elicitation techniques are found in some of the standardized, normative tests used in the field. Culatta et al. (1983) stated that it is more efficacious to base language assessment upon "integrated communicative performance," rather than performance of isolated language rules (p. 66).

Syntagmatic-Paradigmatic Shift

White (1965) summarized the existence of a "miscellany of behavior changes reported during the period from 5-7 years of age" (p. 208). Among those behavioral changes, Woodrow and Lowell (1916) studied word associations in children and adults and evidenced that a shift occurs in mental associations between childhood and adulthood. This shift was later identified by Ervin (1961) as the syntagmatic-paradigmatic shift. Ervin (1961), referring specifically to word associations, stated that

there exists “a significant increase with age in the proportion of responses in the same grammatical class as the stimulus-word” (p. 372). Brown and Berko (1960) found that in a word association test, adult response words “usually belong to the same parts-of-speech as the respective stimulus words... the tendency to associate words within a part-of-speech increases with age” (p. 13). Muma and Zwyczewicz-Emory (1979) applied “another paradigm to the shift of verbal behavior before and after seven” and found a verbal shift between the uses of animate contexts in five year olds and nine year olds (p. 307).

Having done an analysis of many of Piaget’s writings, White (1965) concluded that for Piaget, the age of seven “is a transition point between major epochs of mental development” (p. 210). When discussing the growth of thought in children, Piaget (1971) found a distinction between children before and after seven years of age. Piaget (1971) stated, “From 4 to about 7 or 8 years, there is developed... an intuitive thought whose progressive articulations lead to the threshold of the operation” (p. 123). Additionally, Piaget (1971) stated, “...From 4 to 7 years we see a gradual co-ordination of representative relations and thus a growing conceptualization, which leads the child from the symbolic or preconceptual phase to the beginnings of the operation” (p. 129). Piaget (1971) further stated, “From 7-8 to 11-12 years ‘concrete operations’ are organized, i.e. operational groupings of thought...” (p. 123). Thus, children under seven years of age deal more with intuition; children over seven years of age deal more with operations and groupings.

The present study pertains to the literature on the syntagmatic-paradigmatic shift. This study showed that nine year old boys produced significantly more institutional facts

in spontaneous narrative than did six year old boys. These results indicated yet another cognitive-linguistic shift occurring at approximately seven years of age.

Language Sampling Size

Researchers and clinicians have long discussed the ideal size of a language sample. Heilmann, Nockerts, and Miller (2010) stated, "Sample length undoubtedly affects the reliability of language sample measures: Longer samples are usually more reliable than shorter samples" (p. 402). Lee (1974) suggested acquiring a minimum of "fifty complete sentences," and in some cases 100 utterances, in order to obtain useful results (p. 66). Cole et al. (1989) studied the test-retest, split-half, and first-half versus second-half results from language samples in ten children, ages 52-80 months. They stated that, "...a second 100 utterance sample may provide 27% more lexical information than the original 100 utterances sample" (p. 266). They further stated, "...a 50 utterances language sample may contain 73-83% of the lexical information found in a 100 utterance sample. Whereas a larger sample will clearly provide additional information, gathering a shorter sample may be more reasonable for clinical efficiency in some instances" (p. 266). Tyack and Gottsleben (1977) stated, "We have found that 100 sentences provide a better (i.e., more typical) sample of a child's language than do samples of only 50 sentences. Moreover, small errors in the analysis procedure become less significant with 100 sentences than with the traditional 50" (p. 5).

Gavin and Giles (1996) evaluated the reliability of language sampling measures and concluded, "Not until sample size reached 175 complete and intelligible utterances did all of the measures reach the more stringent diagnostic criterion of a coefficient greater than .90" (p. 1261). Muma et al. (1998) analyzed language samples of 400

spontaneous utterances in seven preschool children. Muma et al. (1998) found, "The overall sampling error rates for 50- and 100-utterance samples were very large, 55% and 40%, respectively" (p. 327). Muma et al. (1998) concluded, "With a sampling error rate of about 15%, language samples should use 200 to 300 utterances to estimate most grammatical repertoires" (p. 310).

In order to avoid an unacceptable sampling error rate, this study utilized an average of 191.1 utterances per participant. It would be desirable for future research to include 200 to 300 utterances per participant.

Avoiding examiner influence

One could argue the point that the examiners could influence the use of institutional facts in the narratives of children, by directing the spontaneous conversation towards topics such holidays and sports. In this study, examiner influence was avoided due to the fact that the examiners were naïve to the research focus on brute and institutional facts when the language samples were obtained.

CHAPTER V

CONCLUSION

While further research is needed, this research indicated differences in the use of brute, institutional, and non-institutional mental facts among 6-year-old boys and 9-year-old boys. The 9-year-old boys in this study produced significantly more institutional facts in spontaneous narratives than the 6-year-old boys. These findings indicate that 9-year-old boys express more narratives dealing with human institutions (i.e. holidays, sports leagues and teams, fictional characters, systems of measurement, school courses, games, money and commerce, elected and appointed positions, cities/states/countries, marriage, etc.) than 6-year-old boys.

Limitations of this research include both the number of 6-year-old boys and the number of 9-year-old boys. Further research should include a larger number of both 6-year-old male participants and 9-year-old male participants, to more fully appreciate the role of brute, institutional, and non-institutional mental facts in their narratives. It is desirable for further research to include the use of these facts in the narratives of girls and the narratives of other age groups, such as 12-year-olds and 15-year-olds.

Another limitation in this research was the lack of previously outlined operational definitions for brute facts, institutional facts, and non-mental institutional facts. Before this study, the difference in brute and institutional facts was "an empirical question awaiting a technique of investigation" (Brown, 1973, p. 146). The operational definitions included in this research now provide an appropriate technique of investigation for brute and institutional facts.

An understanding of narratives by 6-year-old boys and 9-year-old boys may provide an insight into language abilities other than grammatical skill alone. A grammatical analysis may give different information than a brute and institutional fact analysis. A brute and institutional analysis would add to, not replace a grammatical analysis.

APPENDIX A

INSTITUTIONAL REVIEW BOARD NOTICE OF COMMITTEE ACTION


**THE UNIVERSITY OF
SOUTHERN MISSISSIPPI.**

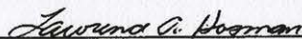
INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.6820 | Fax: 601.266.4377 | www.usm.edu/irb

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **11101401**
PROJECT TITLE: **Auxiliary System: Full Bloom**
PROJECT TYPE: **New Project**
RESEARCHER/S: **Jennifer Salgo**
COLLEGE/DIVISION: **College of Health**
DEPARTMENT: **Speech & Hearing Sciences**
FUNDING AGENCY: **N/A**
IRB COMMITTEE ACTION: **Expedited Review Approval**
PERIOD OF PROJECT APPROVAL: **10/18/2011 to 10/17/2012**



Lawrence A. Hosman, Ph.D.
Institutional Review Board Chair

10-21-2011

DATE

APPENDIX B

RAW DATA FOR 6-YEAR-OLD BOYS

A total of 3,630 utterances were recorded and analyzed. An average of 191.1 utterances was obtained from each participant. The narratives of 6-year-old boys had an average of 194.6 utterances per participant. The greatest number of utterances obtained from one of the 6-year-old boys was 222 (J.S.). The fewest number of utterances obtained from one of the 6-year-old boys was 168 (T.J.). The highest frequency of brute facts among the 6-year-old boys was 72.6% (L.J.), and the lowest frequency was 53.5% (C.K.). The highest frequency of institutional facts among the 6-year-old boys was 21.7% (C.K.), and the lowest frequency was 1.8% (T.J.). The highest frequency of non-institutional mental facts among the 6-year-old boys was 38.3% (S.S.), and the lowest frequency was 12.8% (B.H.).

6-year-olds	Utterances	B	I	N
J.S.	222	143	18	61
T.J.	168	102	3	63
S.S.	214	122	10	82
I.T.	188	124	33	31
C.K.	198	106	43	49
J.H.	201	118	21	62
L.J.	201	146	6	49
J.R.	191	128	13	50
B.H.	187	127	36	24
G.S.	176	115	32	29
Total	1946	1231	215	500

APPENDIX C

RAW DATA FOR 9-YEAR-OLD BOYS

The narratives of 9-year-old boys had an average of 187.1 utterances per participant. The greatest number of utterances obtained from one of the 9-year-old boys was 212 (L.M.). The fewest number of utterances obtained from one of the 9-year-old boys was 123 (A.L.). The highest frequency of brute facts among 9-year-old boys was 73.1% (G.L.), and the lowest frequency was 41.5% (A.L.). The highest frequency of institutional facts among the 9-year-old boys was 33.0% (W.S.), and the lowest frequency was 13.0% (L.S.). The highest frequency of non-institutional mental facts among 9-year-old boys was 37.4% (A.L.).

9-year-olds	Utterances	B	I	N
P.B.	205	95	43	67
L.S.	208	137	27	44
A.S.	190	83	46	61
A.L.	123	51	26	46
G.L.	182	133	31	18
L.M.	212	139	29	44
M.B.	162	84	52	26
W.S.	203	95	67	41
D.A.	199	118	35	46
Total	1684	935	356	393

APPENDIX D

FACTS FOUND IN SPONTANEOUS NARRATIVES

The following are examples of brute facts (B) found in the narratives analyzed:

1. We read books in the morning.
2. You can dance.
3. I put my feet on it.
4. It rolls it down.
5. There's a line on the net.
6. There's a ramp on the side.
7. Every week we do different stuff.
8. I was doing a program.
9. I usually play by myself.
10. I have all of them.
11. I got the baby.
12. I just turned six.
13. Mine's bigger.
14. The rat takes the cheese.
15. I'm just looking.

The following are examples of institutional facts (I) found in the narratives analyzed:

1. New York Giants are going to win the Super Bowl.
2. Boxing is a sport.
3. I was the stage manager.
4. We went to Texas once.

5. My stepdad is [name].
6. I go to P.E. on Wednesday.
7. I have Lego Batman.
8. My sister's heifer is about to have a baby at the Dixie Nationals.
9. I got Honor Roll.
10. I have a quarter.
11. She's a princess.
12. They won the SEC Championship.
13. Have you seen Paul Bunyan?
14. Is he four inches?
15. We won first place one time.

The following are examples of non-institutional mental facts (N) found in the narratives:

1. He wants to attack my sister.
2. I like salads and taco salads.
3. It's hard to me.
4. I'll try and get this.
5. I think it's equal.
6. So, I don't want to get my feet dirty.
7. I know it's a cucumber.
8. I need his little float.
9. When we get on the trampoline [name] hates [name].
10. He's afraid of me.
11. We figure stuff out.

12. My favorite animal is the lizard.
13. I wanted to cry.
14. I don't remember the dog's name.
15. I like doing fun work.

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