“Basic Information Structure” and “Academic Language”: An Approach to Discourse Analysis

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Introduction

This paper has two purposes. One purpose is to introduce a tool for analyzing some aspects of discourse. This tool is based on what I will call "Basic Information Structure" ("BIS" for short). The second purpose is to apply this tool to a specific example so that I can both make the use of the tool clear and speak to an issue I wish to address.

The issue I want to address deals with "academic language" (Gee 2004; Schleppegrell 2004). Academic language is a general name for many different varieties of language associated with academic disciplines or with academic content in schools, for example, the styles of language and other symbol systems associated with chemistry or social science.

Academic language is technical or specialist language. Of course, there are non-academic varieties of technical or specialist language. Domains such as video games, carpentry, or auto mechanics have their own specialist styles of language, as do professions like law, medicine, engineering, handicapping horse races, or fashion design, and so forth (some such professions, broadly speaking, could be counted as "academic", but not all).

The issue germane to academic language I want to address is this: some people have argued that academic varieties of language are functional in the sense that they have evolved in history to do certain intellectual and interactional tasks necessary for an academic domain to make progress (Halliday & Martin 1993). They cannot simply be

replaced with less specialized versions of language, any more than a tool purpose-built for a specific job can simply be replaced, without loss, by a more generalized tool.

Others have argued that such academic varieties of language are forms of "jargon" and complexity invented to exclude, confuse, and frustrate outsiders (non-academics and people outside a given field) and to hide or evade political, cultural, institutional, and social issues in the name of "reason" or "logic" (see Wiley 1996 for discussion). In this sense, such forms of language are "ideological" (I am using the word loosely here, see Wiley 1996 for a more explicit discussion).

This issue—whether academic varieties of language are functional or ideological (in the informal senses I have given these terms here)—has played a role in education. Some educators argue that children need to be introduced in school (for example, in science classrooms) to academic varieties of language early on, because mastery of these representational systems is crucial for true understanding and real participation in areas of science, for instance (Halliday & Martin 1993). Others have argued that academic varieties of language simply serve to make the "rich" kids look smarter than the "poor" ones—because they have had more home-based preparation for such varieties (Lee 2002). Such academic varieties of language are barriers to understanding and participation, on this view, and need to be replaced with more democratic forms of language, interaction, and participation.

The paper will proceed in three parts. First I will introduce "Basic Information Structure" as a tool for analysis. Second, I will discuss the issue of academic and other specialized forms of language. Third, I will use BIS to analyze a specific case in order to illuminate the issue of academic language being "functional" and/or "ideological" (we will see, in fact, that it can be both at the same time), as well as to show one of the uses to which BIS can be put.

Before I start, let me say that I do not separate "critical discourse analysis" from "discourse analysis" proper. All language use is political in the sense of expressing (tacitly or overtly) messages about things like status and solidarity and other "social goods" in society. Thus, any form of discourse analysis must pay attention to such issues. I have discussed this issue elsewhere (Gee 2003, 2005). It will be apparent by the end of this paper that the example I discuss is one where "giving information" and "expressing political, ethical, value-laden messages" go hand-in-hand.

The Design of Discourse and "Basic Information Structure"

This section contains the basic grammatical information necessary to understand what I will call "Basic Information Structure" (BIS). We start with the notion of a "basic clause". The "basic clause" is the fundamental unit of both syntax and semantics (Gee 2005). A basic clause is any predicate (verb, predicate adjective, or predicate noun) and its required arguments. Below are some basic clauses:

1a. Mary touched John [verb]

1b. Mary is healthy [predicate adjective]

1c. Mary has a brother [predicate noun]

Basic clauses can be expanded by adding optional arguments:

2a. Mary touched John on the head

2b. Mary touched John with her lips

2c. Mary touched John on the head with her lips

Basic clauses can also be expanded by optional elements that are not arguments but which modify either the predicate or the whole clause in some way:

3a. Mary lightly touched John on the head	["lightly" and "on the head" modify the predicate "touched"]
3b. Yesterday, Mary touched John	["yesterday" modifies the clause "Mary touched John"]
3c. Mary is pretty healthy for an old woman	["pretty" and "for an older woman" both modify the predicate "healthy"]
3d. Fortunately, Mary is healthy	["fortunately" modifies the clause "Mary is healthy"]
3e. Mary has an older brother in college	["older" and "in college" modify the predicate "brother"]

3f. Mary, fortunately, has a brother ["fortunately" modifies the clause "Mary has a brother"]

Basic clauses, augmented or not by optional arguments or elements, can be combined or integrated in four ways. First is a "loose" way, when two or more clauses are combined by coordination and both clauses are main clauses:

4a. Mary is healthy, but she touched John on the head with her lips

4b. Mary is healthy and she touched John on the head with her lips

Second, clauses can be combined in a somewhat less loose way, when one or more clauses is juxtaposed, as a subordinate clause, to a main clause:

5a. While John was not looking, Mary touched him on the head. ["while" introduces subordinate clause]

5b. Mary touched John on the head because he was causing trouble. ["because" introduces subordinate clause]

Third, two clauses can be tightly integrated by having one clause embedded inside another one:

6a. John felt Mary touch him on the head [= "Mary touched him on the head" is embedded inside "John felt …"].

6b. John believed that Mary had touched him on the head [= "Mary touched John on the head" is embedded inside "John believed …"].

6c. Mary planned to touch John on the head [= "Mary touched John on the head" is embedded inside "Mary planned …"].

Fourth, in the tightest form of integration, a clause can be turned into a phrase , losing its status as a clause (Halliday & Matthiessen 1999). This can be done by changing a verb into noun, as when we change "destroy" into "destruction". It can also be done by changing a verb into an adjective, as when we change "abuse" into "abused" (e.g., "an abused spouse"). It can also be done by turning a predicate adjective into a noun, as when we change "happy" into "happiness". In all these cases, we end up with a part of speech (i.e., an adjective or noun) that can be made part of a larger phrase. This phrase—like all phrases—can then be made part of a clause:

7 Someone abuses children physically → physically abused children → Physically abused children need help [verb ("abuse") → adjective ("abused")]

8 The Romans destroyed the city → the Romans' destruction of the city → The Romans' destruction of the city[was uncalled for [verb ("destroy") → noun ("destruction")]

9 John is happy → John's happiness → John's happiness is infectious [adjective ("happy") → noun ("happiness")]

In some cases where a verb is turned into a noun (e.g., "destroy" → "destruction") or an adjective (e.g., abuse → abused), or when an adjective is turned into a noun ("happy" → "happiness"), the original verb or adjective is more common than the noun, as in the cases above. In other cases, the two are about equally common:

10a. John got angry → John's anger [is impressive]

10b. John loved Mary → John's love for Mary [is touching]

10c. John punched someone → John's punch [missed Bill]

11a. Someone broke the vase → The broken vase [was mine]

11b. I ripped my jeans → Ripped jeans [are cool]

11c. I frightened the child → The frightened child [needed help]

Sometimes the noun version of a verb, in particular, takes on a somewhat different and more specialized meaning than its related verb:

12a. John studied something → John's study [appeared in print]	["study" = research paper]
12b. John works hard → John's work [involves cars]	["work" = "job"]
12c. John speaks to a group → John's speech to the group [was well received]	["speech" = "lecture"]

So far, in all the cases above, we have been moving from phrases and clauses to more complex combinations of clauses. But in discourse analysis we usually must go the other way round. We have to start with sentences that are composed of two or more (sometimes many more) clauses (combined or integrated in the ways we have just discussed above and others) and unravel these sentences into their basic clauses and whatever optional arguments or other elements those clauses contain. That is, we have to ask what basic clauses (and optional arguments and elements) the sentences are composed of or, to put it yet another way, what basic clauses (and optional arguments and elements) the sentences combine or integrate. So, to give one example, consider the case below:

13. The present study sought to clarify previous work.

The present study	=	1. someone (= researchers) study something (= topic) in the present
sought	=	2. (1) seek (3-4)
to clarify	=	3. someone (= researchers) clarify (4)
previous work	=	4. someone (= the field) works on something (= topic) previously

(13) is a sentence that starts a published research article that I will discuss below (Pollak, Vardi, Putzer Bechner, & Curtin 2005: I have shortened the sentence). The phrase "the present study" contributes the clause "someone study something in the present". In the phrase "the present study", "study" is a noun related to the verb "to study" (of course, since it is noun, it has no tense—no time marking—and thus we cannot know what tense it would have had had it been used as a verb). When this verb is changed to a noun, the subject of the verb does not have to be mentioned, but we can infer that this subject is the researchers who are publishing the paper (thus, "researchers" is place in parentheses to mark that it is an inference). What the researchers are studying need not be mentioned either, but, again, we can infer that the object of the verb "to study" is the topic of the paper, that is, the topic the researchers did their research on and are reporting on in the paper (thus, "topic" is in parentheses)—we could, of course, fill in more fully what the topic actually is.

"Sought" is the main verb (predicate) of the sentence. Its subject is the information contributed to the sentence by the phrase "the present study". The information this phrase contains is represented in line 1—so I place (1) in the subject slot of "seek". "Sought" is the sort of verb that allows an infinitive (another verb, one with no tense marking) to be embedded inside or below it—in this case the infinitive "to clarify". "To clarify", then, is the predicate of a clause embedded inside (or "underneath") "sought": "researchers clarify something". The "something" that is clarified is expressed in line 4 (thus, "4" is in the object slot of "clarify"). The object of "seek"—what is sought—is the information in lines 3 and 4 (and, thus, "3-4" is in the object slot of "seek").

The phrase "previous work" has a noun ("work") in it related to the verb "to work" and so this phrase contributes the clause: "the field works on topic previously". Here, again, we have to infer that something like "the field" is the subject of "works" (or "researchers who have done previous work in the field"). We can infer, as well, that the object of "works" is once again the topic of the paper, a topic that has heretofore been worked on by others in the field. When the verb "to work" is made into the noun "work", the adverb "previously" (which modifies a verb) becomes the adjective "previous" (which modifies a noun).

Thus, the short sentence "The present study sought to clarify previous work" combines, in various ways, four clauses—or, we can say, it combines four clauses worth of information. Once we know what clauses a sentence combines, we can see that there were many other ways these same clauses could have been filled out and combined. Thus, there are many other ways in which the sentence "The present study sought to clarify previous work" could have been said or

written (could have been "designed"). A few examples are given below. These sentences either fill out optional arguments and elements in a different way, spell out inferences that were left unspecified, or combine or integrate the same clauses in a different way. Some of these forms below, while grammatical, would hardly ever or never be used for stylistic or pragmatic reasons. Let's assume for now that the topic of the study is "physically abused children":

14a. We studied physically abused children because we sought to clarify previous work in the field.

14b. The present study sought to clarify work that others had done previously.

14c. The present study studies physically abused children. We seek to clarify previous work.

14d. This study we have done in the present seeks to clarify work done previously.

14e. The present study of physically abused children seeks to clarify previous work.

14f. This study was done in the present. It sought something. It sought to clarify something. What it sought to clarify was work others had done previously.

14g. What the present study sought was to clarify was previous work.

14h. The present study of physically abused children sought to clarify previous work

Above we noted that optional arguments or other elements can be added to a clause (or left out). There are also optional elements that can be added to a sentence combining two or more clauses, elements that do not modify any one clause in the sentence, but either modify the sentence as a whole or communicate information about how the sentence connects to other sentences in a (oral or written) text:

15a.	Fortunately, the present study sought to clarify previous work	["fortunately" modifies the whole sentence]
15b.	The present study sought, fortunately, to clarify previous work	["fortunately" modifies the whole sentence]
16a.	First, the present study sought to clarify previous work	["first" connects this sentence to others in the text, e.g., the next one starting with "second"]
16b.	The present sought first to clarify previous work	["first" connects this sentence to others in the text}

When we generate a list of alternative ways clauses could have been filled out and combined (as in 14-16), we also generate the key question: Why were the clauses combined and filled out as they were and not some other way? There can be lots of different answers to this question. For instance, some alternatives are ruled out by the type or style of language required by the communicative task or the genre, here a professional publication. Thus, most or all of the

alternatives in 14 are not the "right" style for a professional academic publication. The sentence in 14h—which just spells out something that is left to be inferred in "The present study sought to clarify previous work"—might be avoided either because the authors do not want to name their topic directly or they feel it is obvious from other things in the paper (e.g., the title or abstract) or they feel the topic needs to be named or discussed in a more nuanced way than is possible by placing it as a phrase in this sentence.

A representation like that in 13 shows what I will call the "basic information structure" (hereafter BIS) in an oral or written text. So the BIS in the sentence "The present study sought to clarify previous work" is the four clauses below. Here I leave out the information in 13 that shows how the clauses are fit together and which information is left to be specified by inference:

17a. Someone study something

17b. Someone seek something

17c. Someone clarify something

17d. Someone work on something previously

Such basic information is "packaged"—put together into sentences—by: a) combining and integrating the clauses that the information expresses; b) adding optional arguments and elements to the clauses or the sentence as a whole; c) allowing for inferences to be made to specify

information that is left out. Each such "move" (a-c) is a choice and one style of discourse analysis is to ask, for each such choice, why it might have been made and what communicative function it might be serving. We can ask, as well, why other alternative choices were not made (sometimes the answer to this question illuminates the question about why a given choice was made and what it communicates).

Social Languages and the Question of Specialist Language

This section takes up the issue of academic language (and, more generally, specialist or technical varieties of language). Any language comes in many different varieties or styles used for different purposes (Gee 2004, 2005). There are different varieties of language used for different social identities and activities—for example, different varieties used by lawyers, doctors, gang members, biologists, carpenters, or video gamers. Such varieties are sometimes called "registers". I will refer to them as different "social languages". Social languages are differentiated from each by the use of different words (vocabulary) and sometimes by particular ways of using the morphological, syntactic, and/or discourse resources of the language.

One major distinction we can make (Gee 2004, 2005) in regard to social languages is between "vernacular social languages" (vernacular styles of language) and "specialist social languages" (specialist styles of language). Vernacular styles are used by people when they are communicating as "everyday" non-specialist people. Vernacular styles differ across different social and cultural groups. Specialist styles are used by people when they are communicating as a specialist of some sort, whether this be a doctor, minister, academic, or gamer. Specialist

styles, of course, draw on vernacular resources, but supplement them in a variety of ways through the use of distinctive words, distinctive uses of morphology, and/or distinctive uses of syntactic or discourse resources. For example, the sentence in 18 below is in the vernacular style and the sentence in 19 is in a specialist style associated with an academic discipline (in this case, some form of biology). In each case, I list the basic information that each sentence packages into a single sentence.

18. Hornworms sure vary a lot in how well they grow

    18a. Hornworms vary a lot in (18b)

    18b. Hornworms grow how well

19. Hornworm growth displays significant variation

    19a. Hornworms grow

    19b. (19a) displays (19c-19d)

    19c. (19a) varies (19d)

    19d. (19c) is significant

The vernacular differs from the specialist version in several ways. First the basic predicates (in the BIS) used are different in part: “vary” and “grow” in the vernacular and “grow”, “display”, “vary”, and ”is significant” in the specialist version. “Display” and “significant” are Latinate words that are typical of more specialist styles. Second, the two predicates that the two versions

share—"vary" and "grow"—are in the specialist version turned into nouns ("growth" and "variation") and made arguments of other predicates ("growth" is the subject of "display" and "variation" is the object of "display").

18a says pretty much the same thing as 19c and 18b says pretty much the same thing as 19a—so these pieces of information are shared by the two varieties. The information in the specialist variety in 19d—"something is significant"—is conveyed in the vernacular by the adverb "a lot" modifying "vary" and the affective marker "sure" which modifies the whole sentence "Hornworms vary a lot in how well they grow". Of course, "sure … a lot" is not only less formal, it expresses the opinion of the speaker, while "significant" in "significant variation" is both more formal and expresses, not just the opinion of the speaker, but a standard held by a social group (a profession, in this case biologists or statisticians).

Note how in the specialist version the entity hornworms and the processes of varying and growing disappear. They are replaced by abstract things: hornworm growth, variation, and growth. This is typical of the distinction between vernacular styles and specialist styles of the sort in 19 above (academic styles of language).

In addition to asking why and how a given sentence packages its basic information as it does, we can, thus, too, ask an additional question: Why and how does a given sentence deviate from a vernacular style of language? Thus, we could ask: Why would anyone use a sentence like (19) rather than (20)?

An Example: Academic Language

Now I turn to use BIS to analyze a specific piece of academic language. My goal here is both to exemplify the use of this tool and to speak to the issue of whether and how such academic language is either functional or ideological. The paper I will deal with is "Physically Abused Children's Regulation of Attention in Response to Hostility" by Seth D. Pollak, Shira Vardi, Anna M. Putzer Bechner, and John J. Curtin, a paper which appeared in the journal *Child Development* (2005).

Before I turn to a small part of this paper, I need to tell you about the paper in general. Already this raises an interesting issue, since part of what I want to study here is how and why things are said (written) in a certain way and whether they can be said (written) in other ways—and why these other ways may have been avoided. So, I give a summary of the paper, well aware that to say it differently is not really to say the same thing.

The paper begins by asserting that the link between children experiencing physical abuse and thereafter demonstrating behavioral problems (e.g., withdrawal and aggression, attributing hostility to others, and displaying inappropriate affect and behavior) has already been well established in the research literature. However, the authors claim that "precise mechanisms" linking the two is not well understood. So, the paper seeks, not to argue for a link between abuse and behavioral problems (which is already known), but to get at the causal "mechanism" linking the two.

The authors propose that "attentional effects" may be the link between abuse and behavior problems. The idea is this: all young children have limited processing capacity and so can pay attention to only a limited number of stimuli at a time. This limited capacity causes the child to privilege and focus on some (salient) aspects of the environment over others. For physically abused children these salient features are things like threat and anger. Physically abused children may learn to overly attend to threatening cues, perhaps at the expense of other contextually relevant information, and may, in turn, have less resources available to regulate their emotional reposes to events that seem threatening to them, but, in reality, would not seem so threatening to children who had not been physically abused.

The sample of children studied consisted of 11 four and five-year-old children who had been physically abused by their parents and 22 non-abused children (as a control group). Parents gave informed consent after receiving information about the study (to me, at least, the notion of "informed consent" for children seems somewhat odd coming from parents who have admitted to abusing their children).

The researchers are experimental physiological psychologists, people who want to precisely measure physical reactions (things like heart rate and skin conductance). For them, emotions (e.g., fear) are signaled by such physical reactions and it is the reactions they measure directly, not the emotions. But, of course, they need to get people to react to stimuli in order to measure their reactions. In this study, they had the children engage with a task on a computer (which the children thought was the task they were there to engage in), while in the background the children heard what they thought was an angry argument between two adults. The researchers wanted to

know how the children—abused and non-abused—would react to (pay attention to) this background anger.

The researchers recorded a seven minute scripted conversation by two professional actors. The conversation started with the actors pretending to be two co-workers meeting and engaging in casual conversation. Then the two characters intensely argue. After that, there is a period of "silent unresolved anger during which one character abruptly leaves the room". Finally, there is a resolution in which the two characters apologize to each other. The conversation was presented by means of a compact disc player placed in a room adjacent to where the child was located. An opening in the wall connected the two rooms, so that the children could hear the argument, but not see that it was a recording and not real people. The children were, thus, meant to believe the argument was real, not recorded.

The task the children did on the computer involved pictures of different objects appearing at the center of a computer screen. The child was instructed to press the space bar in response to every picture except for a soccer ball. This task was meant to be a measure of attention, which might be disrupted to various degrees when the argument occurred..

Various physiological measurements where taken of the children's responses to the anger. For example, the children's emotional arousal was measured by electrodes on their skin that indexed their "skin conductance level". Skin conductance level reflects arousal through changes in the relative activity of the "eccrine sweat glands" (eccrine glands occur in, among other places, the palms of the hands). Increases in skin conductance level indicate increases in emotional arousal.

In order to get such measurements, a space heater was placed in the experiment room to facilitate the adequate release of sweat.

An Analysis: Part 1: BIS

Below I reprint the part of the paper on which I will base my analysis:

> The present study sought to clarify and extend previous work suggesting that physically abused children develop perceptual sensitivity to anger. First, we sought to further examine the ways in which physically abused children can regulate attentional processes when confronted with anger or threat. Second, because prior research suggested that physically abused children would be especially sensitive to anger, the anger-related stimuli presented to the children occurred in the background and were irrelevant to the child's purported task and not personally meaningful. This created a relatively conservative test of children's attentional regulation. The present data suggest that once anger was introduced, abused children maintained a state of anticipatory monitoring of the environment. In contrast, non-abused children were initially more aroused by the introduction of anger, but showed better recovery to baseline states once anger was resolved.

I will here just consider two sentences from this paragraph. Below I show the BIS for each. First, consider (20) below. Here I give the BIS only for part of the sentence, the part I have placed in brackets: "physically abused children can regulate attentional processes when confronted with anger or threat":

20. First, we sought to further examine the ways in which [physically abused children can regulate attentional processes when confronted with anger or threat].

physically abused children	=	1. someone (?) abuse children physically
can regulate	=	2. (1) can regulate (3-7):
attentional	=	3. (1) attend to (5-7)
processes	=	4. (1) process (3)
when confronted	=	5. someone (?) confront (1) with (6/7)
with anger	=	6. someone (?) get angry at someone (?)
or threat	=	7. someone (?) threaten someone (?)

"Physically abused children" is a phrase that encapsulates the information in the clause in line 1: "someone abuse their children physically". Who is this someone? This sentence and the passage from which it is taken is systematically ambiguous in a way typical of this type of scientific writing. When the authors say they want to "examine the ways in which physically abused children can …" are they talking about any and all physically abused children or the

specific children studied in this research, children who happened to be abused by their parents? Of course, they want to make a claim about any and all abused children based on these specific children and the ambiguity is, thus, functional.

"Can regulate" introduces another predicate "regulate". Its subject is the information in line 1 (which becomes the phrase "physically abused children" in the text); thus, I write (1) in its subject slot to yield "(1) can regulate (3-7)".

The object of "regulate" (what is being regulated) is all the information in lines 3 through 7, thus I write (3-7) in its object slot: "(1) can regulate (3-7)". What is being regulated (by the children)—the information given in lines 3 through 7—is quite complicated, indeed: The children are regulating how they mentally process (line 4) when they attend to (line 3) situations where they have been confronted (line 5) with someone getting angry at someone or threatening someone (lines 6 and 7). This is certainly a form of technical writing with a vengeance.

The verb "confronted" in the text is missing both its subject and object. The object must be inferred to be "physically abused children", the information in (1). However, what we should infer the subject to be is less clear. Who confronted the children with anger or threat? We could be talking about what the researchers did in exposing the children to the taped (but thought to be real) anger. Or we could be talking in general terms about any time anyone confronts abused children (these specific children? all abused children?) with anger or threat. Equally, in line 6 and line 7, it is not clear who is getting angry at whom or who is doing the threatening of whom: Is it the actors that made the tape or anyone who might display anger in front of an abused child?

Again, the authors want to draw a general conclusion based on what they did to the specific children in the study and so the ambiguity is, in this respect, functional.

Next, consider the sentence is (21) below:

21. The present data suggest that once anger was introduced abused children maintained a state of anticipatory monitoring of the environment

The present data suggest	=	1. the present data suggest (2-7)
that once anger	=	2. someone (= actor) gets angry at someone (= actor)
was introduced	=	3. someone (= researchers) introduce (2) to someone (= abused children)
abused children	=	4. someone (= parents) abuse children
maintained a state	=	5. someone (= abused children) maintain a state of (6-7)
of anticipatory	=	6. someone (= abused children) anticipate something (= threat/harm)
monitoring of the environment	=	7. someone (= abused children) monitor environment by (6)

So here "suggest" has as its object (what is being suggested) all the information in lines 2-7. The noun "anger" is related to the predicate "get angry at" and introduces the information in line 2. Since the authors used the noun and not the predicate, they did not

have to overtly mention the subject (who is getting angry) or object (who or what the anger is directed at). However, the reader can infer that the subject and object of "get angry at" are the actors who role-played anger at each other for the tape and who the children thought were real people. I note this inference by placing "actor" in parentheses.

Similarly, we can infer that it was the researchers (the authors of the paper) who introduced the situation of someone getting angry at someone else (line 2) to the abused children. Likewise in line 4 we can infer—from what the paper has told us—that the people who abused the children were their parents.

In lines 5-7, the state that the abused children are said to have maintained (see line 5) is very complicated and technical. The state is this: the abused children monitor the environment (line 7) by (engaging in the process of) anticipating something (line 6). What are they anticipating? This is, for me, the crucial question. Nothing in the text explicitly tells us what they are anticipating? The inference most readers will make, I believe—if they read deep enough into this technical prose—is that the children feel threatened and are anticipating harm or abuse. Of course, that is the hypothesis of the paper—that abused children will look for and anticipate threat where there is none in reality. But, while in reality there was none in this environment, there is no way the abused children could have known this, since they were not aware that the argument was on tape.

An Analysis: Part 2: Claims Based on the BIS

We have seen several ways in which this specialist prose is functional. And at a general level it is functional in the sense that as physiological psychologists these authors want to study and write about outward bodily behavioral effects (sweating, heart rate), rather than inner feelings or emotions. Their prose and their practices are well suited to do just that.

At the same time, this specialist prose allows and encourages the authors to evade any direct statement about *who did what to whom*. However, at the level of BIS and the inferences readers can make, it is apparent that the authors are evading (being allowed not to have to say directly) the information that *they threatened five year old children who they admit are particularly sensitive to and vulnerable to threats or anger*.

At the same time, this specialist language allows and encourages the authors, as well, to evade any direct statement about what the researchers did to the children *meant to the children*. The children's' emotions, feelings, fears are obscured and ignored in the authors' prose (and in their practices—academic prose and practices go hand in hand—that is what is meant by "functional"). Their prose and practices foreground outer bodily behaviorial effects at the expense of a focus on feelings and emotions. But at the level of BIS the reader can infer that *the children feel fear*.

Finally, in the authors' practice and prose, emotion is effaced as a causal mechanism to be replaced by "attentional effects" displayed or signaled by bodily behavioral effects (like sweating and heart rate). This is really a double displacement of emotion: an

emotion like fear is seen first in terms of cognitive processing mechanism ("attentional effects") and then these are signaled by or discovered through bodily mechanisms like sweating, which is what the researches pay attention to and write about. However, at the level of BIS these attentional effects amount to *young children anticipating harm and, thus, feeling fear*.

The evasion of what the researchers did to the children—something no one would approve of had it been said directly and in the vernacular as in "We threatened vulnerable five-year-olds"—is ideological (in this case, an attempt to evade a value-laden ethical issue). In this piece of academic writing, the functional and the ideological are "married at the hip". The function of the language is to allow researchers to distance themselves from the inner world so as to do a science based on the outer world of the body's reactions. In this particular case, that also allowed the researchers not to have to directly state what they had done in terms of what it meant to the children. What things mean is the domain of another academic area, namely discourse analysis. In that sense, discourse analysis stands in a "critical" relation to other forms of language. This does not mean, of course, that it is not itself open to critique (by discourse analysis applied to itself).

Nothing I have said in my analysis implies the researchers themselves believe they did anything unethical or immoral. My only claim is that when we move from BIS (which is closer to the vernacular, though not itself vernacular, thanks to technical vocabulary) something is added (namely, the functional ability of these academics to practice their specialist discipline) and something is lost (namely, a direct focus on what makes the

research ethically problematic to some others, some of whom are not specialists in the researchers' discipline and, perhaps, some of whom are, though I have tested that).

The authors of the paper I have discussed can, of course, say that I am an "outsider", thus, not competent to comment on their practices or prose. But, in my view, that response is ideological. It is my belief that, morally, all of us academics must account for any situations where we have used our technical prose to evade what, said in the vernacular, is clearly a violation of the "lifeworld" (that is, a violation of what we as everyday people take to be moral). I do not say the authors I have studied have no such account, only that they owe even those outside their field one.

Can I give empirical evidence for this principle that we academics (and others) must, at a moral level, acknowledge our responsibility to give an account for any situations where we have used our technical prose to evade what said in the vernacular is clearly a violation of the "lifeworld"? As I have pointed out in earlier work (Gee 1990, 1996), no I cannot. With a such a principle—one that I have argued in earlier work is a basic moral principle of both discourse analysis and human linguistic interaction (Gee 1990, 1996)—we reach the limits of our shared "form of life" (Wittgenstein 1958). Outside the principle—that is, denying it—"we don't know what to say" (Austin 1961) and must leave words and resort to actions in our own defense.

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