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ABSTRACT

A pilot study was conducted to measure comprehension of affective bits on "Sesame Street" in children ages three to five years. Subjects were shown bits extracted from previous programs relating to two affective areas, anger and pride, and comprehension questions were administered at the end of the viewing. The questions attempted to measure the subject's ability to label an affective state, to identify causes of an affective state, to predict plausible affective behavior, and to recall affective messages. Results showed that affective messages can be comprehended by children as young as three, but there were significant differences between the comprehension of bits dealing with anger and with pride. (EMH)

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Children's Television Workshop

DATE: January 22, 1974

TO: Sesame Street Research
CC:
FROM: Harry Lasker, Naomi Bernath

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SUBJECT: Status of Comprehension Study of Sesame Street Affect Bits

1.0 Introduction and Summary

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This report summarizes the findings of a small pilot study to measure comprehension of affective bits on "Sesame Street" in children ages three to five years. The study described here is one component of several related formative research studies on affect-related programming being conducted at the Center for Research in Children's Television, Harvard University. Because of the small sample used in this pilot study the findings reported here would best be verified with additional samples. Despite these shortcomings, this study leads to the following general conclusions (which are described in more detail in sections 5.0 - 10.0):

1. Bits dealing with anger and pride differ in their overall level of comprehension primarily in the area of labelling.
2. In the affect of anger, and in many areas relating to pride, affective messages relating to labelling appear to be comprehended by children as young as three years.
3. Attention and comprehension are not perfectly correlated for anger and pride bits. Pride bits tend to show high attention and low comprehension relative to anger bits.
4. There are systematic differences in production technique between anger and pride bits. These differences pertain to overall format (section 7.0), bit attributes (section 8.0), and type of message about the emotion (section 9.0).
5. Because of the above pattern, greater research and production attention should be paid to the internal format, attributes, and message strategies within affective bits and to research relating to the comprehension abilities in the affective area of children ages three-five.

2.0 Objectives.

The objective of this study was to measure comprehension of bits dealing with affect on "Sesame Street". Comprehension was

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to be measured in four general areas:

- (1) Labelling: The child's ability to label an affective state in a character.
- (2) Causal reasoning: The child's ability to identify general causes of a change in affect in a character.
- (3) Prediction: The child's ability to predict plausible behavior or feeling of the character in a bit, based on a knowledge of the character's affective states.
- (4) Messages about feelings: The child's ability to recall specific messages included in bits relating to affect.

3.0 Methodology

3.1 Treatment. Subjects ages three to five were shown bits relating to two affective areas: anger and pride. Children were shown whole bits and comprehension was tested at the end of each bit. The techniques of stopping the tape and tape replays were not used in this study. Furthermore, affective bits were shown out of context of the rest of the program of Sesame Street. Each child saw five consecutive bits pertaining to one emotional area. Comprehension questions were administered at the end of the viewing of each particular bit.

3.2 Strategy. The comprehension of children was measured at only one point in time. There was no attempt in this pilot study to measure change in comprehension over time as a result of viewing bits.

3.3 Measures. The probes used in this study were structured and based on verbal responses. Children were asked a series of questions about bits they viewed. The observations in this study were based entirely on the verbal responses of children to these questions. Because of the pilot nature of this study, no attempt was made to measure verbality of the children. To this extent, observations in this study inevitably will reflect both comprehension of bits and verbal ability of the child.

3.4 Procedure. Children were interviewed one at a time on two separate occasions. On each occasion, children saw five bits relating to either the emotion of pride or anger. At the end of each bit, children were asked four pairs of questions or a total of forty questions in each testing session. Each child was later shown a second set of five bits pertaining to the other emotional area. Responses of the children were tape-recorded and later scored. Scoring was based on the following general distinctions:
 0 = no correct response or no response at all; + = a partially correct response; ++ = a totally correct response.

3.5 Sample. Subjects for the study were drawn from two day care centers. One was lower middle class, the other upper middle class. Fifteen subjects were used from each center. While the children in the sample reported here do adequately represent the age of the target audience of Sesame Street (2 years 6 months - 5 years 9 months), the sample is of a higher SES and has a lower representation of minorities than the Sesame Street target audience. This study should be replicated on a lower class inner-city sample. To the extent that error is introduced by the sample being of a higher SES background, it is likely that estimates of the "floor" abilities in section 5 would be biased downwards by sampling procedure.

4.0 Affect Bits. The pride and anger bits selected represented most seasons of Sesame Street, although sampling was heavier in recent years. Therefore, bits chosen disproportionately represent recent productions of Sesame Street. Table 1 presents a list of the bits used in this study. Those bits which are starred were shown more frequently to children. However, observations about the relative formats of pride and anger pieces mentioned in sections 6 through 9 are based on assessments of all of the bits mentioned in Table 1. For the analysis of these sections, it should be borne in mind that the bits in this study do not represent a perfectly random sampling of all bits in the Sesame Street library relating to pride and anger.

5.0 Comprehension patterns by age. Comprehension questions related to nine different types of operations, many of which were closely related to each other:

- (1) Labelling: the ability of the child to choose a correct affective label from among several labels offered.
- (2) Labelling: the ability of the child when presented with two affective labels to choose the label that correctly describes how a character in a bit felt.
- (3) Labelling: the ability of the child to recall and label how a particular character felt at a particular moment in the story.
- (4) Labelling: the ability to label an affective state in another language (Spanish)
- (5) Recall: the ability of the child to recall and to label his own affective states (the ability to identify a particular time and incident when he felt proud or angry).
- (6) Perception of Similarity: the ability of the child to recognize similarity in the affective states of different heroes in different stories.
- (7) Causes of Feelings: the ability of the child to identify general reasons or causes of particular affective states in heroes in stories.

Table 1Selected Pride and Anger Bits from Sesame StreetPride Bits:

<u>Title</u>	<u>Time (approx.)</u>
Baby Cookie	:57
*The King's Problem	3:48
*Song: Everyone Makes Mistakes (Big Bird)	1:54
*Song: Me (live action)	1:18
Song: Me (Eng. - Span.)	1:45
*Baby Steps	1:29
Getting Dressed	3:58
Unhappy Empire	3:59
Song: Believe in Yourself	2:33
You Can Clean Almost Anything (live action)	2:44
Roosevelt Franklin Spells His Name	:54
*Struggle (live action)	3:10
Proud Song	1:28
Song: Swinging	1:26
Song: My Name	2:44
Song: Special	1:49
Roosevelt Franklin: Days of the Week	--
Everybody's Different (Ernie)	2:29
Roosevelt Franklin: Great People	3:04

• Anger Bits:

<u>Title</u>	<u>Time (approx.)</u>
*Oscar/Maria: Enojada (Angry)	2:00
*Susan's Late	2:27
*Mad Song	2:14
*Oscar Gets Angry	:50
Bert/Ernie: Beach bully	3:30
*Bert Gets Angry	2:44
Maria's Mad	:57
Mad/Happy Face (Bert/David, a kid)	:45
Film: Anger	:17
*Sam Blows His Top	2:00
Lines 1 (abstract)	--

(8) Predicting Behavior: the ability of the child to predict behavior or feelings of a hero in a story.

(9) Recall of message: the ability of the child to recall and restate a specific message about feelings contained within a bit.

Each bit shown to children has probes relating to these nine areas or operations. As mentioned above, children's responses were tape-recorded and scored in terms of three general categories: no response or totally incorrect response, partially correct response, or completely correct response. Children's ability to answer particular types of questions correctly could be traced across ages. By breaking the sample into 6 month age groupings, it was possible to determine a "floor" point for each of the above nine operations, a point at which at least half of the children in the age category could give a partially correct response to the question. Operations could then be ranked in terms of the age level at which the ability to answer the question first began to consistently appear. Table 2 summarizes the ranking of the operations by age and identifies the floor ages at which the ability appears.

Labelling abilities appear first, followed by the capacity to recall one's own affective states, the ability to recognize similarity between affective states of different characters, the ability to identify causes of affective states, and finally the ability to predict behavior of characters in stories. Within the sample used in this study, the capacity to label affective states generally emerges in 3 year olds, and is shown in expanded form by the older children. The ability to recall one's own affective state at another point in time and to label in another language appears roughly in the 4 year olds for the first time. Ability to recognize similarities in affective states of different characters, to identify general causes of affective states, and to predict behavior shows variable patterns and is different for pride and anger pieces. Three year olds can identify the causes of anger and four year olds can predict behavior on the basis of anger. Contrastingly, however, only five year olds can identify causes of pride and can accurately predict behavior based on feelings of pride.

While operations 1 through 6 appear quite similar for anger and pride pieces, operations 3 and 5 do show some differences between pride and anger. Operation 3, the ability to recall and label how a particular character felt at a particular moment in the story was quite variable for children ages 3½ to 5. Similarly, the ability to label pride in another language was variable.

Generally, Table 2 shows the development of increasingly complex comprehension abilities in children ages 3 to 5, and indicates that for the more complex operations, anger is more highly comprehended than the emotion of pride. Whether these differences are due to the differences in developmental complexity of cognitive abilities needed to comprehend pride as opposed to anger is not clear. There is the distinct possibility that emotions differ in the child's ability to grasp and understand them, and that certain emotions will be cognitively "within reach" at earlier ages. Anger would seem to be a universally



Table 2Comprehension Patterns in Selected Operations by Age
for Selected Pride and Anger Bits on Sesame Street

<u>Operation</u> (ranked by age)	<u>Age</u> (in years & months)						
	<u>2.6-</u> <u>2.11</u>	<u>3.0-</u> <u>3.5</u>	<u>3.6-</u> <u>3.11</u>	<u>4.0-</u> <u>4.5</u>	<u>4.6-</u> <u>4.11</u>	<u>5.0-</u> <u>5.5</u>	<u>5.6-</u> <u>5.11</u>
Labelling - 1		A	A	A	A	A	A
		P	P	P	P	P	P
Labelling - 2		A	A	A	A	A	A
			P	P	P	P	P
Labelling - 3			A	A	A	A	A
					(P)	P	P
Recall				A	A	A	A
						P	P
Labelling - 4					A	A	A
						P	P
Perception of Similarity					A	A	A
						P	P
"Causes" of feelings		(A)	A	A	A	A	A
						P	P
Predicting Behavior				(A)	A	A	A
							(P)

A = comprehension of Anger

P = comprehension of Pride

experienced emotion for children, an affect with simple labels and clear physical cues which can be associated with it, ranging from facial to bodily cues. It is an emotion with which parents are apt to show more concern to the child. On the other hand, pride's causes are more diverse, its physiological correlates more subtle, parental concern about it more distant, and the cognitive pre-requisites for the child to understand pride in himself perhaps more complex. Despite the strong likelihood that anger and pride represent affects of different developmental complexity, differences in levels of comprehension might not be solely attributable to these possibilities alone as we shall see in sections 6 through 9.

Comprehension of the specific message varies considerably within pride and anger. Comprehension would appear to be more associated with the setting of the message and its degree of reinforcement within the bit rather than with the particular emotion involved.

Thus, while anger is the better-comprehended emotion, messages about anger contained in the mad song were not well comprehended. This is probably due to the fact that the verbal messages in that song are largely inaudible. There are conflicts with other bit elements such as the visual track and the sound effects track which tend to decrease the signal/noise ratio. Many pride pieces have effectively transmitted messages and these appear to be better understood when the message is (a) simple, (b) clearly stated, (c) repeated, (d) reinforced by a strong plot which illustrates the message, or by a refrain in a song or the visual representation of the message.

6.0 Comprehension vs. Attention. Despite the fact that anger bits measured somewhat higher in terms of comprehension in the eight areas listed in Table 2, attention was higher to pride pieces. It has been a strong assumption in Workshop research that high attention invariably will be linked with high levels of comprehension. While the patterns observed here do not cast serious doubt on this overall position, they do provide interesting grounds for more detailed thought about the relationship between attention and comprehension.

Attention of children to bits was measured in a gross way without the more detailed distractor graph methodology. Interviewers rated the attention of children to bits as high, medium or low, and overall ranks for the bits shown showed that, although pride pieces were longer in average length, they produced higher levels of attention.

These unexpected patterns led us to more consistently examine the relative differences between pride and anger pieces which might explain these patterns.

Sections 7 through 9 describe systematic differences between pride and anger pieces that were uncovered in this analysis.

7.0 Format Differences. Within the bits used in this study there are important differences in the overall format between anger bits and those relating to pride.

Anger formats: Figure 1 illustrates the general structure to anger bits. The bit usually begins with a situation which creates an anger reaction in a central character. The emotion is then formally labelled as part of the interaction of characters. Then, the last part of the bit usually relates to a resolution of the feelings of anger. It is often related to a particular message about the handling of anger, such as "If you're angry, count to ten." This type of format has distinct phases and components.

Pride formats: The general type of format used in pride bits differs substantially. Unlike anger bits, pride bits do not seem to have any clear sequence of steps within them or characteristic sub-components. Generally, the pride bits are built on one strong line that runs throughout the piece: usually built around activity, music or plot.

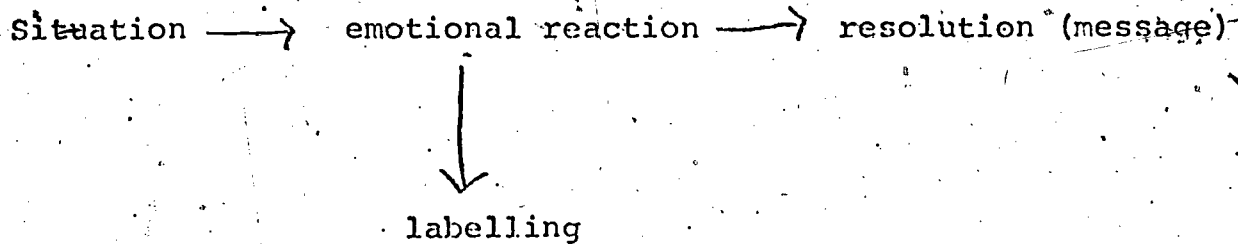
Another important type of strong line that integrates pride pieces is a visual sequence in which a child is attempting to accomplish something and has increasing degrees of success in an activity as the bit goes on. Musical numbers often provide the central element around which a bit is built. Finally, in some cases the strong central line of the bit is a well-integrated plot which only stresses a pride message in the very last moments of the story. Figure 1 gives a visual representation of this type of format. In the first case where a child is trying to accomplish something and with increasing degrees of success, there is usually quick cuts between live action film segments often involving many characters, other animals, or other situations which are parallel to what the child is attempting to accomplish. The pride message is closely associated in these bits with theme of competence in accomplishing what to a young child would be a fairly complicated task. The second type of pride pieces is built around a strong musical line, usually a song, which is embellished with a message usually repeated in a refrain. Often these musical refrains are illustrated with live action film footage. In both cases, a strong central line is embellished and illustrated with musical and visual materials.

Whether by necessity imposed by the nature of the feeling which is the subject of the bit, or by production habit most anger bits follow the first type of format and most pride pieces follow the second. As we shall see in following sections, these formats in turn are related to other types of attributes which could explain variations in attention levels. Furthermore, particular formats lend themselves to specific types of messages about feelings. It is unclear whether an anger piece could be done with a "pride format" and vice versa. Would reversing the format have any impact on the quality of the piece produced? These types of issues are addressed in the last section of this report. What is salient here is that by being forced to analyze differences between pride and anger pieces, we are being pushed toward a deeper understanding of the types of program material we have been producing. A deeper analysis of the difference between pride and anger pieces may give us clues to differential effectiveness between types of bits and suggest ways of increasing the effectiveness of programming in the affective area.

Figure I

Visual Representation of Differences in Selected Pride and Anger Bits on Sesame Street

Anger Format

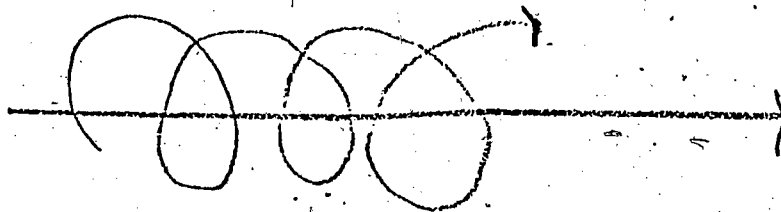


Pride Format

Illustration:

(other characters) (message)

Strong 'line':



* music

* attempts at competence (→ gradual success)

* plot

8.0 Attribute Differences. Attention studies conducted over several years at the Children's Television Workshop show that bits in Sesame Street differ in the overall level of attention which they evoke. Fluctuation in attention can be shown to be associated with particular attributes or qualities of bits. With increasing numbers of studies we have developed a rather extended list of qualities in particular bits which, for different samples, appear to be associated with attention differences. Drawing on lists of attributes developed in several Sesame Street related studies, it is possible to compare pride and anger pieces on several attribute dimensions to search for consistent differences. Table III is a summary of general patterns of attribute differences which appeared in comparing pride pieces with anger pieces. The following list summarizes some of these distinctions:

Curriculum Goal Type: Pride pieces tend to center on a particular message usually contained within a song. They also tend to have the goal of creating a particular affective state in the child, i.e. making him feel more confident, proud or to raise his self-esteem. Anger pieces on the contrary are substantially focused around labelling of the emotion and only on occasion are associated with messages about anger.

Clarity of Message: The message in pride pieces is often visually reinforced. Children and other animals are depicted doing something for which they feel proud. Similarly, if the message is stated, it's stated rather clearly in the verbal refrain of a song and is embellished upon with several examples. In anger pieces to the contrary, the "verbal noise" surrounding a message is higher. Often a message about anger is embedded in dialogue between characters and is not otherwise reinforced or identified with music or other visual cues.

Goal Format Type: As explained in Section 7, pride pieces are integrated with a strong story line, visual line, or music line. Anger pieces tend to be compartmentalized into the characteristic plot format with particular identifiable steps in the format.

Visual Effects: Pride pieces employ more frequent use of special visual effects such as pixillation, matting, double images, etc.

Visual Track: Pride pieces make more use of live action in a natural setting. Anger pieces tend to be studio based.

Characters: Pride pieces employ unique, unfamiliar characters more frequently. These are usually children who have never been seen before on the program or new muppets created particularly for the piece in question. Anger pieces, on the other hand, almost invariably employ well known characters who are completely familiar to the child.

Central characters in pride pieces are usually children or animals. Central characters in anger pieces are usually adults or well established street characters such as Oscar and Big Bird.



Table III

Attribute Differences Between Selected Pride & Anger Bits on
Sesame Street

<u>Attribute</u>	<u>Bit Type</u>	
	<u>Pride</u>	<u>Anger</u>
Curriculum Goal Type	*message focus *creation of affective state	*labelling *(message)
Clarity of Message	*message often visual (seeing child do it) *(message fairly clearly stated & embellished)	*verbal noise is high
Characters	*unfamiliar characters	*familiar characters
Action	*child emphasis *natural action *muppets	*adults *scripted *known street muppets (stereotyped)
Treatment of Affect	*affect shown implicitly *focus on build-up of emotion	*shown explicitly *focus on 'denouement'
Goal Format Type	*'pride format' emphasis (see section 7.0)	*'anger format' emphasis
Visual	*special effects *natural setting	*studio based
Dominant Tone	+ *happy, jolly	*conflicted, high anxiety
Track Focus	*music *visual (live action special effects)	*verbal
Pace	*somewhat faster	
Bit Duration	*longer (over 2:00)	*shorter (under 2:00)
Direction of Speech	*to viewer (at times)	*between actors
Music	*central strong melody strong rhythm refrain structure	*none
Sound Track	*group voices child voice-over	*no group voices *no child voice-over

* = gain in attention shown in other studies

+ = suspected gains

Treatment of Affect: The emotion of pride is usually shown implicitly and is not specifically labelled in pride pieces. Anger is usually shown explicitly (physically) and is explicitly labelled.

Pride pieces tend to focus on the building up of the emotion of pride. Anger pieces tend to be concentrated on the denouement or on the resolution of the anger feeling.

Action: Action in many pride pieces tend to be natural, live action spontaneously filmed footage. Action in anger pieces tends to be concocted, scripted plots in which central characters are acting.

Dominant Tone: Inevitably pride pieces tend to have a happy, jolly dominant tone which tends to sweep the child along with it. Not surprisingly anger pieces have a conflict-laden tone and probably induce higher levels of anxiety because of confrontation between major characters.

Duration: Pride pieces are relatively long, exceeding an average of two minutes in length. Anger pieces are shorter following below the two-minute mark.

Direction of Speech: Pride pieces are more frequently spoken directly to the viewer. All dialogue in anger pieces is between actors in the bit.

Pace: Pride pieces are somewhat faster in pace than anger pieces.

Visual Movement on Screen: Pride pieces involve faster, larger visual movements on the screen.

Music: Music is central in many pride pieces and frequently used. Furthermore, the music has certain effects such as strong rhythmic quality, a strong refrain, easily identified lyrics and a melodic quality which are characteristic of high levels of attention. Anger pieces make little or no use of music.

Sound Technique: Pride pieces involve voices of large numbers of actors simultaneously, group voices which are associated with high attention. Furthermore, many of the voice-overs in pride pieces are children's voices. Anger pieces do not appear to make use of children voices.

In Table III for each of these attributes an asterisk has been placed next to the qualities which have been shown in other studies to be associated with higher levels of attention. Table III clearly shows that many of the attributes associated with high levels of attention are characteristically found in pride pieces. This fact, coupled with the overall format of pride pieces, may be the reason that pride pieces have high levels of attention while showing somewhat lower levels of comprehension.

9.0 Message Types. In examining the distinctions between pride and anger pieces a further group of differences became apparent above and beyond differences in format and general bit attributes. This final set of differences relates to the type of message carried in the bit. Clearly the area of affect is complex and there are a large number of distinct approaches to the subject that can be taken. Specifically, there appear to be several different types of messages about feelings that could be transmitted in affective bits to increase children's comprehension of a particular emotion. There are as follows:

1. Labelling: Increasing the child's ability to identify particular affective states with a particular label. Labelling has been among the first and most central goals in the affective area in Sesame Street. Many bits are specifically centered around messages relating to labelling. Bits with this type of message usually focus on cues from faces, voices, gesture, and other behavior which can be indicative of a particular affective state.
2. Reasoning about feelings: Messages relating to the causes of particular feelings. These types of messages pertain directly to what made particular characters feel a particular way. Thus in anger pieces, for example, Maria may explain to Oscar what made her get angry.
3. Modelling expression: Messages focusing on socially desirable ways of expressing feeling. An example in the bits in this study would be one message how to cope with anger: count to ten when you're angry.
4. Creating a feeling: Messages focusing on creating a particular affective state in the child as he views the bit. Examples are numerous here from pride pieces and they include messages such as: "there's nobody in the world like you; being small can be very important; you're special because you're you; everything I am is me; only I have my name; believe in yourself".
5. Awareness/understanding: Messages directing a child's attention to a particular emotion or explaining how an emotion "works". An example of this type of message is Gordon telling Big Bird that just because he's angry at Maria doesn't mean that he doesn't love her.
6. Reinforcing behavior: Messages stressing how you might feel if you do something in the future. Again, examples are numerous in the area of pride. Several of the pieces stress that if you feel proud if you can walk upstairs, tie your shoe, wash yourself, spell your name, swing a swing, know the days of the week, ride a bike, etc. Messages of this type identify behavior in the world, which when a child encounters it, or succeeds in doing something, will remind him that he can feel good about it in a particular way.

Table IV summarizes these general types of messages and gives examples of them drawn from the pieces involved in this study. Several points seem worth mentioning here. (1) Pride and anger pieces seem to transmit different types of messages. They seem to approach the issue of emotion from different message strategies and, therefore,

Table IV

Message Strategies by Type of Affect Bit

<u>Message Type</u>	<u>Type of Bits</u>	
	<u>Anger</u>	<u>Pride</u>
1. Labelling	+ + *	
2. Reasoning	+ + *	
3. Modelling	+	
4. Creating a feeling		+ +
5. Awareness/ Understanding	(+)	+ +
6. Reinforcing Behavior		+

+ = occasionally + + = frequently

* = tapped by comprehension measures, in this study

they treat affect differently. Anger pieces tend to focus on labelling of the feeling, reasoning about what caused the feeling, modelling expression of feelings, and to a lesser extent, an awareness/understanding of how feelings work. Pride pieces, on the contrary, center heavily on creating a particular affective state, reinforcing behavior, and awareness of feelings. Again, the important issue for research and production is to determine whether these differences are inevitably related to the type of affect in question or represent habits of writing which might be changed to produce both learning from the bits. (2) Particular messages may nest conveniently with particular kinds of formats. The anger format may be more well-suited for labelling, reasoning, and modelling expression of behavior, while the pride format may be more well suited for the types of messages that seem to be contained in pride pieces. (3) The comprehension methodology in this study is restricted to only two types of messages. Comprehension in other areas may be good but we have limited ways of measuring success currently.

10.0 Conclusions and Implications.

10.1 General Conclusions. 1. Children of different ages within the target audience comprehend different elements within affect pieces. Some aspects of labelling are comprehended by 3 year olds while other aspects of reasoning about feelings only by 5 year olds.

2. Even within the simple area of labelling, there are different levels of complexity which are mastered by children of different ages.

3. The emotions of anger and pride seem to be understood differentially in the areas of comprehension probed in this study. Anger appears to be more readily comprehended by younger children. This may be because of several possible reasons among which are the possibilities that, (1) pride is a more complex emotion developmentally; (2) children have more conscious daily experience with anger than with pride; or (3) pride pieces actually represent a different type of learning treatment in which labelling and causal reasoning about affect is stressed less than in anger pieces.

4. Comprehension of message varies considerably within pride and anger pieces and appears to be more associated with the setting of the message and its degree of reinforcement within the bit than with the emotion involved.

5. The explicit goal in the Sesame Street curriculum of teaching children to label emotions seems within the limitations of this study, to have been met in the area of anger. If this proves to be a general finding, it opens the issue of whether other more complex goals should be undertaken in regards to emotions which appear to be relatively easily understood by younger children.

6. Bits dealing with particular types of emotion tend to differ in overall level of attention. Attention is high for pride pieces despite their relatively lower level of comprehension. It is impossible

from this study to determine the reasons for disparities in attention and comprehension. But it is possible that these differences can be due to consistent distinctions in overall format, bit attributes, and types of messages contained within anger and pride pieces.

10.2 Production implications. There appear to be consistent overall differences in the production format of anger and pride pieces. A possible implication is that a conscious attempt should be made to interchange the format, attribute elements, and messages of these pieces to try to achieve a more effective educational treatment of each emotion. In the production area, several questions would seem to be pertinent. Some of them are as follows:

- (1) Are the differences in format by emotion inevitable or the simple accumulation of habit in the writing staff, or combination of the two?
- (2) Are there other formats which seem peculiar to other emotional areas dealt with on Sesame Street?
- (3) How do formats nest with message strategies described in Section 9?
- (4) Are there optimal formats for particular message strategies?
- (5) Can formats and attribute elements be changed consciously by writers and production staff to achieve higher educational effectiveness of bits?
- (6) Can elements of high attention be more successfully combined with message to produce higher learning outcomes?
- (7) Do message strategies interact to produce learning outcomes? Is there an optimal mix of formats and message strategies which will deepen and expand comprehension of a particular affective area?
- (8) Do different formats have age specific effectiveness with younger children?

10.3 Research implications: There seem to be several implications of the kinds of study for future research. (1) The current studies should be replicated with a larger sample of inner city target age children to insure that the floor levels that have been established here are not too low. (2) There is a need for methodology to measure all six message types described in Section 9 with the type of methodology used in this study involving structured questions which require verbal responses, we can only begin to assess messages that deal with labelling and with reasoning about feelings. Other message types would seem to call for their own peculiar methodologies. For example, the modelling of behavior would call for a nonstructured observation of behavior which is currently being used by other formative studies on the impact of Sesame Street. Some of the other message strategies listed in Section 9 would seem to call for the development of particular methods which currently do not exist. It is entirely possible

that Sesame Street is having a more substantial impact in the affective area than we are capable of measuring simply for want of a methodology in certain areas. It should also be noted here that one of the most central purposes of Sesame Street from its initiation has been to increase the self-esteem of the child. Yet this over-riding goal has seemed to defy measurement. As our understanding of the affective impact of the program unfolds, it is essential that we turn more attention to the more problematic areas of measurement. (3) Goals in the affective area are stated in only general terms relating often to broad and simple functions such as labelling. It would appear that a rethinking of the goals in the affective area is in order, with two major considerations to be kept in mind.

a. Affect goals might be extended beyond the simple process of labelling, at least with emotions like anger.

b. Labelling, itself, can be a somewhat complex process and might be stated more precisely in the curriculum.

(4) Goals relating to message types 3 through 6 are not really explicitly included in the curriculum. Perhaps attempts should be made to make them more specific and therefore more measurable.

(5) Other affective material in the Sesame Street library should be scanned more carefully for distinctions in format, attributes, and message types along the lines laid out in sections 7, 8, and 9 in this report. It is entirely possible we may discover further the difference in production technique that we have hitherto been unaware of, and which we might use to deepen our understanding about how to program effectively in the affective area. (6) There's a need to establish more clearly within the target audiences the "floors and ceilings" of abilities in particular areas. In general, these floor capacities would give us an age specific "map" of the capacities of children to comprehend and deal with particular emotions. It might show the differential unfolding of cognitive and coping capacities related to particular emotions as children get older. Specifically, as we have seen here, anger may be a developmentally simpler emotion in certain operational areas to pride. Greater age specific enumeration of comprehension of emotional issues would provide substantial assistance in expanding program goals in the affect area and in developing more effective program formats to teach these goals.