Focusing on gender issues in the visual text, this paper describes one stage of a post structural analysis of "Square One TV" (SOTV), a program originally designed to provide instruction in mathematics for 8- to 12-year-old viewers which now emphasizes changing their attitudes toward mathematics. Post structural textual analysis was used to uncover the path by which sexism and racism were unwittingly enfolded in SOTV, which has borrowed the structure of 1980s commercial television programs. Consecutive programs were sampled during two summer weeks. The team then formulated focus questions about messages surrounding gender, segments in which these messages appeared were located, and the specific formats were identified. Segments were reviewed to identify visual codes within the format, codes of similar formats on broadcast TV were identified, and relationships between codes on broadcast TV and SOTV were drawn. The analysis showed that SOTV programs incorporated sexism or racism in 20% to 40% of each program, and segments selected for the study included examples of both blatant and subtle sexism. Patterns found in biased segments were also found to be clearly present on current day broadcast television, although some sitcoms and ads use ironic distancing to present sexist materials. Although children may be sophisticated viewers of television, they are hardly ironic distancers and the pace of SOTV almost guarantees that they only have time to process the dominant message. Even if children were ironic distancers, such distancing from patently sexist and racist discoursers works as an ethical sleight of hand for the practice of sexism and racism. (8 references) (BBM)
Title:
Square One Television and Gender

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Square One TV is an informal instructional mathematics program broadcast daily by PBS for eight to twelve year olds. Developed two years ago by the Children's Television Workshop (CTW), it aims to change viewers' attitudes toward problem solving and to show the usefulness of math in daily life. Although the program was created to help U.S. students "catch up" to their counterparts in other countries, CTW designers decided, at some point in time, not to teach children math, but to change their attitudes. It is clear, then, that the program is affective in nature and only secondarily cognitive.

Bias

Square One TV is broadcast daily for 30 minutes after school and after the screening of Sesame Street. Its format is hybridized. It borrows the structure and conventions of 1980s commercial television programs such as MTV, Saturday Night Live, game shows (particularly Wheel of Fortune), police dramas and children's cartoons (particularly male superhero shows). Additionally, it parodies Sesame Street, 1970s comedies, such as Laugh In, and
classic detective films of the 1940s (particularly those with Humphrey Bogart).

In a typical *Square One TV* program (#162), 8 to 12-year-old viewers were presented with the following audio or visual sequences at the times indicated.

---45 sec.  The Spanish language is parodied with "Tierra del Freezo" in the visual track.

---47 sec.- 7 min.18 sec.  The Norwegian language and cultural habits are parodied in a sequence about "Vikings."

---8 min. 33 sec.- 11 min. 7 sec.  The audio track of an MTV-like song delivered by a young man includes, *that chick, Maria, ...... like an apple she is rotten to the core.* The visual track of this song includes nurses in short revealing white uniforms ministering to the young man by dancing around him.

Approximately one third of a program whose objective is to change student attitudes toward mathematics is either blatantly sexist or racist. Further analysis of *Square One TV* has indicated that the percentage of bias in all programs sampled varies from 20% to 40%.
Project

This paper will describe one stage of a post structural analysis of Square One TV focusing on gender issues in the visual text. At first glance, it is difficult to understand how CTW, with twenty years of sensitive children's programming to its credit, could produce such a biased program. Square One TV design documents certainly contain no intent to be sexist or racist. Early designers, in fact, are surprised that the program bias exists. Yet, a decision to borrow the structure of 1980s commercial television programs is not a neutral one. Since television programs, like other cultural forms, encode meaning in their structure, they carry with them paradigmatic meaning which has grown up around the use of a particular format. Post structural textual analysis has the power to uncover the path by which sexism and racism were unwittingly enfolded in Square One TV.

The post structural reader theory which we are employing to analyze Square One TV is reception theory, a German social reader theory practiced by Jauss (1982), Ingarden (1973), Iser (1978) and other textual analysts. (We will also apply this to Sesame Street.) It has the uncanny ability to account for transformations and history, an ability that is glaringly lacking in deconstruction. This theory allows us to consider the relationships among viewers, designers and the TV text of Square One TV.

The TV text itself is analyzed for codes or syntax patterns emerging from the use of such structural elements as frame, lighting, camera angle, shots, shot transitions and scenes. Codes are traced to their domain of origin, since TV codes are seldom original, and examined for paradigmatic meaning. Unlike other post structuralists, Jauss (1982) does not jettison semiotics when investigating the relationship between reader and text. He believes that the text continues to expand the "horizon of expectations" of readers and,
conversely, that their readings continually act on the text to change the parameters of its meaning.

*Square One TV* viewers will first be interviewed and using the results of those interviews, we will survey a larger audience. Since current educational tests to measure affect are based on psychological theories of motivation and/or learning, they ignore the social formation of knowledge and, consequently, the presence of communal readings. (Since CTW producers have declared this program an affective one, it precludes math educators from testing for cognitive gains and excuses CTW from educational accountability.) Affect should be assessed in some way. Jauss (1982) provides us with a description of modalities of identification, such as associative, admiring, sympathetic, etc. and receptive dispositions, such as transfer, admiration, pity, etc. Our interviews and surveys will be based on Jauss' concepts of reception.

Additionally, *Square One TV* design documents will be examined and, if cooperative, designers interviewed. Relations between and among these three sources will be explored.

Again, this essay will describe one stage of the larger study. It will investigate the program itself, *Square One TV (SOTV)*, for issues relating to gender. Subsequent reports will be written about the relationship between and among the text, the viewers and the sources of production. It is not surprising that commercial television culture leached into a supposedly benign program designed for 8 to 12-year-olds. It is sad that it has and quite difficult to explain. We believe the analytical tool presented here can trace the process of that cultural path.
PROGRAM DESCRIPTION

The three hallmarks of post modern texts are fractured narratives, fragmented reader subjectivities and dependence, in some way, on high technology. (Nichols, 1988) After initial viewing, one might call *Square One TV* the quintessential post modern children's program, since it employs the latest TV technology to create fractured narratives and messages which, in turn, fragment the subject positions of the viewers. To capture the attention of children watching television after school, information about mathematics is incorporated in 1970s and 80s broadcast television formats and presented in segments of approximately 45 seconds to three minutes.

**Reading or Viewing**

Since television is a communication medium, it is subject to rules governing the sending and receiving of messages. Like any communication medium, it has its own language and grammar. That grammar is, however, renegotiated in daily practice, just as meaning is slowly renegotiated in the use of any language. As the signs and symbols of television are patterned in daily use, codes accrue. Meaning is created when viewers interact with or read television codes which are familiar to them. Codes are usually format specific, such as those specific patterns and conventions which grow up around the production of talk shows, news broadcasts, or sports programs. Viewers becomes familiar with format codes and with the way messages are created within a format. They, consequently, have expectations for understanding, talk shows, news broadcasts or sports programs. A viewer's "horizon of expectations" (Jauss 1982) is pushed by an innovator within one format, such as David Letterman
or Roseanne Barr. These performers break the codes or conventions of the current format and begin to redefine it.

Fractured Messages

One post modern technique, particularly visible in architecture, novels and popular media, such as television, is the mixing of forms. Two innovative areas of broadcast television which specialize in mixing formats are commercials and MTV. Within one segment of either of these, the viewer may be offered dramatic narrative, demonstration, comedy skits, animation, documentary or other formats. When forms are mixed numerous things happen to both the message which is being constructed and the viewer who is interpreting that message. If a plot is variously presented in dramatic narrative, documentary and instructional forms, the story is totally fragmented. Such fragmentation of narrative has been used to best effect by some post modern novelists such as Italo Calvino and Peter Handke, but the world of television appears to invite this fragmentation. Square One TV has approximately 20 formats which it incorporates and it may include 14 to 16 of them within a 30 minute program. Most of the formats are broadcast television formats or filtered through broadcast television formats. Some of them are summarized in Figure 1 (see Figure 1). Program segments run approximately 45 sec to 3 min. and indeed offer fractured messages. The structure of SOTV, furthermore, consists of and only of broadcast television forms. It is as if the designers conceived of television as the whole culture of the child. They use television as one large cultural text which can only reflect itself. It is true that media and communication technologies are so vast and powerful, that our
culture is primarily a culture of images or representations. But the producers of SOTV took this notion too far when they decided to awaken students' interest in math by reference only to the world of television. These formats incorporate meaning in their structure and whether they are employed in their original programs or adopted as part of SOTV, they use the same codes and conventions, the same visual grammar.

Reading Positions

As viewers try to make sense of messages being transmitted by any television program, they rely upon familiar visual codes to interpret or create meaning from what they see. Reader theorists would say that these viewers are the subjects of their own interpretations or meaning. (Tompkins, 1980) They do, however, rely upon the social and cultural meanings of visual codes being employed in these programs. If they care to interpret messages as they are constructed, they are reading "with the program" or accepting the dominant message. If they read against the program or "against the grain," they may reinterpret messages in light of codes which have been established in some subculture such as gays and lesbians (Ellsworth, 1988) or high school students (De Vaney, 1987). Gays reappropriate dominant messages in some elaborate Hollywood musicals, for their own means. High school students read the films of John Hughes differently than adults, because they are privy to and help establish the codes of teenage communication in their everyday lives. But what about young TV viewers watching SOTV after school? They are indeed sophisticated television viewers and can switch from format to format with a speed and facility that would astonish most of us, (note the initial popularity of MTV), but while they are adjusting to formats and switching codes, they are probably not reading "against
the grain." They are simply making sense of the dominant message as it is presented. This is, most likely, part of the aim of SOTV producers, namely, to give audiences short doses of mathematics and hold their attention by switching formats. Viewers are, in other words, offered an invitation (Ellsworth 1988) to accept or buy the dominant message offered in each format.

If viewers are the subjects of their interpretations, they occupy what is called subject positions in relation to each interpretation. Since codes are format specific and messages are constructed by codes, the presentation of many formats in SOTV fractures the subjectivity of the viewers. It offers them a vast and, perhaps, confusing range of subject positions. Just what types of invitations are offered to viewers of these vacillating formats? What are the subject positions these children are being asked to occupy? This analysis hopes to answer some of these questions.

Method

As indicated above, the textual analysis of SOTV is part of a larger project designed to investigate the way viewers make sense of and, consequently, learn from Sesame Street and SOTV. The method employed in this larger project is borrowed from a specific reader theory, reception theory, which considers relationships between producers, visual text and viewers/ readers. This essay will report part of the analysis (gender issues) of the visual text. (Further essays, AECT 1990 and AERA1990) will complete the analysis of all three areas. The method used for textual analysis here was as follows.

- Consecutive programs were sampled during two summer weeks.
After initial viewing, the team formulated focus questions about messages surrounding gender.

Segments in which these messages appeared were located and since messages are format specific, formats were identified.

Segments were reviewed for visual codes within format.
- syntax patterns within shots were identified
- syntax patterns between shots were identified
- syntax patterns in scenes or sequences were identified

Codes of similar formats on broadcast TV were briefly described.

Relationships between codes on broadcast TV and SOTV were drawn.

GENDER BIAS

SOTV programs incorporated sexism or racism in 20-40 percent of each program, therefore, many segments were available for analysis. We selected segments in which the bias was blatant and some in which it was subtle. The two segments described below were two in which sexism was blatant.

Jonathan Apple Rap; Rotten to the Core

Summary. In a psychiatrists' office a young man presents himself to the doctor and explains his "problem." At his workplace, a young girl, Maria, peels apples faster than he can. That fact upsets him, but, secondarily, he cares to learn how to compute Maria's rate of work and his to find the rate per hour at which they could jointly work. In MTV style, the young man sings his problem. The doctor and his
crew of short skirted nurses who dance around the young man, solve the problem for him.

**Format.** The format of this segment (2min .40sec.), or more correctly, music video is ostensibly an MTV format. Opening titles consist of a rotating *Square One TV* logo that is similar in structure to an MTV logo. The syntax patterns are MTV codes during opening and closing sequences. Jump cuts articulate the opening series of tight shots of dancing feet. As in MTV, the geography of the plane is not established during the opening, and the feet, as well as viewer positions, are tossed around in the visual plane. During the first 40 seconds, the camera work is slightly complex with multi-angled tight shots of Jonathan and the doctor juxtaposed with matching cuts. One point of view (POV) shot is included. During this same time period, another locale is established for flashbacks. The scene, to be repeated many times throughout the music video, is a medium long shot of Jonathan’s workplace and is encircled by a halo of soft white light (iris-in slightly) to distinguish it as a flashback. A clock rotates across this medium long shot and this is the final visual MTV code that viewers will see until the end of the segment.

The major portion (2 min.) of the music video alternates between scenes in the doctor’s office and flashbacks. In both locales the actors are presented as if contained on a stage, most often facing and speaking to the viewer, rather than to one another. Syntax patterns include medium or medium close shots, which are three person shots or four person shots with actors facing the viewers. These are medium angled shots "on the level." The static nature of these codes is quite surprising in an MTV format, particularly since some of the actors regularly dance and sing. The only MTV code that
appears to be retained is the duration of the shots; they are short and fast. One might ask if the MTV format was adopted to catch attention and dropped because more serious "subject matter" needed to be communicated. Shots in a medium to medium close range, actors addressing the audience, and shooting "on the level" for the sake of credibility are certainly not codes drawn from MTV, but from instructional film or television, particularly from demonstrations. (We believe these codes were established in World War II training films.) The flashback scenes contain specific clues to this instructional format. Even though flashbacks are a dramatic narrative technique, these are particularly static with no subjective and little objective motion and students are prepared for demonstration. Indeed, all of the superimposition of numbers and math calculations in this music video occur in these flashbacks. Perhaps the designers designated these scenes as the serious instructional ones, therefore, the camera and actors remain static. This switch to instructional formatting within segments is very characteristic of SOTV and can be seen in almost every segment.

Content. When Jonathan presents his math problem to the psychiatrist, the doctor construes it as a Freudian problem and tells the young man that his working partner, Maria, has "done a number on his self esteem," because she can peel apples at a rate faster than Jonathan's rate. The doctor informs him that he is

......consumed with apple envy
......you feel she's all a feeling
......but she's rotten to the core

Maria's peeling skills, he tells Jonathan, will get him fired. The doctor then describes a dream Jonathan will have in which he will crush
Maria and his boss into applesauce. During this advice there are very tight shots of Jonathan's panicked face. Two nurses, dressed in old fashioned white uniforms which are, incidentally, short and tight, provide a refrain for the doctor's advice. They sing that "problems are tearing him [Jonathan] apart and note that he has a "busted ego" and a "broken id." (Remember all of these actors are addressing the viewer.) Whether these nurses are singing or not, they usually frame the doctor or Jonathan, standing on either side of the man. Suffice it to say, that they also make many gratuitous moves while dancing.

Numerical graphics are both superimposed and edited into the flashback scenes. Graphics shots are approximately 30 seconds in duration and they demonstrate to the viewer the manner in which to calculate the combined rates/hour at which two workers produce.

As the segment ends, Jonathan, in a 30 sec. sequence, ignores the Freudian interpretation of his problem and indicates that it is only a math problem. The music video closes, as does similarly on MTV, with a banner in the upper lefthand corner which contains the singer and song title and a similar banner in the upper righthand corner with the word "Exclusive" on it. The banner in the upper lefthand corner reads, Jonathan Apple Rap, Rotten to the Core.

Commentary. The purpose of this commentary is to question the visual text itself and hypothesize about the formation of viewer interpretations. (SOTV viewers and designers will be polled as this research continues.) Visual structural codes of MTV were employed in opening and closing titles and opening sequences. MTV verbal codes of rap, song and dance were employed throughout. Since codes are format specific, student viewers were prepared to be entertained and were probably delighted by the fractured geography of the plane and the rap. Only 40 seconds into this segment, the
format changes to an instructional one, although rap is retained throughout. Children are sophisticated television viewers, a fact which CTW designers appreciated, and the viewers tacitly understand this shift. Video demonstration is something with which they are quite familiar and the mixing of instruction and rap probably delighted them and helped maintain their attention. They do not have trouble reading mixed formats.

But what was actually taught during the instructional sequences of this music video? If the intention of the designers is to interest students in math, then the arithmatic part of the segment was important. Yet these shots were only approximately 30 seconds long, hardly long enough for the adults whom I consulted to calculate the problem. Whether intentional or not, what was transmitted during the instructional sequences of this music video were social and cultural messages. The rap constructs a familiar discourse about women. "That chick, Maria," it tells the children is, "rotten to the core." Maria's offense is that she peels apples faster than Jonathan. In fact, the title of the music video the student is informed in a closing shot is Rotten to the Core. In an instructional format a closing shot helps to summarize and reinforce the message of the lesson. Jonathan, additionally, is told that Maria has "done a number" on his self esteem and that he is filled with apple envy. Not only does the music video reinforce sexist notions of women with which these viewers are familiar, but introduces them to new sexist Freudian concepts. To reinforce this discourse, nurses are shown framing a man and are presented in a toned down version of MTV female background singers.

The construction of the whole music video is intricate, because the designers, in this age of raised consciences, paid tribute
to racial equality by casting black actors as the doctor and one nurse. Additionally, they displayed their own knowledge of gender issues by allowing Jonathan to ignore, but not reject, the Freudian interpretation of his problem. Since the designers now know better, they may feel that knowledge allows them to joke about sexism. But then, in the form of Jonathan, they indicate that they were only joking. This ironic distancing of author or producer from their subject matter, with an expectation that enlightened viewers will also distance themselves, is a practice emerging in post modern literature and pop culture. Educators, however, must seriously question why students viewing a 2min. 40sec. supposedly mathematical music video were reintroduced to old concepts and taught new concepts about sexism?

The Coquette and the Quarter

Summary. In a dramatic skit which mixes the forms of dramatic narrative and advertisements, a young boy of 12 or 13 drops a quarter down a sidewalk grate. A young woman of the same age walks by and he bemoans the fact that he cannot figure out how much he dropped down the grate. He can neither see nor retrieve the coin. She tells him to subtract the amount he now has in his pocket from the amount he had prior to dropping the coin. He figures he has lost a quarter and she lends him one, so he may rent a film. They walk off together.

Format. This dramatic skit is 1min. 30 sec. in length and mixes codes from dramatic narrative and advertisements uniformly throughout. The segment consists of one scene which is articulated primarily by jump cuts. Shots move through a range of very tight to tight, with the exception of the last medium shot in which the pair walk...
off together. The scene opens with a tight shot of the boy's shoes, jumps to a tight shot of his panicked face and then to a tight shot of pink pumps beneath a disembodied pair of tight jean legs. As the scene progresses, the viewer is forced to put these body parts together, feet, faces, eyes, lips, the girl's bottom and by doing so, they employ the reading codes of MTV. About 45 sec. into the scene, dramatic narrative dialogue codes are used to present the conversation between the actors. Even though the dialogue shots are POV, over the shoulder shots, the camera maintains its tight or very tight distance. The dialogue codes are not neutral here, but are layered with Hollywood film romance codes. The dialogue is presented as one between lovers. The camera lingers on the girl's adoring eyes or the boy's moonstruck eyes, presents them very close together and frames one scene to appear as if the two were kissing.

**Content.** The content of this sequence is quite simple. A boy drops a quarter down a grate and is upset by the fact that he cannot retrieve it, nor does he know how much he has lost. A young friend comes along and solves his problem by teaching him how to subtract and lending him a quarter, so he can rent the film he had planned to rent. It appears straight forward, but it is doubtful that subtraction is what is learned by children viewers. The audio and visual tracks are hardly related. An entirely different story is being told in the visual track.

**Commentary.** It is unimaginable that CTW designers could combine MTV codes with romantic Hollywood film codes and not know what they were doing. Children viewers receive very tight shots of body parts, the girl's pink pumps with tight jeans, her mascaraed eyes, her lipstick-red lips and her bottom. The boy is on screen less
than she and fares only slightly better. His feet, face and "moony" eyes are shot. Again, the tight shots articulated with jump cuts probably delight the viewers and engage them, as they do in MTV, in establishing themselves in the geography of the plane and piecing together the message. The message involves the sexualization of children. Codes of kiddie porn are also evident in this segment. Children are heavily made up; certain body parts are fragmented and presented as sexual fetishes. What imbues the codes of advertisement and kiddie porn with power, however, is the employment of dramatic narrative codes. This is a story with a plot, boy meets girl; they "fall for" one another and walk off together. It is important to remember that viewers read dramatic narrative most often by identifying with the hero or heroine. Hollywood directors knew that when they established the dialogue codes of POV, over the shoulder shots. A point of view shot places the viewer in the shoes of the speaker. Very surprisingly, this is one SOTV segment in which no instructional format appears. Neither character ever addresses the audience, but even when dramatic narrative is invoked in other SOTV sequences, the instructional format consistently breaks in. It is difficult to imagine that the designers thought they were teaching subtraction in this segment, or even interesting viewers in subtraction. What is taught is how a 12 or 13 year-old-boy and girl should act, dress and speak in a sexual fashion. Again, the scene involves young viewers in a familiar discourse about gender relations. A young girl should dress and make up in a certain manner. Pumps should be worn with tight jeans. Mascara and lipstick are required and a bow in the hair is helpful. Her stance and looks, when talking to a boy, should be seductive. The poor boy, of course, is powerless in this situation. Certainly United States viewers from eight to 12 are familiar with this discourse, but the clothes and "the look" give them an updated
version of the discourse, and the inclusion of children their own age, offers them role models. We must question who made the decision to include 12 or 13-year-old actors and 8 to 12-year-old viewers in this scene with codes from TV ads, Hollywood romance films and kiddie porn.

Patterns

This essay has only been able to address a fraction of the sexism inherent in SOTV. The larger study also examines racism and explores designer intentions and viewer interpretations.

Although this essay has only presented an overview of SOTV and an indepth analyses of two segments, we believe both the overview and the analyses are representative of the program as a whole. We have found bias in 20% - 40% of all programs sampled. To date, we have found a pattern in these biased segments, the characteristics of which have been mentioned in the analysis here. When sexist or racist materials are presented in these programs, designers most often distance themselves from, or excuse the material in various ways. Racist material is always hidden beneath the obvious inclusion of blacks in these segments. One must infer that the designers are partially color blind. Blacks are never parodied, but other people with accents are, such as Hispanics, Arabs and Italians. Sexist segments, however, are presented in one of two ways. The inclusion of blacks is sometimes used as a foil for sexism, as in Jonathan Apple Rap, but sometimes sexism is blatantly presented with no excuses. These two approaches are clearly present on current day broadcast television as well. Some detective shows, police programs and MTV are blatantly sexist. Yet, some sitcoms and ads use ironic distancing to present sexist materials. (Recall the current shampoo ad in which a sultry female voice tells the viewer that
“All chicks like to be soft,” while the camera focuses on actual yellow chicks. Later the camera does switch to the beautiful speaker.)

Late 80s performers are allowing themselves to be sexist or racist, perhaps because they know better and expect that their audience knows better. They allow themselves to be shocking. Even Johnny Carson,( Pareles, 1989) while recently playing one of his characters, "Clem," made such racist remarks that the studio audience gasped. He had distanced himself from his material by letting the bumpkin Clem deliver the lines. It is as if enlightened performers and audiences can now laugh at bigotry, because they are no longer bigotted. Other sociological reasons have been suggested for this return to bigotry, (Pareles, 1989) but ironic distancing is a major characteristic of the post modern age and television is the expert producer of the post modern visual text. We believe that the designers of SOTV recognized this. They also recognized that they were dealing with children whose primary cultural medium is television.

Children may be living in a post modern age and may be sophisticated viewers of television. But, their sophistication resides in their ability to shift format codes and decode visual information quickly. They are hardly ironic distancers and the pace of SOTV almost guarantees that they only have time to process the dominant message. They engage the facts of what they see. And even if they were ironic distancers, such distancing from patently sexist and racist discoursers works as an ethical sleight of hand for the practice of sexism and racism.
FIGURE 1: Overlapping codes of SOTV and Broadcast Television Formats

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