THE FEMININE COMPUTER: IMPACT OF MALE VERSUS FEMALE STEREOTYPED LINGUISTIC OUTPUT ON ATTRIBUTING POWER TO A COMPUTER

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CHAPTER I

INTRODUCTION

Traditional man-machine research has not answered questions that have arisen in the human-computer interaction. Such questions involve a social component not experienced in man-machine interaction. It would be useful to have a psychological model of the human-computer interaction that could be used for research on these questions (Nickerson, 1969). The human-computer interaction is communication. The variables involved in this communicative interaction need to be specified. Information presently available is empirical evidence on human-computer interaction, descriptions of the interaction and knowledge of human-human communication. This study explored the following variables as possible structures for a psychological model: gender of the user, male attributions of the computer, gender stereotyped linguistic output of a computer, and previous computer experience of the user.

Literature Review

Human-Computer Interaction Research

Much research on the human-computer interaction has

focused on "knob-and-dial ergonomics and on the selection and training of operators" (Rasmussen, 1980, p. 67). Some research has begun on the impact of the computer on the human in the interaction. This research has been conducted using the Prisoner's Dilemma (PD) mixed motive game. The focus of the PD research was to look at the way in which humans attribute human characteristics to computers and how this affects their strategies when they play PD with a human versus a computer opponent (Orcutt & Anderson, 1974a, 1974b; Mack, Williams & Kremer, 1979). The PD game is represented in a matrix (Rapoport & Chammach, 1965) in Figure 1.

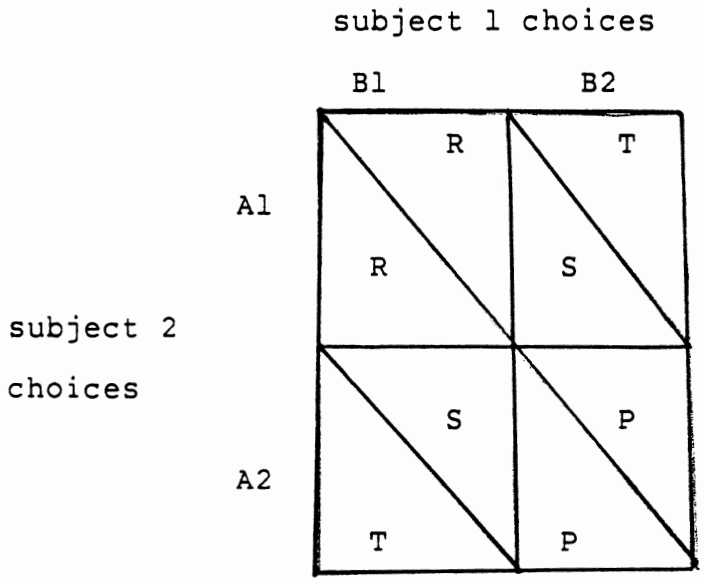

Figure 1. Prisoner's Dilemma Game.

The PD game involves cooperation and competition. It is based on a scenario in which two suspects in a crime are queried. In the PD game matrix R is for reward, S is for sucker's payoff, T is for temptation to defect (A2 or B2 choice), and P is punishment for defection. Two inequalities must be satisfied for the PD game: $S < P < R < T$ and $2R > S + T$. When playing the PD game, if each fails to implicate the other (cooperation, A1 and B1 choices), both will get light sentences. If one confesses (competes, A1 or B1 choices), the other will go to prison as a result of the evidence from the confessor and the confessor will go free. When both confess (A2 and B2 choices), they are both found guilty. In laboratory versions of this game, point (or monetary reward) systems are used to represent these various outcomes.

Orcutt and Anderson (1974a, 1974b) used the PD game to study the human reaction to the computer. In their study, they used 24 male subjects. Half the subjects were informed that they were playing a human opponent and half the subjects were informed they were playing a computer opponent. All subjects played a computer. One third of the subjects were in a condition where the computer made a competitive (A2,B2) choice on 90% of the trials. The second 1/3 were in a condition where, the computer was cooperative 50% of the time. The last 1/3 played a competitive opponent for the first 30 trials and then an extremely cooperative opponent (90% cooperative choices). In a preliminary study (1974a) they found little difference in the strategies used by the

subjects who thought they were playing human opponents and subjects playing computer opponents. The subjects, all male, did indicate a difficulty in communicating or trying to reach an agreement with the computer opponent.

In a later analysis of their data, Orcutt and Anderson (1974b) found two groups in their subject pool. One group had the capacity to differentiate a socialized other (DSC). This group consciously changed their behavior from the 'human' opponent to the 'computer' opponent. The DSC subjects were more cooperative when they thought that they were playing a human opponent. The second group did not have the capacity to differentiate a socialized other (no-DSC). The no-DSC subjects did not play their opponents differently. The majority of the subjects, 15, were found to be no-DSC subjects. Orcutt and Anderson's evidence supported the assumption that most people do not differentiate the human-computer interaction from a human-human interaction. A startling finding was that the no-DSC subjects, who played the computer first, never made the cooperative choice when subsequently playing a human opponent. Orcutt and Anderson concluded that the subjects had dehumanized the human in preference to humanizing the computer, or in preference to differentiating between a computer and a human opponent.

Mack, Williams and Kremer (1979) disagreed with the interpretations of these results. The purpose of their research was to clarify and explain Orcutt and Anderson's results. In previous studies using the PD game, it was "indicated that the perceived sex of the other has a

significant effect on behavior in experimental games" (p. 44). Mack et al. used male and female subjects. They first had all the subjects rate the computer on a BEM Sex-Role Inventory (BSRI). Ninety percent of the males and 85% of the females attributed male characteristics to the computer. Then two experimental groups (N=10 in each) played 100 trials of the PD game against a computer. In the standard instructions "several references to the computer taking the role of the other player" (p. 45) were made. The PD games, 100 trials for each subject, were played on a terminal. The computer was programmed to randomly make a cooperative choice 80% of the time, and to choose uncooperatively 20% of the time. The results showed the males made more competitive choices than the females. In comparing these results to previous human opponent research (Mack, Auburn, & Knight, 1974; Mack & Knight, 1974), females played the computer as though they were playing a male, and the males played even more competitively than in the male-male condition. After reviewing Orcutt and Anderson's (1974b) research, they concluded that a better explanation for Orcutt and Anderson's work is that the subjects were playing as though they were playing a male opponent. They stated that this was because "The computer is imbued with not only a 'male' -style rationale, but possibly an 'ideal' male-style rationale" (p. 46). Therefore, the playing strategy does not have to do with dehumanizing others, but has to do with a social interaction between a human and an 'ideal' male computer. When describing this 'ideal' male computer, they did not go into

detail as to what the concept of an 'ideal' male computer type is. Weber (1949), however, gave us the concept of an ideal type. It is not a realistic detailed description or an 'ideal' in an evaluative type. But it is an abstraction that contains a description of the features that are salient and places an emphasis on the main characteristics. The main characteristics of the 'ideal' male style computer need to be further explored through the descriptions of the human-computer interaction, with particular interest focused on male style language and power as the salient features of the 'ideal' male style computer.

Descriptions of the Human-Computer Interaction

The user of a computer can be viewed on a continuum, with an individual at one end who is naive about computer use and has never interacted with a computer, but receives computerized bills; at the other end is a highly skilled user who has an understanding of at least one programming language. The user can be contrasted to the programmer who is trained in programming languages and spends a great deal of time writing and manipulating programs. The user is interacting, not only with an electronic machine, but also with the linguistic product of a programmer and systems designer. The descriptions that follow are general descriptions of the interaction at all levels of user literacy. The term "language" in these descriptions refers to all levels of computer interaction, from programming language to

the linguistic output of a computer system.

Dunn (1980) has stated that the mediating agency for the human-computer interaction is language, and described the human-computer interaction process as a bi-directional interaction between two parties having knowledge of information (facts) that is (are) "confirmed in the surrounding world" (p. 193). "In addition to the facts, each party to an interaction has 'beliefs', e.g., value systems, projected data, or hypothesized rules, inferences, relationships, etc." (p. 183). However, in the human-computer interaction, according to Dunn (1980), only the human possesses these belief systems.

It is, also, important to understand the qualities of the parties in the interaction. Martin (1973) described the basic differences in logic capability between the human and the computer. The human is adaptable, observes patterns, detects relevance and can invent questions. However, the human in doing all of the above is slow, unpredictable, emotional, error prone, and might at any time change the subject. The computer, however, is not adept at any of these human abilities. It is accurate, fast, has a vast memory reached through special retrieval routes, and can deal with complex, massive, logical problems that are sequential. Martin's explanation of the differences in "thinking" talent is that the human is good at slow but highly parallel and associative thinking, and the computer is good at "ultrafast sequential logic" (p. 7).

To summarize, the descriptions of the human-computer

interaction view the interaction as a social interaction, where a human and a computer, each with their own unique qualities, interact through the medium of language within some overall interaction structure. Since language is the medium for the interaction, it would be useful to understand it and the evolution of the linguistic output of the computer.

Programming language development. Programming languages have been designed from inside the computer out (Martin, 1973). This means that programmers are focused on the internal (mathematical-logical) mechanizations of programs and not on the linguistic output of the program as it appears to the end user. Programmers design systems for people but are given no training in the understanding of people (Tomeski, 1975; Uttal, 1968). Most of this programming has been done by males who fill more than 80% of the programmer and system analysts positions (Tomeski, 1975). There is a difference between present day computer languages and everyday human language. There is a mathematical/logical basis to programming languages, whereas in everyday language there are ambiguities of word meanings, and "innumerable unstated and even unconscious assumptions" (Jones, 1978, p. 197). Also, in natural language, meaning is founded in context. Kennedy (1974) claims that in mechanical communications "a terse and economical communication style was developed" (p. 315).

In summary, the linguistic output of the computer is written mostly by males, who are trained in language that is

mathematical-logical and they are not trained in natural language or in dealing with humans.

In the development of computer languages, it was originally necessary to be brief and to achieve one's purpose with as much parsimony as possible. This resulted in languages for the computer that are terse and economical. However, as the technology became less expensive, and with growing awareness that the human-computer interaction problem was now more costly than computer time, new approaches to language were sought (Guedj et al., 1980; Martin, 1973; Meadow, 1970; Sackman, 1970; Streeter, 1974; Tomeski & Lazarus, 1975). As computers have become smaller, cheaper, and more widely available, more and more people have become and are becoming users (James, 1980; Nickerson, 1969; Toffler, 1979; Weiner, 1950). They are not trained in the details of programming language. They only interact with the linguistic output on a terminal. As the user population changed, problems began to occur (Fitter & Sime, 1980; Guedj et al., 1980; James, 1980; Jones, 1978; Kennedy, 1974; Martin, 1973; Meadow, 1970; Robertson et al., 1981; Sackman, 1970; Shneiderman, 1980; Smith & Green, 1980; Sterling, 1974; Tomeski, 1975). The interaction problem is a repetitive theme in writings of engineers, systems designers and psychologists. Meadow (1970) and Sackman (1970) discussed a tremendous lag in computer application due to failure of the human-computer interface. The majority of the writers have identified the major problem as the language used by the computer in it's communication with the human. They agreed that a serious

interaction/language problem exists between the user and the computer (Guedj et al., 1980; Jones, 1978; Kennedy, 1974; Martin, 1973; Robertson, McCracken & Newell, 1981; Streeter, 1974; Tomeski, 1975). They agreed that some form of tension, frustration or disequilibrium exists between the user and the computer. Since no clear-cut conceptualization of this problem has been suggested, the computer specialists tried to describe the interactive process so that it might be better understood. They have also stated directions for future systems to follow. In describing the interactive system, they have agreed that what is required is a change in the style of the language to fit the individual users' need. They also claim that work should accelerate on the development of 'natural' language, even though most expressed doubt that this would ever be possible, because 'natural' language is too vague, loose, and ambiguous (Chapanis, 1971; Guedj et al., 1980; Jones, 1978; Kennedy, 1974; Martin, 1973; Robertson et al., 1981; Shneiderman, 1980; Smith, 1980; Streeter, 1974; Tomeski, 1975). Smith (1980) asserted that natural language will never be suitable for computer use for these reasons. He stated, however, that subsets of natural languages must be used for communicating with the computer (p. 30). Kennedy (1974) also believed that some use of natural language should be made. He explained the style of this 'natural' language in more detail as he established rules for systems design. Some of the rules he proposed were: (1) Communication should be with a terse 'natural' language and it should avoid codes

and mnemonics. It should avoid abbreviations if possible. (2) "A social element to the communication should be maintained to make full use of the speed and accuracy which can be achieved in a conversational, interactive ambience" (p. 326). (3) The system should be helpful, polite and informative. (4) The system should appear to be logically consistent and the language should be simple. (5) "Control over all aspects of the system must appear to belong to the user" (p. 326).

Although all the computer specialists seem to agree on what is necessary, their recommendations are not simple to implement, and they have not agreed on an appropriate program of research on the problem. Some have gone further and stated that each system may need to be matched to a specific user's needs (Dunn, 1980). In recommending research, the experts have not been very specific as to direction. Consequently, Gaines (1978) claimed that instead of searching for a technical breakthrough, one should look at "procedures and strategies which humans adopt in communicating with one another" (p. 202). Martin (1973) described one instance where this strategy was successful. In designing a hospital system, success was achieved only after observing doctors with a good bedside manner. This supports the Robertson et al. (1981) contention ". . . that we have not addressed substantive issues of man-machine communication" (p. 461). They go on to recommend that we " . . . should seize on any notion that seems to expand the frontiers of the possible" (p. 461). Moran (1981) also suggests that we should follow

all paths that seem fruitful, because we have not found very many answers yet. Nickerson (1969) argues that the conversational nature of the human-computer interaction presents "genuinely new questions" (p. 166) which are not answered by traditional man-machine research. He concludes that it would be appropriate and useful to design a model for "the psychology of man-computer interaction" (p. 177).

Summary. In putting together all of the descriptions and plans for solutions to the human-computer interaction problem, a conceptualization of the human-computer interaction emerges. First, the interaction is mediated by language. Second, a disequilibrium in this interaction exists that needs to be solved by giving more perceived power to the human. The method proposed for accomplishing this has been to use more 'natural' language, thereby maintaining enough elements of a social interaction to allow for a flowing interaction. A need has been expressed for a new perspective on the interaction. Jones (1978) suggests studying human-human communications to better understand the human-computer interaction. The conceptualization that emerges is one of an unequal social interaction which has not been described in a fashion which would lead to productive research. This is a valuable insight into the interaction problem.

The linguistic output of the computer is the mediating agency between the human and the computer. The interaction has been described as producing a disequilibrium between the user and the computer. This reinforces research which

demonstrates that the computer is viewed and reacted to as an 'ideal' male, and indicates that the salient feature of the ideal computer is power. This power feature is a main characteristic of the male style linguistic output of computers. Therefore, human-human communication needs to be considered, with an emphasis on gender and power differences.

Human-Human Communication--Gender/Power Differences

Since the computer is attributed with 'ideal' male characteristics, and language is the method by which the human interacts with it, it is necessary to understand gender differences in language usage which could cause this.

There has not yet been an abundance of research on male/female language pattern differences. However, some differences have been observed in everyday usage of language. Five usage differences have been noted by Key (1975). They are:

a. Intensifiers--females use more intensifiers, e.g., so, such, vastly, and quite. An example is: "It was such fun."

b. Adjectives--females use adjectives that emphasize femininity, such as cute, darling, sweet, etc. Males use ones that emphasize masculinity, such as leathery, bristly, lusty, etc. Also, females tend to use approximation adjectives in front of definite numerical terms. An example of female use is, "He is about 6' tall."

c. Modal--modal words are those such as: can, could, shall, should, will, would, may, might, have, and been. Males use modals that tend "to be more definite and authoritative" (Key, 1975, p. 75). Females use ones that tend to show "indefiniteness, inconclusiveness, and uncertainty" (Key, 1975, p. 75). A comparison would be: Male, "We will be there."; Female, "We might be able to make it."

d. Tag questions--this is a shortened question added to the end of a declarative statement. Females tend to use them more often. Also, females tend to use a form of "ever" with what, how, who, why, and with, to soften the word. An example is, "Whatever is he doing?"

e. Imperative constructions--females use alternatives for imperatives, e.g., instead of "Bring that here", "Would you bring that here on your way?"

These language patterns are obviously not adopted by everyone. For instance, academics speak a much more neutral language than the general population (Lakoff, 1975). Lakoff (1975) argues that this fact, that not all individuals adopt a gender stereotyped language, indicates that the patterns are not "sex-linked traits" (p. 75). However, she also points to the overwhelming adoption of gender stereotyped language at a very young age. She claims that ". . . it is the dominant group in a society that establishes stereotypes of the other groups. . ." (p. 74-75). It is this group that decides which other groups will use the more polite, inexact speech. In some cultures, male adults adopt what is herein called female gender stereotyped language when they

are low in status. But, in general, it is the females who adopt the lower status language.

Therefore, natural language contains a power variable that links power with the male gender. And, it is generally observed that language stereotyping was widely adopted in the culture by both genders.

Hypotheses

Based on the assumptions from the literature and given the definitions stated herein, the following hypotheses were stated:

Hypothesis 1: It was hypothesized that the COMPUTER will be rated on a semantic differential (Osgood, Suci & Tannenbaum, 1957) as more similar to MAN than to WOMAN; but rated more potent than MAN on the salient factor, Potency.

Hypothesis 2: It was hypothesized that the computer with the male stereotyped linguistic output will be rated on a semantic differential questionnaire as more potent than the computer with the female stereotyped linguistic output.

CHAPTER II

METHOD

Experiment 1

Method

Subjects. Four males and six females were recruited from introductory psychology classes. They received extra credit for their participation in the study.

Procedure. The subjects were tested jointly in a laboratory. The following instructions were given:

> Since this is a formal experiment, it will be necessary for me to have your close cooperation. Work entirely by yourself, and do not discuss anything with those around you. If you can not hear, or have a question, simply raise your hand.
>
> Before we begin the experiment, I want you to check the materials you have been given to make sure that they are correct. First check the outside of your folder. All men should have folders numbered 1-10 with a black mark on the upper left hand corner. All women should have folders numbered 11-20 with no black mark. Is there anyone with an incorrect folder? (Pause). Next, does everyone have one of the pencils? Be sure your pencil is in good working order. (Pause).
>
> Now, write your name on the ouside of the folder below the number written there. (Pause). Write that number; not your name, at the top right-hand corner of every page inside the folder. (Pause). Is everything all set? Now, please close the folders and give me your attention while I explain the experiment to you.
>
> The purpose of this study is to determine if you can detect whether a male or a female has

written a program for a computer. In your folder there are 10 sheets. These sheets are taken from a Punctuation program written to be used on a computer. Some of the passages may read a little differently because it is written for the computer, i.e., you will frequently see reference made to pressing the Return button on the computer. As you read the program, try to picture yourself working on the computer.

At the bottom of each sheet is a question. "Do you think the language printed above was written by a male or a female?", with a place to check for the one you think wrote the language on that sheet.

Please be sure that you make a choice at the bottom of every sheet in your folder.

Are there any questions? (Pause). Work as quickly as possible, choosing male or female on the basis of your own first impression after reading the whole sheet.

When you are finished, please check to make sure that you have made a choice on every sheet, and only one choice.

Please turn in your folder and pencil at the door. Are there any questions? If you have any trouble reading the material, please raise your hand. All right, go ahead and start.

The linguistic output of the Apple II PUNCTUATION program to be used in the main study on the computer was divided into ten chunks of material. Five of these chunks were randomly chosen to be written in feminine language. The linguistic output from the computer was basically maintained, with some differences, in order that the printed material made sense. See Appendix B for the materials as they were presented.

Experiment 2a

Method

Subjects. The 50 subjects used in this study were recruited from introductory psychology classes. They received extra credit in their classes for participation in

this experiment.

Procedure. The subjects were tested together in a classroom. The following instructions, read aloud, were the instructions for a semantic differential used by Jenkins, Russell and Suci (1958):

> Since this is a formal experiment, it will be necessary for me to have your close cooperation. Work entirely by yourself, and do not discuss anything with those around you. If you can not hear, or have a question, simply raise your hand.
>
> Before we begin the experiment, I want you to check the materials you have been given to make sure that they are correct. First check the outside of your folder. All men should have folders numbered 1 - 30, with a black mark on the upper left hand corner. All women should have folders numbered 31-60, with no black mark. Is there anyone with an incorrect folder? (Pause). Now, write your name on the outside of the folder, below the number written there. (Pause). Write that number; not your name, at the top right-hand corner of every page inside the folder to ensure your extra credit. (Pause). Be sure to keep the sheets in the same order. Count how many sheets there are in the folder. There should be exactly 10 + the cover. Please raise your hand if you do not have 10. (Pause). Has everyone written your name on the outside of the folder and written the folder number on every one of the 10 sheets? Close your folder and give me your attention while I explain the experiment to you.
>
> The purpose of this experiment is to discover the meaning of certain words by getting your rating of the words on a set of descriptive scales. In your folder there are 10 sheets, each with the set of scales and each with a different word printed at the top to be rated on each of the scales. I want you to rate the words on the basis of what they mean to you. Place a check mark on each of the scales wherever you feel the word should be rated. Work as fast as you can; don't take too long to make any rating; and rate according to your first impressions of the words. Don't hesitate to use the extreme ends of the scales, wherever these seem appropriate.
>
> (Point to the blackboard). Here are some examples of the way you should do this task: If you were rating the word EXPRESS TRAIN and came to the scale 'fast-slow', you would probably consider an express train quite fast, and so you would place a check mark on the 'fast' end of the

'fast-slow' scale--perhaps #1, (Check #1 on the board). Then you would go on to the next scale. Be sure that your mark is between the dots.

If next you were rating the word STREETCAR and came again to the 'fast-slow' scale, you might feel that a streetcar was only fairly fast and would check the scale here. (Check #3 on the board). Then you go on to rate STREETCAR on the rest of the scales. If, however, you were rating the word OXCART on the 'fast-slow' scale, you would probably consider it quite slow, and rate it #7. (Check #7 on the board). Of course, you would make only one mark.

When rating the word LULLABY on the 'fast-slow' scale, we would probably all agree that it belongs nearer the slow end--but you must decide just how slow the word LULLABY seems to you. Similarly, we would rate the word PLAYBOY as quite fast, but each of us might have a different idea of exactly where to rate the word. So rate each word as you think it should be rated.

Most of the ratings you are to make will not be as literal as these examples. For instance, rating the word OXCART, you might come to the scale 'hot-cold'. There is no obvious 'correct' answer here--so rate it as you see it; does OXCART seem to you to be hot or cold or in between? Don't expect the ratings to be literal. We want your impressions of the words. In some cases you may wonder how a certain scale can apply to the word you are rating, but we have found that you will be able to make the decisions quite easily if you follow instructions, rating quickly on the basis of first impressions.

Are there any questions before you begin? (Pause). Remember, rate the word printed at the top of each one of the scales on the sheet. Work as quickly as possible, rating on the basis of your own first impressions of the word. Be sure to put one and only one check mark on each scale on a sheet before going on to the next word.

When you are finished, please look over every sheet carefully, to be sure that you have one mark on each scale, but do not change your ratings because we want your first impressions of the words. When you are certain that you have completed the task according to instructions, you may leave. Please turn in your folder and pencil . Are there any questions? If you have any trouble reading the words or the scales, please raise your hand. All right, go ahead rating your impressions of the words as quickly as possible.

The scales were presented in the same order as Jenkins and Russell (1958) to all subjects, with the exception that

scales were chosen only from the Evaluation, Activity and Potency factors. One scale, powerful-powerless (Mann, Phillips & Thompson, 1979) was added to supplement the potency scales.

Table 1

Scales Used on Semantic Differential Questionnaire

cruel-kind
masculine-feminine
untimely-timely
active-passive
unsuccessful-successful
hard-soft
wise-foolish
good-bad
weak-strong
important-unimportant
calm-excitable
false-true
beautiful-ugly
slow-fast
powerful-powerless

The concepts were a combination of terms chosen for this study and concepts used in the Jenkins and Russell (1958) study. The 10 concepts used were randomly ordered. One half of the subjects received the first ordering of the concepts: COMPUTER, TIME, POLITICIAN, DOCTOR, MYSELF IN RELATION TO A COMPUTER, GOD, SCIENTIST, MAN, MYSELF and

WOMAN. One half of the subjects received the second ordering of the concepts: GOD, SCIENTIST, MAN, MYSELF, WOMAN, COMPUTER, TIME, POLITICIAN, DOCTOR, and MYSELF IN RELATION TO A COMPUTER. The semantic differential questionnaire package with the first ordering of the concepts is in Appendix C.

These subjects were later asked in their introductory psychology classes if they had had any previous computer experience.

Experiment 2b

Method

Subjects. The 52 subjects used in the study were recruited from introductory psychology and introductory sociology classes. Computer interaction subjects were recruited from different sections than the subjects in Experiment 2a to avoid discussion between subjects. This was done because the Experiment 2a subjects were tested about one month before the computer interaction subjects.

Apparatus. An Apple II Computer with a monitor was used to conduct the experiment. Software was rewritten from a program called PUNCTUATION, written by the Bill Willis Skill Center Vocational Technical School in Tahlequah, Oklahoma.* The program, called PUNCTUATION is a simple program, covering the correct use of periods, commas and question

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*The program was provided for this research by the Apple distributor at Stillwater Typewriter.

marks. The male and female stereotyped versions of the program are in Appendix D.

Procedure. The computer interaction subjects, N=52, were tested individually. First, the subjects experienced the PUNCTUATION program on the gender stereotyped computer. The subjects, 26 males and 26 females, were randomly assigned to the male or female stereotyped computer conditions. The first indication to the subjects that a computer was involved in the study was when they arrived at the experimental room. This was to insure that subjects did not decide to participate on the basis of knowledge that they would be interacting with a computer. After the subjects experienced the PUNCTUATION program on the gender stereotyped computer they completed the semantic differential. After the subject was comfortably seated at the computer, the following instructions for the first part of the experiment were given verbally:

> Please print your name and your teacher's name on this sheet to get your extra credit. (Pause).
>
> This is a formal experiment. Please do the best you can and pay close attention to the task. We are testing some new educational programs and we need your assistance. There are two parts to this experiment: In Part 1 - you will personally experience the new educational program, and in Part 2 - you will fill out some rating forms.
>
> Please listen carefully while I give you the instructions for Part 1. The educational program is on the computer at which you are seated. During the program you will be asked to use a few of the keys on this keyboard. (Point to keyboard).
>
> At a number of places you will be asked to select the correct sentence. You will need to use the #1, 2, or 3 keys. (Point to the 1, 2, & 3 keys.) You will also be asked to use the 'Return' key and perhaps the 'R' key. (Point to the Return & R keys). Do you have any questions?
>
> The program is ready to run -- Please follow

> the instructions on the screen. (Point to the screen). I will be available if you have any questions -- Do you have any questions before you start? Then go ahead.

The subject was then given all the time needed to complete the PUNCTUATION program at the computer. When the subject finished the PUNCTUATION program, the computer requested that they inform the experimenter. Each subject then went to another experimental room to complete the semantic differential. The standard instructions for the semantic differential that were used with the no computer interaction subjects were modified for a single subject and recorded. An easel was used for the illustrations referred to on the tape. The instructions were played by the experimenter on a tape recorder for the subjects.

They completed the same semantic differential package (Appendix C) as the subjects in Experiment 2a. They also answered a final sheet in (Appendix E), requesting information about their previous experience with computers. An experimental assistant was available to answer any questions or to stop the tape if they got behind on the instructions.

Upon completion of this portion of the experiment, the subject was thanked and informed that it was the language of the computer that was being studied. They were also told that the experimenter would be available to present any results to them or to their class, if they requested it. Lastly, they were asked to not talk about the study with others. All subjects in either the male or female stereotyped computer conditions participated in the experiment within two days to minimize such communication.

Experiment 3

Method

Subjects. The 20 subjects used in this study were recruited from introductory sociology classes. The subjects received extra credit in their class for participation in the experiment.

Apparatus. The same program and computer were used as in Experiment 2b. The one exception was that the male stereotype program was changed in one place. The change was made in the computer's reaction to the subject selecting the correct sentence to make it more consistent with male stereotyped language. Instead of Right, Right, Right, etc. spreading across and down the screen, a statement reading 'That's Correct' was stationary in the middle of the screen.

Procedure. The major change in the procedure, from Experiment 2b, was in the administration of the instructions in this experiment. Everything was exactly the same in the computer interaction. But upon completing the computer interaction, the keyboard was pushed back and the subject completed the semantic differential in front of the computer. The following instructions were administered, orally:

> The purpose of part 2 of the experiment is to discover the meaning of certain words including the word computer. Whenever you come to a word or a group of words that includes the word computer, I want you to rate this (point to the computer) computer that you were just using.
>
> In your folder there are 10 sheets, each with the set of scales and each with a different word printed at the top to be rated on each of the scales. I want you to rate the words on the basis

of what they mean to you. Place a check mark on each of the scales wherever you feel the word should be rated. Work as fast as you can; don't take too long to make any rating; and rate according to your first impressions of the words. Don't hesitate to use the extreme ends of the scales, wherever these seem appropriate. Here are some examples (Point to the easel.) If you were rating the word EXPRESS TRAIN and came to the scale 'fast-slow', you would probably consider an express train quite fast and so you would place a check mark on the 'fast' end of the 'fast-slow' scale--perhaps #1, as it is on the easel. Then you would go on to the next scale. Be sure that your mark is between the dots.

If next you were rating the word STREETCAR and came again to the 'fast-slow' scale, you might feel that a streetcar was only fairly fast and would check the scale here, #3 on the easel. Then you go on to rate STREETCAR on the rest of the scales. If, however, you were rating the word OXCART on the 'fast-slow' scale, you would probably consider it quite slow, and rate it #7. Of course, you would make only one mark.

When rating the word LULLABY on the 'fast-slow' scale. We would probably all agree that it belongs nearer the slow end--but you must decide just how slow the word LULLABY seems to you. Similarly, we would rate the word PLAYBOY as quite fast, but each of us might have a different idea of exactly where to rate the word. So rate each word as you think it should be rated.

Most of the ratings you are to make will not be as literal as these examples. For instance, rating the word OXCART, you might come to the scale 'hot-cold'. There is no obvious 'correct' answer here--so rate it as you see it; does OXCART seem to you to be hot or cold or in between? Don't expect the ratings to be literal. We want your impressions of the words. In some cases you may wonder how a certain scale can apply to the word you are rating, but we have found that you will be able to make the decisions quite easily if you follow instructions, rating quickly on the basis of first impressions. Remember, rate the word printed at the top of each one of the scales on the sheet. Work as quickly as possible, rating on the basis of your own first impressions of the word. Be sure to put one and only one check mark on each scale on a sheet before going on to the next word.

Your last sheet contains two questions. Just answer them briefly.

When you are finished, please look over every sheet carefully, to be sure that you have one mark on each scale, but do not change your ratings

> because I want your first impressions of the words.
>
> Don't forget, if you see the word computer, I want you only to rate this computer and your interaction with it. When you have completed the questionnaire according to the instructions, please let me know. Do you have any questions? All right, go ahead, rating your impressions of the words as quickly as possible.

The exit statement was the same as in Experiment 2b, thanking the subject and requesting that they not discuss the experiment with anyone.

CHAPTER III

RESULTS

Experiment 1

In this study the subjects read the stereotyped language and made a choice as to whether it was male or female language. A t test for proportions was done on the gender correct versus the gender incorrect choices, t (10) = 13.09, $p < .0001$. This indicated that a sample of the subject population for the following studies was able to label correctly the gender of the stereotyped language.

Experiment 2a

The results indicated that COMPUTER is not rated the same as MAN. It was rated as more evaluatively positive, more active, and more potent than MAN. On the salient factor, Potency, COMPUTER was rated significantly higher than MAN, which was rated significantly higher than WOMAN. These results demonstrated that the computer is significantly different from the concept MAN. The results support the label 'ideal' male for the computer.

Table 2

Mean Factor Ratings of COMPUTER, MAN & WOMAN

Factor	COMPUTER	MAN	WOMAN
Evaluation	21.16	24.18	18.90
Activity	7.92	9.36	11.48
Potency	5.50	8.76	13.80

Note. 1 is the most positive rating.

Experiment 2b

This experiment was conducted so that the results could be compared to Experiment 2a. The directions for the semantic differential were similar to those in Experiment 2a. The computer interaction occurred and afterwards the subjects went to another room and were given the directions for the semantic differential, altered for a single subject, from Experiment 2a. No references were made to the computer with which they had interacted. Subjects in Experiment 2a were compared to subjects in Experiment 2b, creating three levels of computer interaction: no computer interaction, female stereotyped computer interaction, and male stereotyped computer interaction.

On a subject gender x level of computer interaction (2 x 3) analysis of variance on the Potency factor, the main

effects of gender, F (1,101) = 4.36, $p < .0395$, and the level of computer interaction experienced, F (2,101) = 3.76, $p < .0268$, were significant. The interaction was not significant. However, the results did not demonstrate that the gender stereotyped language of the computer was responsible for the significance on the level of the computer. A t test between Experiments 2a and 2b subjects indicated that the significance was due to being in Experiment 2a or 2b, t (100) = -2.7031, $p < .008$. The mean for the Experiment 2a subjects was 5.5. The mean for the Experiment 2b subjects was 6.81.

Experiment 3

A possible explanation for the failure to find an effect of gender stereotyped language on power attribution of the computer was that the instructions for the semantic differential did not ask the subject to rate the computer with which they had interacted. In Experiment 3, the subjects were instructed to rate only the gender stereotyped computer with which they had just interacted.

On a subject gender x gender of stereotyped computer x previous computer experience (2 x 2 x 2) analysis of variance, the following results were obtained:

1. The gender stereotyped linguistic output of the computer did create a significant difference in the attribution of power to the computer, in interaction with gender of the subject, F (1,19) = 7.55, $p < .0177$. This interaction is demonstrated in Figure 2. The means are presented in

Table 3 in the Appendix.

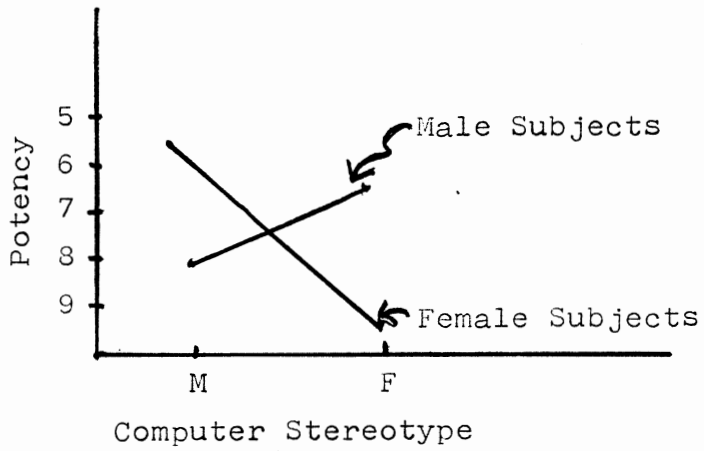

Figure 2. Ratings on Potency Factor for Male and Female Stereotyped Computer.

A t test for differences among several means was done. The following conclusions are supported by the statistical findings: (a) the female subjects rated the male computer as significantly more potent than the female computer, t = 3.8, $p < .01$; and (b) male subjects rated the female computer as significantly more potent than the female subjects did, t = 2.8, $p < .05$.

2. The results also demonstrated a significant three-way interaction (Figure 3); subject gender x gender of stereotyped computer x previous computer experience, F (1,19) = 5.10, $p < .0343$. The means are presented in Table 4 in the

Appendix.

A t test for differences among several means was done. The following conclusions are supported by the statistical findings: (a) the female subjects rated the male computer as significantly more potent than the female computer, t = 5.5, $p < .05$; (b) male subjects rated the female computer as significantly more potent than the female subjects did, t = 5, $p < .05$; (c) also, when the subject had no previous experience, the female subjects rated the male computer as significantly more potent than the male subjects did, t = 4.5, $p < .05$; and (d) female subjects with previous experience rated the male computer as significantly more potent than female subjects with no previous experience rated the female computer, t = 3.4, $p < .05$.

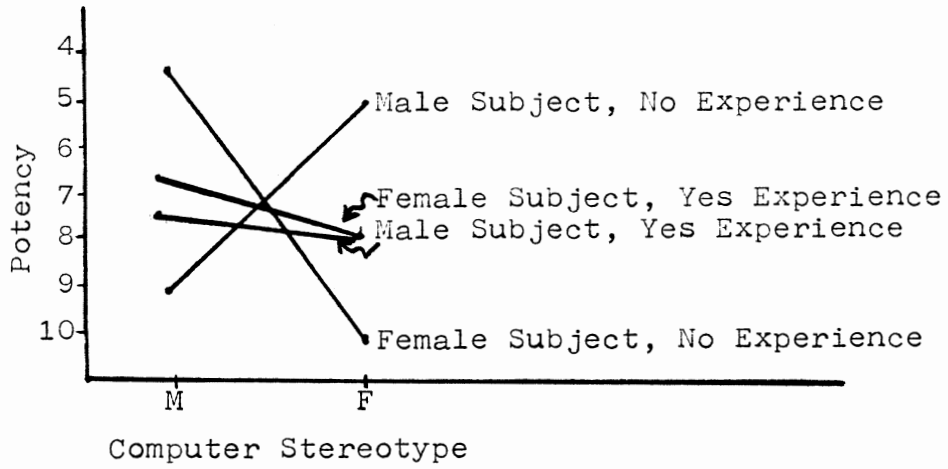

Figure 3. Ratings on Potency Factor by Gender of Subject, Gender of Stereotyped Computer and Previous Computer Experience.

CHAPTER IV

CONCLUSIONS

The goal of this study was to begin to shape a psychological model useful for research on the human-computer interaction. This study proposed two hypotheses:

Hypothesis 1: The COMPUTER will be rated on a semantic differential questionnaire as more similar to MAN than WOMAN; but rated more potent than MAN on the Potency factor.

Hypothesis 2: The computer with the male stereotyped linguistic output will be rated on a semantic differential questionnaire as more powerful than the computer with the female stereotyped linguistic output.

The first hypothesis was supported in Experiment 2a. Although the computer was not rated the same as MAN, the ratings are adequate to assign the label 'ideal' male to the computer. The computer was rated as potent in every experiment, by every group of subjects. The computer does have the attribution, power.

The second hypothesis was partially supported. The computer was rated as extremely powerful in all cases. The female subjects produced the expected results and rated the male stereotyped computer as significantly more powerful. The male subjects, however, produced the opposite results

when they rated the female stereotyped computer as significantly more powerful than the female subjects did. The subjects were differentiated by whether or not they had had previous computer experience. Subjects with previous computer experience were not as influenced by the manipulation of the gender stereotyped language as the subjects with no previous computer experience were. Experienced males and females performed the rating task in a similar way, unlike their inexperienced counterparts.

The possible causes of the males rating the female computer as more powerful produces unanswerable questions at this time. It is possible that a Type 1 error occurred. Also, there was a limitation in that the cells were small. Further, when considering previous experience, the size of the cells was not balanced. Although the Analysis of Variance procedure adjusted for this, it would be necessary to replicate the study with more subjects per cell to be certain that the findings would be replicated with larger, balanced cells. Further research is needed to ascertain the reason for this.

The difference between those with previous experience and those with none leads to two possible explanations: (1) individuals who choose to learn about computers are in some way different from those who do not choose to learn about them, or (2) previous experience on the computer, in some manner, affected the subjects by overriding the experimental manipulation. These speculations form the basis for future research to explore this difference and its cause.

Ideas for Further Research

The beginnings of a psychological model for the computer illiterate, for research based on a social conceptualization of the human-computer interaction, have been established by this study. And use of the computer by this group is rapidly expanding through bank machines, new generation cash registers, home computers, and so forth. In the future the human-computer interaction is likely to be a decisive economic fact of life in our culture. If one can make use of the resources available from the computer, it is more likely that one will be economically stable. This group will be a class, divided by a huge gap, according to Toffler (1981), from the group unable to make use of the resources of the computer. One logical step for research is to find out what differentiates this group from the group with previous computer experience. Another step for research would be to further explore the reasons for the male ratings of the female stereotyped computer.

Possible Practical Applications

This preliminary study demonstrated clearly the attributions that all the subjects make to the computer as a powerful 'ideal' male. It also demonstrated that there is a group of individuals who are sensitive to the linguistic output of the computer. Computers that are being designed for those with no computer experience could put this information to work by designing linguistic output that would be more comfortable for the user, and thereby appear to create

a more equitable situation for the user. Each individual situation could be evaluated to ascertain what level of power is desirable and which gender would be making the most use of the computer. Then the computer could be matched to specific needs so that a more optimum situation would occur. For instance, if a "powerful" computer is desired and mostly females would be using it, male stereotyped linguistic output should be employed.

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APPENDIXES

APPENDIX A

TABLES

Table 3

Ratings on Potency Factor for Male and Female Stereotyped Computer by Gender of Subject

Computer Stereotype	Subject	N	Mean Potency Rating
Male	Male	5	8.00
Male	Female	5	5.80
Female	Male	5	6.80
Female	Female	5	9.60

Table 4

Ratings on Potency Factor by Gender of Subject, Gender of Stereotyped Computer and Previous Computer Experience

Computer Stereotype	Subject	Previous Experience	N	Mean Potency Rating
Male	Male	Yes	3	7.33
Male	Male	No	2	9.00
Male	Female	Yes	3	6.67
Male	Female	No	2	4.50
Female	Male	Yes	3	8.00
Female	Male	No	2	5.00
Female	Female	Yes	1	8.00
Female	Female	No	4	10.00

APPENDIX B

MATERIALS AS PRESENTED TO SUBJECTS IN PRETEST OF GENDER STEREOTYPED LANGUAGE

Folder Number _____

LANGUAGE STUDY

PUNCTUATION

PERIODS, QUESTIONS MARKS, EXCLAMATION POINTS

KINDLY PRESS 'PRESS RETURN' TO GO ON.

PERIODS

RULE #1

A PERIOD IS USED AT THE END OF A DECLARATIVE SENTENCE. WHENEVER A SENTENCE TELLS SOMETHING, THAT IS A DECLARATIVE SENTENCE.

EXAMPLE:

I THINK I SAW THE BIRD IN THE TREE.

KINDLY PRESS 'RETURN' TO GO ON.

RULE #2

A PERIOD IS USED AT THE END OF AN IMPERATIVE SENTENCE. AN IMPERATIVE SENTENCE GIVES A COMMAND.

EXAMPLES:

PLEASE CLOSE THE DOOR ON YOUR WAY OUT.

GO TO THE STORE ON YOUR WAY HOME.

KINDLY PRESS 'RETURN' TO GO ON

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE _____ FEMALE_____

RULE #3

A PERIOD IS USED AFTER MOST ABBREVIATIONS.

EXAMPLES:

FRI. IS THE ABBREVIATION FOR FRIDAY.

THIS IS DR. JONES.

PRESS 'RETURN' TO GO ON.

EXAMPLE:

P.K. GRUMP PH.D. RECENTLY JOINED THE YMCA.

YMCA IS AN ACRONYM (INITIALS OF AN ORGANIZATION USED AS AN ABBREVIATION).

ACRONYMS ARE CAPITALIZED, BUT NO PERIODS ARE USED.

PRESS 'RETURN' TO GO ON.

RULE #4

A PERIOD IS USED AFTER INITIALS.

EXAMPLES:

HIS NAME IS J. C. REYNOLDS.

(OR)

JAMES A. SMITH IS HER FATHER.

PRESS "RETURN' TO GO ON.

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

RULE #5

A PERIOD IS USED AFTER A QUESTION INTENDED AS A SUGGESTION AND NOT REQUIRING AN ANSWER.

EXAMPLE:

HE ASKED WHETHER I WOULD BE ABLE TO JOIN HIM.

KINDLY PRESS 'RETURN' TO GO ON.

EXERCISES-USING THE PERIOD

DIRECTIONS-PLEASE TYPE THE NUMBER OF THE SENTENCE THAT IS PUNCTUATED CORRECTLY.

(1) MR TAYLOR HAS LOST HIS GLASSES.

(2) MOTHERS ARE WONDERFUL

(3) BARBARA K. JAMES IS MY SISTER.

___ SPACE FOR ANSWER

IF CORRECT, THE COMPUTER GOES AHEAD. IF NOT CORRECT, THE COMPUTER SAYS, MAYBE WE SHOULD REVIEW THE RULES USING THE PERIOD AND IT RETURNS TO RULE #1.

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

PLEASE TYPE THE NUMBER OF THE SENTENCE THAT IS PUNCTUATED CORRECTLY.

(1) JANE IS A SWEET GIRL.

(2) THE BUS ARRIVED AT A LITTLE AFTER 4:00 PM

(3) DR PACK WAS ALMOST LATE FOR HIS APPOINTMENT LAST MON.

___SPACE FOR ANSWER

IF CORRECT, THE COMPUTER CONTINUES. IF NOT CORRECT, THE COMPUTER SAYS, PLEASE READ THE SENTENCES MORE CAREFULLY AND WHENEVER YOU ARE READY THEN TRY AGAIN.

PLEASE TYPE THE NUMBER OF THE SENTENCE THAT IS PUNCTUATED CORRECTLY.

(1) JOHN RECEIVED HIS B.A. DEGREE IN SPANISH FROM THE UNIVERSITY OF OKLAHOMA.

(2) COL SAMUEL H. STRAUM WAS THE GUEST

(3) MARY HAS SPENT ALMOST $100 ALREADY

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

TYPE THE NUMBER OF THE SENTENCE THAT IS PUNCTUATED CORRECTLY.

(1) N.A.T.O. WILL HAVE A MEETING THE LAST OF AUG.

(2) WE NEED NINE SQ. YDS. TO COVER THIS FLOOR.

(3) MR. JONES PRINTED MD ON HIS DOOR.

___SPACE FOR ANSWER

IF CORRECT, THE COMPUTER CONTINUES. IF NOT CORRECT, THE COMPUTER SAYS, LET'S REVIEW AND THEN IT SAYS-

SENTENCE 1-NATO IS AN ACRONYM AND DOES NOT HAVE PERIODS AFTER EACH LETTER.

SENTENCE 2-WE NEED NINE SQ. YDS. TO COVER THE FLOOR. (CORRECT)

SENTENCE 3-THERE SHOULD BE A PERIOD AFTER M.D.

PRESS 'RETURN' TO GO ON.

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

NOW ARE YOU READY FOR THE RULES OF PUNCTUATION ON THE QUESTION MARK?

QUESTION MARKS

RULE #6

USE A QUESTION MARK AFTER AN INTERROGATIVE (ASKING) SENTENCE.

EXAMPLES:

(1) WHAT TIME DOES THE DANCE START?

(2) WHOEVER WOULD WANT TO DO THAT?

KINDLY PRESS 'RETURN' TO GO ON.

SOMETIMES A SENTENCE APPEARS TO ASK A QUESTION WHEN ACTUALLY IT DOES NOT.

EXAMPLE:

MARGARET ASKED ME IF I WOULD PLEASE MAKE AN EXTRA ONE FOR HER.

THIS SENTENCE IS NOT ASKING A QUESTION.

IT IS MAKING A STATEMENT ABOUT SOMETHING MARGARET DID.

KINDLY PRESS 'RETURN' TO GO ON.

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

TYPE THE NUMBER OF THE SENTENCE THAT IS PUNCTUATED CORRECTLY.

(1) DO YOU HAVE ANY BANANAS TODAY?

(2) ASK YOURSELF WHAT YOU ARE LOOKING FOR IN EACH PROBLEM?

(3) HE ASKED WHETHER I WOULD JOIN HIM?

_____SPACE FOR ANSWER

IF CORRECT, THE COMPUTER CONTINUES. IF NOT CORRECT, THE COMPUTER SAYS, REVIEW AND THEN SAYS--

SENTENCE 1-DO YOU HAVE ANY BANANAS? (THIS IS CORRECT.)

SENTENCE 2-ASK YOURSELF WHAT YOU ARE LOOKING FOR IN EACH PROBLEM? (SENTENCE #2 IS A STATEMENT. IT IS TELLING THE READER TO DO SOMETHING. THIS SENTENCE SHOULD BE PUNCTUATED WITH A PERIOD INSTEAD OF A QUESTION MARK.)

SENTENCE 3-HE ASKED WHETHER I WOULD JOIN HIM? (THIS SENTENCE SHOULD ALSO BE PUNCTUATED WITH A PERIOD INSTEAD OF A QUESTION MARK, SINCE, IT DOES NOT REQUIRE AN ANSWER. IT IS A STATEMENT.)

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

TYPE THE NUMBER OF THE SENTENCE THAT IS PUNCTUATED CORRECTLY.

(1) WHAT TIME IS IT?

(2) HOW OLD IS BILL.

(3) MARK ASKED JANE IF WHE WOULD SAVE HIM A PIECE OF CAKE?

_____SPACE FOR ANSWER

IF CORRECT, THEN GO ON. IF NOT CORRECT, LET'S TRY AGAIN.

THIS CONCLUDES THE PUNCTUATION RULES ON THE QUESTION MARK. IF YOU NEED TO REVIEW. PRESS 'R". IF YOU DO NOT NEED TO REVIEW, PRESS 'RETURN' TO GO ON.

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

NEXT WILL BE THE PUNCTUATION RULE ON THE 'EXCLAMATION POINT'

'EXCLAMATION POINT'

RULE #7

A SENTENCE WHICH EXPRESSES STRONG EMOTION (DETERMINATION, SURPRISE, ANGER, AND FEAR) IS FOLLOWED BY AN EXCLAMATION POINT.

EXAMPLE:

HELP ME!

PLEASE PRESS 'RETURN" TO GO ON.

RULE #8

AN INTERJECTION IS A WORD OR GROUP OF WORDS WHICH ARE INDEPENDENT OF A SENTENCE AND WHICH CONVEY EMOTION. INTERJECTIONS WHICH CONVEY STRONG OR SUDDEN EMOTION ARE FOLLOWED BY AN EXCLAMATION POINT.

EXAMPLES:

OF ALL THE NERVE! HE TOOK MY UMBRELLA.

WOW! I THINK SHE'S GOT IT!

PLEASE PRESS 'RETURN' TO GO ON.

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

TYPE THE NUMBER OF THE SENTENCE THAT IS PUNCTUATED CORRECTLY.

(1) THE GIRL WENT FOR A WALK!

(2) OH! THAT HURT!

(3) HE ATE HIS SUPPER AT THE REGULAR TIME!

_____SPACE FOR ANSWER.

IF CORRECT, THE COMPUTER TELLS YOU THAT YOU ARE FINISHED AND TO INFORM THE EXPERIMENTER. IF NOT CORRECT, THE COMPUTER SAYS, LET'S TRY AGAIN AND REPRINTS THE SENTENCES.

IF YOU WISH TO REVIEW THE RULES ON THE EXCLAMATION POINT. PRESS 'R'.

IF NOT, YOU ARE FINISHED, INFORM THE EXPERIMENTER.

DO YOU THINK THE LANGUAGE PRINTED ABOVE WAS WRITTEN BY A MALE OR A FEMALE? MALE_____ FEMALE_____

APPENDIX C

SEMANTIC DIFFERENTIAL QUESTIONNAIRE

FIRST ORDERING

Folder Number _____

WORD MEANING STUDY

COMPUTER

Rating

	1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

TIME

	Rating 1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

POLITICIAN

	Rating 1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

DOCTOR

	Rating 1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

MYSELF IN RELATION TO A COMPUTER

	Rating							
	1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

GOD

	Rating							
	1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

SCIENTIST

	Rating							
	1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

MAN

	Rating 1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

MYSELF

Rating

	1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

WOMAN

	Rating 1	2	3	4	5	6	7	
cruel	___	___	___	___	___	___	___	kind
masculine	___	___	___	___	___	___	___	feminine
untimely	___	___	___	___	___	___	___	timely
active	___	___	___	___	___	___	___	passive
unsuccessful	___	___	___	___	___	___	___	successful
hard	___	___	___	___	___	___	___	soft
wise	___	___	___	___	___	___	___	foolish
good	___	___	___	___	___	___	___	bad
weak	___	___	___	___	___	___	___	strong
important	___	___	___	___	___	___	___	unimportant
calm	___	___	___	___	___	___	___	excitable
false	___	___	___	___	___	___	___	true
beautiful	___	___	___	___	___	___	___	ugly
slow	___	___	___	___	___	___	___	fast
powerful	___	___	___	___	___	___	___	powerless

APPENDIX D

LINGUISTIC OUTPUTS OF GENDER STEREOTYPED COMPUTER IN INTERACTION WITH SUBJECTS

FEMALE STEREOTYPED COMPUTER

LINGUISTIC OUTPUT

'PUNCTUATION'

(PERIODS, QUESTION MARKS, EXCLAMATION POINTS)

KINDLY PRESS 'RETURN' TO GO ON.
?

'PERIODS'

RULE #1
A PERIOD IS UED AT THE END OF A DECLARATIVE SENTENCE.

A DECLARATIVE SENTENCE IS A SENTENCE THAT TELLS SOMETHING.

EXAMPLE:
I SAW A CUTE BIRD IN THE TREE.

KINDLY PRESS 'RETURN' TO GO ON.
?

RULE #2

A PERIOD IS USED AT THE END OF AN IMPERATIVE SENTENCE.

AN IMPERATIVE SENTENCE GIVES A COMMAND.
EXAMPLES:

PLEASE CLOSE THE DOOR.

KINDLY GO TO THE STORE.
KINDLY PRESS 'RETURN' TO GO ON.
?

RULE #3
A PERIOD IS USED AFTER MOST
ABBREVIATIONS.

EXAMPLES:
     FRI. IS THE ABBREVIATION
     FOR FRIDAY.
(OR) THIS IS SWEET MRS. JONES

KINDLY PRESS 'RETURN' TO GO ON.
?

EXAMPLE:
     P.K. GRUMP,PH.D., RECENTLY
     JOINED THE YMCA.
YMCA IS AN ACRONYM (INITIALS OF AN
ORGANIZATION USED AS AN ABBREVIATION).

ACRONYMS ARE CAPITALIZED, BUT NO
PERIODS ARE USED.

KINDLY PRESS 'RETURN' TO GO ON.
?

RULE #4
A PERIOD IS USED AFTER INITIALS.
EXAMPLES:
     HER NAME IS J.C. REYNOLDS.
(OR) DIANE A. SMITH IS HER MOTHER.

KINDLY PRESS 'RETURN' TO GO ON.
?

RULE #5
A PERIOD IS USED AFTER A QUESTION
INTENDED AS A SUGGESTION AND NOT
REQUIRING AN ANSWER.
EXAMPLE:
     SHE ASKED WHETHER I COULD
     JOIN HER.
KINDLY PRESS 'RETURN' TO GO ON.
?

EXERCISES-USING THE PERIOD.
DIRECTIONS-PLEASE TYPE THE NUMBER OF THE
SENTENCE THAT IS PUNCTUATED
CORRECTLY.
(1) MRS TAYLOR HAS LOST HER GLASSES
(2) MY MOTHER IS HERE
(3) ANNE B. JAMES IS MY SISTER.

PLEASE MAKE SELECTION AND PRESS RETURN.
?3

TYPE THE NUMBER OF THE SENTENCE THAT
YOU THINK IS PUNCTUATED CORRECTLY.
(1) JANE LIVES AT 417 WEST ST
(2) THE BUS ARRIVED AT 4:00 P.M.
(3) MRS PACK WAS LATE FOR HER
APPOINTMENT LAST MON.

PLEASE MAKE SELECTION AND PRESS RETURN.
?2

TYPE THE NUMBER OF THE SENTENCE THAT YOU
BELIEVE IS PUNCTUATED CORRECTLY.
(1) JANE RECEIVED HER B.A. DEGREE IN
SPANISH FROM THE UNIVERSITY OF
OKLAHOMA.
(2) MRS JANICE H. STRAUM WAS THE GUEST
SPEAKER AT THE LUNCHEON.
(3) JANE HAS TRAVELED, I THINK, QUITE
A BIT.

PLEASE MAKE A SELECTION AND PRESS RETURN.
?1

TYPE THE NUMBER OF THE SENTENCE THAT YOU
FEEL IS PUNCTUATED CORRECTLY.
(1) N.A.T.O. WILL HAVE A MEETING THE
LAST OF AUG.
(2) WE NEED ABOUT 10 YDS. TO COVER THIS
COUCH.
(3) MRS BROWN HAD MD ON HER DOOR.

MAKE SELECTION AND PRESS RETURN.
?2

IF YOU NEED TO REVIEW THE PUNCTUATION
RULES ON PERIODS THEN PRESS 'R'.

KINDLY PRESS 'RETURN' TO GO ON.
?

NEXT, WILL BE RULES OF PUNCTUATION ON
THE QUESTION MARK.
'QUESTION MARKS'
RULE #6
USE A QUESTION MARK AFTER AN
INTERROGATIVE (ASKING) SENTENCE.
EXAMPLES:
(1) WHAT TIME DOES THE DANCE START?
(2) DID YOU WIN THE COOKOFF?

KINDLY PRESS 'RETURN' TO GO ON.
?

SOMETIMES A SENTENCE MAY APPEAR TO ASK
A QUESTION WHEN ACTUALLY IT DOES NOT.
EXAMPLE:
MARGARET ASKED ME IF I WOULD MAKE AN
EXTRA ONE FOR HER.
THIS SENTENCE IS NOT ASKING A QUESTION.
IT IS MAKING A STATEMENT ABOUT
SOMETHING MARGARET SAID.

KINDLY PRESS 'RETURN' TO GO ON.
?

TYPE THE NUMBER OF THE SENTENCE THAT
IS PUNCTUATED CORRECTLY.
(1) DO YOU HAVE ANY BANANAS TODAY?
(2) ASK YOURSELF WHAT YOU ARE LOOKING
FOR IN EACH PROBLEM?
(3) SHE ASKED WHETHER I COULD JOIN HER?

MAKE SELECTION AND PRESS RETURN.
?1

TYPE THE NUMBER OF THE SENTENCE THAT YOU
THINK IS PUNCTUATED CORRECTLY.

(1) WHAT TIME IS IT?
(2) HOW OLD IS SHE.
(3) ANNE ASKED JANE IF SHE WOULD SAVE
    HER A LITTLE PIECE OF CAKE?

PLEASE MAKE SELECTION AND PRESS RETURN.
?1

THIS CONCLUDES THE PUNCTUATION RULES

ON THE 'QUESTION MARK'. IF YOU NEED

TO REVIEW PRESS 'R'.

PLEASE PRESS 'RETURN' TO GO ON.
?

NEXT WILL BE PUNCTUATION RULES ON THE
'EXCLAMATION POINT'.

KINDLY PRESS 'RETURN' TO GO ON.
?

'EXCLAMATION POINT'

RULE #7
A SENTENCE WHICH EXPRESSES
STRONG EMOTION (DETERMINATION,
SURPRISE, ANGER, AND FEAR)
IS FOLLOWED BY AN EXCLAMATION
POINT.

EXAMPLE:
HELP ME!

KINDLY PRESS 'RETURN' TO GO ON.
?

'EXCLAMATION POINT'

RULE #8

AN INTERJECTION IS A WORD OR GROUP OF WORDS WHICH ARE INDEPENDENT OF SENTENCE AND WHICH CONVEY EMOTION.

INTERJECTIONS WHICH CONVEY STRONG OR SUDDEN EMOTION ARE FOLLOWED BY AN EXCLAMATION POINT.

KINDLY PRESS 'RETURN' TO GO ON.
?

EXAMPLES
(1) OF ALL THE NERVE! SHE TOOK MY UMBRELLA.
(2) THAT'S GREAT! I THINK SHE'S SUPER!

KINDLY PRESS 'RETURN' TO GO ON.
?

TYPE THE NUMBER OF THE SENTENCE THAT YOU FEEL IS PUNCTUATED CORRECTLY.
(1) SHE WENT FOR QUITE A WALK!
(2) OH! THAT HURT!
(3) SHE ATE HER SUPPER AT ABOUT THE REGULAR TIME!

PLEASE MAKE SELECTION AND PRESS RETURN.
?2

IF YOU WISH TO REVIEW THE RULES ON THE

EXCLAMATION POINT, THEN PRESS 'R'.

OTHERWISE, INFORM THE EXPERIMENTER.

```
RIGHT
 RIGHT
  RIGHT
   RIGHT
    RIGHT
     RIGHT
      RIGHT
       RIGHT
        RIGHT
         RIGHT
          RIGHT
           RIGHT
            RIGHT
             RIGHT
              RIGHT
               RIGHT
                RIGHT
                 RIGHT
                RIGHT
               RIGHT
              RIGHT
             RIGHT
            RIGHT
           RIGHT
          RIGHT
         RIGHT
        RIGHT
       RIGHT
      RIGHT
     RIGHT
    RIGHT
   RIGHT
  RIGHT
 RIGHT
RIGHT
```

RESPONSES TO INCORRECT ANSWERS ON FEMALE

STEREOTYPED COMPUTER

LET'S REREAD THE RULES USING THE PERIOD.
'PERIODS'

READ THESE SENTENCES MORE CAREFULLY AND
THEN 'TRY AGAIN', ALRIGHT?

LET'S TRY AGAIN.

LET'S REVIEW.
SENTENCE 1- NATO IS AN ACRONYM AND DOES
NOT HAVE PERIODS AFTER EACH
LETTER.
SENTENCE 2- WE NEED ABOUT 10 YDS. TO
COVER THIS COUCH. (CORRECT)
SENTENCE 3- THERE SHOULD BE A PERIOD
AFTER M.D.

KINDLY PRESS 'RETURN' TO GO ON.
?

LET'S REVIEW.
SENTENCE 1: DO YOU HAVE ANY BANANAS
TODAY? (THIS IS CORRECT.)
SENTENCE 2: ASK YOURSELF WHAT YOU ARE
LOOKING FOR IN EACH PROBLEM?
(SENTENCE #2 IS A STATEMENT. IT IS
TELLING THE READER TO DO SOMETHING.
THIS SENTENCE SHOULD BE PUNCTUATED
WITH A PERIOD INSTEAD OF A QUESTION
MARK.)

KINDLY PRESS 'RETURN' TO GO ON.
?

SENTENCE 3: SHE ASKED WHETHER I WOULD
JOIN HER?
(THIS SENTENCE SHOULD ALSO BE PUNCTUATED
A PERIOD INSTEAD OF A QUESTION MARK.
SINCE IT DOES NOT REQUIRE AN ANSWER.
IT IS A STATEMENT.)

KINDLY PRESS 'RETURN' TO GO ON.
?

MALE STEREOTYPED COMPUTER

LINGUISTIC OUTPUT

'PUNCTUATION'
(PERIODS, QUESTION MARKS, EXCLAMATION POINTS)

PRESS 'RETURN' TO GO ON.
?

'PERIODS'

RULE #1
A PERIOD IS USED AT THE END OF A DECLARATIVE SENTENCE.

A DECLARATIVE SENTENCE IS A SENTENCE THAT TELLS SOMETHING.

EXAMPLE:
HE SAW THE BIRD IN THE TREE.

PRESS 'RETURN' TO GO ON.
?

RULE #2
A PERIOD IS USED AT THE END OF AN IMPERATIVE SENTENCE.

AN IMPERATIVE SENTENCE GIVES A COMMAND.

EXAMPLES:
CLOSE THE DOOR.
GO TO THE STORE.

PRESS 'RETURN' TO GO ON.
?

RULE #3
A PERIOD IS USED AFTER MOST
ABBREVIATIONS.
EXAMPLES:
     FRI. IS THE ABBREVIATION
     FOR FRIDAY.
(OR) THIS IS DR. JONES.

PRESS 'RETURN' TO GO ON.
?

EXAMPLE:
     P.K. GRUMP,PH.D., RECENTLY
     JOINED THE YMCA.
YMCA IS AN ACRONYM (INITIALS OF AN
ORGANIZATION USED AS AN ABBREVIATION).
ACRONYMS ARE CAPITALIZED, BUT NO
PERIODS ARE USED.

PRESS 'RETURN' TO GO ON.
?

RULE #4
A PERIOD IS USED AFTER INITIALS.
EXAMPLES:
     HIS NAME IS J.C. REYNOLDS.
(OR) JAMES A. SMITH IS HER FATHER.

PRESS 'RETURN" TO GO ON.
?

RULE #5
A PERIOD IS USED AFTER A QUESTION
INTENDED AS A SUGGESTION AND NOT
REQUIRING AN ANSWER.
EXAMPLE:
     HE ASKED WHETHER I WOULD
     JOIN HIM.

PRESS 'RETURN' TO GO ON.
?

```
EXERCISES-USING THE PERIOD.
DIRECTIONS- TYPE THE NUMBER OF THE
            SENTENCE THAT IS PUNCTUATED
            CORRECTLY.
(1) MR TAYLOR HAS LOST HIS GLASSES.
(2) My FATHER IS HERE
(3) ROBERT K. JAMES IS MY BROTHER.

MAKE SELECTION AND PRESS RETURN.
?3



TYPE THE NUMBER OF THE SENTENCE THAT
IS PUNCTUATED CORRECTLY.

(1) JOHN LIVES AT 417 WEST ST
(2) THE BUS ARRIVED AT 4:00 P.M.
(3) DR PACK WAS LATE FOR HIS
    APPOINTMENT LAST MON.

MAKE SELECTION AND PRESS RETURN.
?2



TYPE THE NUMBER OF THE SENTENCE THAT IS
PUNCTUATED CORRECTLY.
(1) JOHN RECEIVED HIS B.A. DEGREE IN
    SPANISH FROM THE UNIVERSITY OF
    OKLAHOMA.
(2) COL SAMUEL H. STRAUM WAS THE GUEST
    SPEAKER AT THE LUNCHEON.
(3) JOHN HAS TRAVELED THROUGHOUT THE US.

MAKE SELECTION AND PRESS RETURN.
?1



TYPE THE NUMBER OF THE SENTENCE THAT IS
PUNCTUATED CORRECTLY.
(1) N.A.T.O. WILL HAVE A MEETING THE
    LAST OF AUG.
(2) WE NEED NINE SQ. YDS. TO COVER THIS
    FLOOR.
(3) MR. JONES HAD MD ON HIS DOOR.

MAKE SELECTION AND PRESS RETURN.
?2
```

IF YOU NEED TO REVIEW THE PUNCTUATION
RULES ON PERIODS THEN PRESS 'R".

PRESS 'RETURN' TO GO ON.
?
NEXT WILL BE RULES OF PUNCTUATION ON
THE QUESTION MARK.

'QUESTION MARKS'

RULE #6
USE A QUESTION MARK AFTER AN
INTERROGATIVE (ASKING) SENTENCE.
EXAMPLES:
(1) WHAT TIME DOES THE DANCE START?
(2) DID YOU WIN THE RACE?

PRESS 'RETURN' TO GO ON.
?

SOMETIMES A SENTENCE MAY APPEAR TO ASK
A QUESTION WHEN ACTUALLY IT DOES NOT.

EXAMPLE:
MARGARET ASKED ME IF I WOULD MAKE AN
EXTRA ONE FOR HER.
THIS SENTENCE IS NOT ASKING A QUESTION.

IT IS MAKING A STATEMENT ABOUT
SOMETHING MARGARET SAID.

PRESS 'RETURN' TO GO ON.
?

TYPE THE NUMBER OF THE SENTENCE THAT
IS PUNCTUATED CORRECTLY.

(1) DO YOU HAVE ANY BANANAS TODAY?
(2) ASK YOURSELF WHAT YOU ARE LOOKING
FOR IN EACH PROBLEM?
(3) HE ASKED WHETHER I WOULD JOIN HIM?

MAKE SELECTION AND PRESS RETURN.
?1

TYPE THE NUMBER OF THE SENTENCE THAT IS
PUNCTUATED CORRECTLY.
(1) WHAT TIME IS IT?
(2) HOW OLD IS BILL.
(3) MARK ASKED JANE IF SHE WOULD SAVE
    HIM A PIECE OF CAKE?

MAKE SELECTION AND PRESS RETURN.
?1

THIS CONCLUDES THE PUNCTUATION RULES

ON THE 'QUESTION MARK'. IF YOU NEED

TO REVIEW PRESS 'R'.

PRESS 'RETURN' TO GO ON.
?

'EXCLAMATION POINT'

RULE #7
SENTENCE WHICH EXPRESSES
STRONG EMOTION (DETERMINATION,
SURPRISE, ANGER, AND FEAR)
IS FOLLOWED BY AN EXCLAMATION
POINT.

EXAMPLE:
I'M DROWNING!

PRESS 'RETURN' TO GO ON.
?

RULE #8
     AN INTERJECTION IS A WORD OR GROUP OF WORDS WHICH ARE INDEPENDENT OF SENTENCE AND WHICH CONVEY EMOTION.

     INTERJECTIONS WHICH CONVEY STRONG OR SUDDEN EMOTION ARE FOLLOWED BY AN EXCLAMATION POINT.

PRESS 'RETURN' TO GO ON.
?

EXAMPLES
(1) OF ALL THE NERVE! HE TOOK MY UMBRELLA.
(2) THAT'S GREAT! I THINK HE'S GOT IT!

PRESS 'RETURN' TO GO ON.
?

TYPE THE NUMBER OF THE SENTENCE THAT IS PUNCTUATED CORRECTLY.
(1) THE BOY WENT FOR A WALK!
(2) OH! THAT HURT!
(3) HE ATE HIS SUPPER AT THE REGULAR TIME!

MAKE SELECTION AND PRESS RETURN.
?2

IF YOU WISH TO REVIEW THE RULES ON THE EXCLAMATION POINT, THEN PRESS 'R'.

OTHERWISE, INFORM THE EXPERIMENTER.
?

'THAT'S CORRECT'

RESPONSES TO INCORRECT ANSWERS ON MALE

STEREOTYPED COMPUTER

LET'S REREAD THE RULES USING THE PERIOD.

READ THESE SENTENCES MORE CAREFULLY AND
THEN 'TRY AGAIN'.

LET'S TRY AGAIN.

LET'S REVIEW.
SENTENCE 1- NATO IS AN ACRONYM AND DOES
NOT HAVE PERIODS AFTER EACH
LETTER.
SENTENCE 2- WE NEED NINE SQ. YDS. TO
COVER THIS FLOOR. (CORRECT)
SENTENCE 3- THERE SHOULD BE A PERIOD
AFTER M.D.

PRESS 'RETURN' TO GO ON.
?

LET'S REVIEW.
SENTENCE 1: DO YOU HAVE ANY BANANAS
TODAY? (THIS IS CORRECT.)
SENTENCE 2: ASK YOURSELF WHAT YOU ARE
LOOKING FOR IN EACH PROBLEM?
(SENTENCE #2 IS A STATEMENT. IT IS
TELLING THE READER TO DO SOMETHING.
THIS SENTENCE SHOULD BE PUNCTUATED
WITH A PERIOD INSTEAD OF A QUESTION
MARK.)

PRESS 'RETURN' TO GO ON.
?

SENTENCE 3: HE ASKED WHETHER I WOULD
JOIN HIM?
(THIS SENTENCE SHOULD ALSO BE PUNCTUATED
WITH A PERIOD INSTEAD OF A QUESTION MARK.
SINCE, IT DOES NOT REQUIRE AN ANSWER.
IT IS A STATEMENT.)

PRESS 'RETURN' TO GO ON.
?

APPENDIX E

PREVIOUS COMPUTER EXPERIENCE QUESTION

Have you ever taken any kind of a computer course or worked on a computer?
Describe-

Do have access or have you ever had access to a personal (home) computer?
Yes_____ No_____

VITA

Margaret Anne Fulton

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE FEMININE COMPUTER: IMPACT OF MALE VERSUS FEMALE STEREOTYPED LINGUISTIC OUTPUT ON ATTRIBUTING POWER TO A COMPUTER

Major Field of Study: Psychology

Biographical:

Personal Data: Born in Tacoma Park, Maryland, October 15, 1942, the daughter of Mr. and Mrs. Curtis A. Bly.

Education: Graduated from Montgomery Blair High School, Silver Spring, Maryland, in June, 1960; received a Bachelor of Science degree from the University of the State of New York, Albany, in March, 1977; received a Master of Psychosocial Science degree from Pennsylvania State University, Middletown, in June, 1979. Completed requirements for the Doctor of Philosophy degree at Oklahoma State University in July, 1983.

Professional Experience: Research assistant, Pennsylvania State University, 1977-79; elected to membership in the Delta Tau Kappa international honor society for the social sciences; graduate research assistant, Oklahoma State University, 1980; teaching assistant, Oklahoma State University, 1979-1981; Outstanding Graduate Teacher of the Year award, 1981; part time instructor, Oklahoma State University, 1981-1983; Departmental grant for human-computer research.