

AN ETHNOGRAPHIC LOOK AT PERSONAL
COMPUTERS IN THE FAMILY
SETTING

By

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PREFACE

Qualitative research methods were used to gather data from twelve families who owned at least one personal computer in and around the Okmulgee, Oklahoma, area. Three major categories emerged and were labeled: The Addict, The Dabbler, and The Applicationist. There had not been many past research studies done on this topic since it is a relatively new occurrence brought about by information society.

Many people have contributed to the development of this study and made its completion possible.

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CHAPTER I

INTRODUCTION

Every society known about today has had at least some form of five basic social institutions: the family which functions to replace the population, the school which socializes the population, religion which instills purpose in life, government which maintains law and order, and the economy which regulates the production and distribution of goods as well as services. Each institution interacts with the others when change occurs in the culture. In a young society, the family typically contains all the other institutions, but with social maturity the family loses dominance in certain areas as the other institutions grow and expand.

The industrial revolution of the nineteenth century took place principally in the factory and on the farm. The subsequent impact upon the family and educational institutions has proven to be tremendous. The rural family was transplanted to an urban setting where the head of household worked outside the home. The concepts of housewife and children emerged. Children were no longer an asset to family survival nor were they educated at home by the family. Education began losing its elitist qualities

and the idea of education for the masses became the new concept. Presently, there is a new revolution that is affecting the workplace, the family and education -- the information age with its personal computer.

A recent innovation affecting social institutions is the tiny electronic "chip," which permits a decrease in the size and cost of computers while maintaining capability. The chip allows offices and factories to automate and makes the personal computer economically feasible. It is responsible for the emergence of what some people have called "the information age."

A dominant commodity in American Society is information. Roughly 55 per cent of the workforce is generating, storing, producing, handling and transmitting information. The quantity of this information is too much for the human mind to accommodate. Aid typically comes in the form of computer memory devices.

This information revolution is occurring within the family unit in the form of the personal computer. A substantial number of families in America now own a computer. Little is known about why these families purchased the machines, what they are doing with them, or how the machines are influencing them. There are three main uses of the computer within the family: accounting, word processing and entertainment. Based on program sales, accounting is presently the number one function with word processing coming in second and entertainment third.

Some writers have speculated that personal computers have created a new category of misery -- the computer widow. The computer has been cited as a source of serious family distress wherein normal family relationships have been disrupted. One writer suggested that the computer has changed ways of communication, education, recreation, and now seems to be affecting procreation. A popular computer magazine advertised the Apple Widow's Club of America and suggested that computer enthusiasts get their "better half" involved with the computer, too. Other writers feel that children who live in a home which contains a computer will be more computer literate and will more readily accept the machine which has become so socially and economically significant.

If technological innovations of the past are indications of what is to come, the social implications surrounding the computer chip could be profound. Already the fabric of society as well as that of our personal lives is interwoven with the wonders of the small "chip". Television is an example of an innovation of the past and has been the subject of many studies. Like the personal computer, television is time consuming and typically does not encourage interaction among family members -- at least not in the traditional way.

Some studies indicate that people attach both conscious and tacit understandings to culture. In the case of this study, the culture is the home setting where information is processed on a personal computer and

knowledge is used to generate behavior and interpret experiences. Ethnographers assert that conscious culture includes those things known and communicated with relative ease while tacit culture is largely beyond awareness. With this idea in mind, it may be that people who work and play with a home computer are acquiring behaviors with reference to their machines and are attaching conscious or tacit meanings to it.

Statement of the Problem

The problem with which this study deals is the lack of information about families who own a personal computer.

Need for the Study

The goal of science is to learn how to manage the environment in such a way as to make the world a better place to live. Computers are moving into many homes and there is a need to understand how this phenomenon is influencing families since it is a microcosmic example of change in the other institutions. Only with awareness can we manage these influences for the betterment of not just the family institution, but the others as well.

Purpose of the Study

The purpose of this study was to gather, examine, and describe cultural information in family environments involving personal computers.

Research Questions

The following questions are based on Blumer's (7) three premises of Symbolic Interactionism Theory.

Human beings act toward things on the basis of the meanings that the things have for them. Meaning of such things is derived from or arise out of the social interaction that one has with one's fellows. Meanings are handled in, and modified through an interpretive process used by the person dealing with the things he encounters (p. 2).

1. Has the growth of personal computers influenced family relationships?
2. If families are influenced by personal computers, what is the nature of this influence?

Assumptions

This study was based on the following assumptions:

1. Families may be influenced by personal computers.
2. These influences, if present, can be identified and described by ethnographic research methods.
3. The perceptions of family members, specifically husbands and wives, are not necessarily congruent with reference to personal computers.
4. Logical conclusions can be drawn from the verbal and non-verbal behavior of the respondents.
5. The researcher's common sense, intuition, experience, and reason would be adequate to analyze respondent behavior.

Limitations

The limitations encountered in this study include the following:

1. Personal computers are such a recent phenomenon that there was little research to use as a frame of reference.

2. The researcher may not have been sufficiently attuned to the physiological and psychological characteristics of selective perception, habituation and set to minimize the possibility of not understanding from the respondents' point of view.

3. Ethnographic research is time consuming and costly.

4. Qualitative studies may not be replicable in the way generally attributed to quantitative ones.

Definitions

The following terms are defined as they are used in this study:

Ergonomics refers to the physical relationship between persons and their environment.

Ethnography a term used by anthropologists which means qualitative research. Ethnography is said to be the process of describing culture. It means learning from people the conscious and tacit cultural knowledge they possess and use in everyday life.

Habituation is a term used by psychologists to explain the human characteristic of vividly noticing things when they are new. When the new wears off people tend to ignore these things until they are called to consciousness again.

Selective Perception is a process similar to habituation; however, people select out stimuli because they are unable to respond to all of it at once. It comes to their attention as it becomes important to them.

Set is a psychological term used to describe the the human tendency to perceive what is expected.

Organization of the Study

Chapter I introduces the study, presents the problem, need for the study, purpose of the study, assumptions, limitations, and definition of terms. Chapter II includes a review of literature dealing with the family in modern, technological society, impacts of computers on the family, workplace, and education, research design, and a summary. Chapter III describes the methodology and design of the study to include categories of questions and observations, selection of respondents, collection of data, and analysis of data. Chapter IV examines the joining of the personal computer and the family for interaction. Chapter V contains a summary, conclusions, and recommendations for better managing influences of personal computers on the family institution.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to gather, examine, and describe cultural information in family environments involving personal computers. The review deals specifically with the following:

1. Overview of family in technical society.
2. Overview of Innovations and diffusion.
3. Impacts of computers on the family, workplace and education.
4. Research Design.
5. Summary

Overview of Family in Technical Society

According to Demos (14, p. 30), "there is no golden age of the family gleaming at us from far back in the historical past." While history does not provide "clear-cut" lessons, he feels it does lay down certain boundaries in which events are likely to develop. He goes on to say that this is especially true for the family since it is "such a deep conservative institution -- so slow to change, so powerfully interwoven in our personal and collective roots" (p. 30). Demos states that the family "continually

interacts with other cultural institutions and, more especially, with the variable circumstances of its membership" (p. 30).

The nineteenth-century family experienced a wrenching transformation under the impact of industrialization, urban growth, egalitarian ideology, and demographic change (p. 30).

He goes on to say

On the checkerboard of social institutions, the family seems to display a markedly reactive character. Time and again, it receives influences from without, rebuffs them, modifies them, adapts to them. There are dynamic and reciprocal aspects of all this. For nothing has been more durable in the long history of Western family life than its nuclear character (p. 30).

Since the industrial revolution that took place in the factory, concerns for people have emerged in various facets of society. Ogburn (30) asserts that the machine comes so quickly we are unprepared. "We are always behind in adjusting ourselves to it. The machine is forcing our institutions to change, but always they lag behind" (p. 51). He (28) also felt that

Inventions point the way we are going. We adopt them for the immediate use they make for us. But, once adopted, there are hundreds of social effects, as distinct from uses, that flow more or less inevitably" (p. 1).

Ogburn's (44) theory of cultural lag is as relevant today as it was in the 1920's. A society that undergoes rapid technological change will be met with the people adapting at varying degrees to their new environment. The adjustment of mankind to his environment means more than life and death of a group -- it means degrees of adapting

with reference to the social institutions and customs. He used the example of the steam innovations whereby mechanical power was used rather than muscle. The result was work in factories rather than in family dwellings. Hence, the institution of family, economy, etc. had to adjust both directly and indirectly, (i.e., men work away from home, the family adjusts to the absence of this worker and to the new production and additional income. The family institution must adjust to the decline in authority of husband and father, the removal of economic production from the home, separation of husband and wife, and different kinds of education for children.) Simply, put, a change occurs in some part of society which means that this part has adjusted to technology. However, other parts which may be directly or indirectly connected with the changed portion must adapt but not necessarily to the technological innovation itself. Rapid change in modern times, according to Ogburn (29), raises the question of social adjustment--adapt man to culture and culture to man--parts of culture change more rapidly than the people. "A problem occurs when there is a rapid change in a culture of independent parts and when the rates of change in the parts are unequal" (p. 201). He (27, p. 13, 14) states that "the creation year after year of countless new machines keeps us always changing with very little time to rest." Further, "The trouble is largely because technology moves so fast and sociology so slow."

The family, a social institution, does not seem to have the same face it had in pre-industrial society. As a society develops social maturity and modernity, all the social institutions change and the family is no exception. It is not uncommon to hear people discussing whether or not the family will live. According to Rubin (37), this "either-or" quality of will the family survive seems inappropriate. She feels that questions which force alternatives tend to distort and simplify the social reality of the family, denying the subjective experiences of most people living in families. She goes on to say that she is convinced that the family will neither die nor will it live precisely in the traditional way.

For like all institutions in any society, its form is a product of its historical time and place and of its relationship to the other social institutions with which it connects and intersects. Just as "no man is an island," so it is with institutions. They are products of an interactional system -- both shaped by and shaping the world around them (p. 6).

The emergence of industrial society which moved production from the home and into the factory is thought to have affected the ideology surrounding the family institution. Rubin feels that there were two forces which came together to create this ideology and, hence, gave the family a new face.

The move from home to factory meant that some new arrangements would have to be made for the care of small children. At the same time, a series of social and economic changes were sweeping the society -- changes that made women expendable as a part of the work force (p. 6-7).

From these forces emerged the idea of motherhood being a fulltime job which in turn created the idea of childhood which, according to Aries (4), justified the removal of women from the productive part of society and placed them in the home. Prior to this time, Degler (13) commented, children were treated not special, but rather, according to Demos (14), were like miniature adults.

America went through a transition in the kind of work that was done after WWII. Prior to this time, the U.S. was a production-oriented country which included occupations in steel, mining, construction and agriculture, employing men almost exclusively. After WWII, the service sector of the economy began to grow, creating an expanded need for workers, and since the men were employed in production, women left the home and went to work. In turn, there was a need for child care outside the home. Bird (6) suggests that working women are now earning enough money to change the terms of both family and work. Further, her paycheck will often make the difference in the kind of family housing and the kind of education the children get. Education is no longer considered to be for the elite, but for all men and women who want and need it. Education changes the way that people look at themselves, work, families, and children.

Rubin (37) further states:

If, in fact, the family is a product of its time and place in the hierarchy of social institutions, then American families would be

both similar and different -- similar in that they share some common experiences, some elements of a common culture by virtue of being part of the same society; different in that class, race, and ethnic differences gives a special cast to the shared experience as well as a unique and distinctly different set of experiences (p. 7).

Skolnick and Skolnick (15) assert that the family in modern society was seen as "a streamlined, more highly evolved version of the universal family" (p. 4). They further comment:

The traditional or preindustrial family carried out many tasks. It was a workplace, a school, a hospital. According to Talcott Parsons and his followers, the family in modern society underwent structural differentiation or specialization. It transferred work and educational roles to other agencies and specialized in child rearing and emotional support. The modern family thus was no less important for having relinquished certain tasks; it was indispensable because it was now the only part of society to carry out such functions (p. 4).

The implications of modernization are not simply economic or technical, but also include profound social and psychological changes as well. According to Scholnick and Scholnick

It affects all aspects of life: the physical environment, the way they organize their daily lives, the meaning of work, the emotional quality of family relationships, plus the most private aspects of individual experience (p. 13).

They further assert that "family ties have become more intense than they were in the past, and yet at the same time they have become more fragile" (p. 13).

Goode (18) states that modernization promises people the freedom to find work that suits one's talents, freedom

to marry for love and to dissolve that marriage if it does not provide happiness and equality between the husband and wife and between children and parents.

Skolnick and Skolnick (15, p. 16) assert that "families have always struggled with outside circumstances and inner conflict"

Our current troubles inside and outside the family are genuine, but we should never forget that many of the most vexing issues confronting us as men and women, parents and children, derive from the very benefits of modernization -- benefits too easily taken for granted or forgotten in the lately fashionable denunciation of modern times (p. 16).

They further state that

there was no problem of the aged in the past, because most people never aged; they died before they got old. Nor was adolescence a difficult stage of the life cycle when children worked and education was a privilege of the rich. And when most people were hungry illiterates, only aristocrats could worry about sexual satisfaction and self-fulfillment (p. 16).

It seems logical then that families may benefit from the information age with its computers in the home and at work. It also seems logical that families may experience some discomfort as well. Technology has given families appliances which make work easier, yet may have raised the standards of housekeeping as well as relationships within the unit. Technology has given families automobiles and television. All of these inventions and innovations have served to give the family the new face that Rubin discusses.

In an ethnographic study of husbands and wives concerning intimacy and the conflict thereof, Rubin (36) applied recent knowledge on the psychology of infancy and the effect on human development of the fact that women are the primary nurturers of early childhood to explain how the differences between women and men arise. She also used this same knowledge to explain how such critical issues in adult relationships as intimacy, sexuality, dependency, work, and parenting are affected. This psychological knowledge says basically that a boy perceives he must separate his identity from his mother which tends to also separate him from his emotional side. The development of an independent and separate self becomes affirmed by the anatomical differences between himself and his mother-figure. A girl, on the other hand, must never separate herself from that of her mother. The self remains tied to the mother and extended by the father. Consequently, a boy has only one significant other -- the father, while the girl has two -- the mother and the father. Then, according to Rubin (36),

It may not seem like much, but the difference in psychic structure, therefore in personality development, is enormous. For it means that a woman's inner relational negotiations become triangular while a man's remain dyadic (p. 59).

When the two genders come together in a marriage then, there are internalized conflicts inherent which tend to create a gender gap in the social roles and the understanding each to the other. The man almost always

turns first to his work when offering a definition of himself, whereas a woman juggles her roles of worker, mother, and wife simultaneously. Work is considered rational and cognitive while love is emotional and experiential. "Work is mastery, achievement, competition, separateness; love is sensory, feeling, sharing, union" (p. 164). Rubin goes on to say, "In work, we manipulate the environment, seek to change one thing into another. In love, we're concerned with people not with things" (p. 164).

Generally, men still are best at the cognitive, rational mode that work requires, so it's where they turn for validation. Usually, women still are more comfortable in the emotional and experiential mode that interpersonal connections require, so that's where they look for fulfillment. For men, therefore, it's still work that gets their first allegiance, if not in word, then in deed; for women, it's still love (p. 182).

The roles traditionally attributed to husbands and wives have become blurred in modern society. Independence and ability to take care of oneself and others are still prerequisites for manhood. Men are both self-contained and needy, however, the social structure tends to reinforce defenses long ago built to mask the need. These people are trying to live by the new rules and intellectually feel that they are good, but somewhere deep inside there has been an internalization of the old that causes conflicts to arise in many situations.

Suddenly, we find ourselves face to face with our inner sense of the way things ought to be. Suddenly, we had to confront the realization that

we were still dominated by the stereotypic images of male and female roles -- images we would have sworn we had, by then, routed from our consciousness (p. 23).

She goes on to say that the

new definition of the situation means that new rules are developing about the old roles. Just as a man feels freer to accept help from his wife outside the house, a woman is more able to expect help from her husband inside. It's true that quite often she'll still have a battle to get him to share in what has traditionally been defined as "woman's work" (p. 35).

Overview of Innovations and Diffusion

According to Rogers (35, p. 284), "One of the goals of sociological theory is to provide grounds for predicting human behavior." It is this idea that makes diffusion research extremely important. The impacts of the various innovations on society have given many social scientists keys to discovering certain patterns of the diffusion and the acceptance or rejection of the innovation thereof. Rogers feels that it is important to first discover important cultural values and attitudes. Only then is it possible to predict with a fairly high degree of probability whether the society will welcome or resist an innovation. Social norms also influence the diffusion of new ideas and can be a barrier to change. He states that there are two ideal types of norms which operate on a continuum: traditional and modern.

The social system with modern norms is more technologically developed, cosmopolite, literate, rational, and empathetic. The traditional

"player," instead of making a decision as necessity arises, makes up his mind in advance for all possible contingencies (p. 61-62).

He quoted Weber as saying:

In the traditional social system the alternatives to be selected in a choice situation are prescribed by the "authority of an eternal yesterday" (p. 62).

Rogers (35) reported that a common research finding at the individual level is "that innovativeness of individuals is related to a modern rather than a traditional orientation" (p. 75). Further, "an individual's innovativeness varies directly with the norms of his social system on innovativeness" (p. 75).

He went on to say that the adoption process of an innovation comes almost entirely from rural sociology.

Holmberg utilized the concept of a seven-stage adoption process in his Cornell University Anthropology courses. The first stage of his process of "individual cultural change" is availability of the innovation to the individual. His middle five stages are similar to those of the rural sociologists: awareness, interest, trial, evaluation and adoption. Holmberg's seventh stage is integration of the innovation into the individual's routine (p. 81).

Sometimes people can get confused about cause and effect with reference to innovations, and consequently reject it. Rogers suggests that rejection of the innovation can occur at any stage in the process, but often "happens when the results of the trial stage are misinterpreted" (p. 85). Rejection is simply the decision not to adopt the innovation. Research supports the generalization that "relatively later adopters are more

likely to discontinue innovations than are earlier adopters" (p. 91).

According to Rogers, other generalizations are supported by diffusion studies and include such things as

Impersonal information sources are most important at the awareness stage, and personal sources are most important at the evaluation stage in the adoption process. Cosmopolite information sources are most important at the awareness stage, and localite information sources are most important at the evaluation stage (p. 99, 102).

Some innovations diffuse almost immediately while others may take years. The characteristics and nature of an innovation has tremendous effect on the rate of adoption -- or whether adoption takes place at all. Some characteristics of innovations which can affect the rate of adoption are the individual's perceptions of relative advantage, compatibility, complexity, divisibility and communicability. Such things as crises and economic feasibility enter into whether or not an innovation is relatively advantageous. Further, the innovation must be compatible with existing values and past experiences of both the individual and society. Complexity refers to the degree to which the innovation is perceived by members of a social system as difficult to understand and use. Rogers explains divisibility as the degree to which an innovation can be divided for small-scale trials over time. The degree to which results of an innovation can be communicated and diffused to others also affects the rate of adoption. Rogers goes on to say that "innovativeness is

a continuous dimension in that individuals adopt a new idea at different times" (p. 159).

Rogers further identified characteristics that are characteristic of earlier adopters. Research indicates that these people lean toward college education, professional occupations, and middle socioeconomic status. They tend to have personality traits of greater empathy, less dogmatism, ability to deal with abstractions, favorable attitudes toward change, ability to cope with uncertainty and risk, favorable attitudes toward education and science. They also have different communication behaviors from later adopters to include engaging in active information seeking and have greater knowledge of innovations.

Television is a good example of an innovation that has been integrated into society. There have been many studies done on the impacts of television in the family setting. While it is a different medium than the personal computer there are some similarities in that both of these innovations take time away from family interaction.

Some people feel that these two innovations are different in that the computer requires active brain involvement while the television requires only passive. In any case, both the television and the personal computer have been accused of interrupting "normal and healthy" family relations. However, some people think the personal

computer may be the lesser of the two evils. Brody (8) suggests

Of the questions which remain unanswered, one of the most basic bears upon how television viewing influences family relations and the socialization process within the family. The distinct feature of today's family is a lack of involvement or sustained interaction between parents and children (p. 217).

He further states

Given the number of hours that American families spend watching television, questions regarding the effects of a child's passive interaction with a television set rather than active interaction with a responsive parent become of importance (p. 217).

Brody went on to discuss the results of two early survey studies which lend some credibility to the suggestion that television viewing changes the nature of family interactions. Hamilton and Lawless showed that "television viewing was one of the activities in which all family members participated during the course of a week" (p. 217). He said that this research was a bit dated, however, it did seem to support the argument that when families are together they tend to congregate around the television set. Macoby's survey, according to Brody, goes beyond these results and suggests that when children and parents watch television together, they tend to stop interacting except for an occasional exchange during commercials. "The family television viewing environment was described as parallel rather than interactive with the television set clearly dominating family life when it is on" (p. 217).

Impacts of Computers on the Family,
Workplace and Education

Naisbitt (24) feels that the new information society was well underway by the last part of the 1950s. The end of the industrial era occurred in the years 1956 and 1957. Most of today's service workers are creating, processing and distributing information. He states that "it is important to acknowledge the kind of work we do because we are what we do, and what we do shapes society" (p. 14). A reliable way to anticipate the future is to understand the present and what is going on collectively in a local setting is precisely what is going on in America. He goes on to say that the trends in the local settings indicate the direction of the movement.

Naisbitt comments that the potential of microprocessors is awesome and

computer technology is to the information age what mechanization was to the industrial revolution: it is a threat because it incorporates functions previously performed by workers (p. 28).

He further feels that the reason why the microprocessor is causing concern is simply its widespread applicability.

Earlier computer technology could be applied to some products, electronics and large scale office information equipment, for example, but not others. Microprocessors can improve almost anything, anywhere and are consequently far more threatening. In fact, there is virtually no limit to the sectors of the world where microprocessors can be put to work (p. 29).

According to Alexander (2),

The impact of the computer revolution on human behavior has only begun to be measured. How can you possibly keep up with the causes and effects in a field that is capable of change in a split second (p. 186).

He further states that "if computers are capable of bringing out the best in the individual, they can also bring out the worst" (p. 187). Therefore, As we move forward into new unknowns, we need to assess carefully the implications of the movement on our lives. We need to strike the balance between the best of what the machine can offer and what is best for mankind. (p. 188).

According to Nilles (26), there is a considerable amount of literature dealing with possible impacts of computer and telecommunications technologies on society. Most of it, however, deals with the direct effects rather than the indirect. He feels that there are trade-offs that occur as society moves from traditional ways of processing information. There will most likely be impacts on how we view such things as transportation and urban development as well as labor resources and working conditions.

The idea of trading telecommunications for transportation has some fundamental and profound questions that will likely affect social structure, according to Nilles. He goes on to say that during the past few decades "we have come to accept transportation, particularly automobile transportation, as integral to the way of life enjoyed by most Americans" (p. 145). He further states:

Our reliance upon transportation is traditional. It is an accepted belief and custom that going to work is a prerequisite to being able to perform that work. We are now entering an era in which technology permits us to communicate between distant points and to perform certain kinds of work in places far removed from the place where that work will be used or stored (p. 146).

Nilles' research suggests "evolution of the existing urban structure into a new form or community or communities" (p. 149). Land use would likely change because the inner city would again lose dominance and importance. Further, the idea of energy conservation is of major concern today, and technological change that substitutes telecommunications technologies for transportation "would induce a proportionate change in the requirements for the type of delivered energy from gasoline to electricity" (p. 151).

Nilles (26) reported that slightly more than half the work force (roughly 50 million people) are potential part- or full-time telecommuters. Lanier (23) introduced their new EZ-1 Word Processor in an advertisement saying that it was for people who lived too far to commute, but could now be on the staff. They can do office work without coming to the office. This equipment is installed in the home and work is assigned. The work is transmitted via an electronic system activated from home. This type of technology is precisely what is causing the electronic cottages to emerge across the country.

One of the biggest problems confronting technical and occupational schools today is that of maintaining up-to-

date equipment and teaching skills in order to train the worker of the future. Schools typically lag behind technology because of rapid technical change, tremendous equipment costs, and reluctance of teachers to adapt and accept change.

According to Phillips (33),

Vocational educators who don't yet believe that computers will affect their programs need only take a look at the "faster growing industries" list put out by the Department of Labor's Bureau of Labor Statistics (BLS). Almost all of the industries on the list require technically trained workers who have some computer literacy. And the list encompasses virtually every field within vocational education. Savvy professionals will quickly deduce that this means they must be preparing students to work with computers whether their field is health, trade and industrial, consumer and homemaking, business and office, agriculture or marketing and distribution (p. 25).

An increasingly important requirement for education will be computer literacy. "If computers are to be one of the major tools of work in our nation," says Phillips, "no vocational teacher can afford to be ignorant of how they operate" (p. 25). It is extremely important for educators to know how these machines can be used and what they can and cannot do. The only thing that will limit educators is their own imagination.

Vocational-technical education continues to be expensive education. This expense can be realized when educators implement a task analysis with industry. Schools typically lag behind in modern, up-to-date equipment partly because of the high costs involved. The more rapid the

change, however, the more difficult it becomes to stay abreast in the training. During FY 80-81, the State Department of Vocational and Technical Education (11) reported a statewide cost per FTE (Full Time Equivalent) student of \$1,589. The total program cost for the year was \$37,575,743. The limitations of these figures are as follows:

1. The total shown for programs may not be the exact sums because cents were dropped.
2. The costs do not include equipment or facilities to include depreciation.
3. No capital outlay for transportation or depreciation was included.

The state average for business and office training alone was \$46,393 or \$1,554 per FTE. This cost mainly includes salaries and some capital equipment. Less money is being allocated to the programs which in turn will reflect an even further lag behind technological growth.

Many public school systems are moving toward computer literacy. This factor alone is already producing technical students who are more knowledgeable than some of their instructors. According to Time (19), there are approximately 100,000 computers now in U.S. schools. These computers may well be the new paper and pencil. The electronic revolution in the classroom has been slow to occur at least partly because of the teachers' fears of the machine and for their jobs as well as the poor quality of

available software. The quality of the software, however, is rapidly changing for the better.

A recent study done by Stanford University (1) concluded that there was a difference between boys and girls with reference to education in computers. There was a three-to-one margin in favor of boys in computer camps and classes. Further, where high level computer languages were being taught, only one in twenty were female participants. It was also found that as the price for computer classes went up, the number of girls enrolled decreased. The report went on to say that most television ads featured boys at keyboards and that few women were teaching computer classes. Also, out of 87 elementary school children, 13 percent had computers at home and all of these were boys.

In Zientara's (45) interview with B. F. Skinner, there was the comment that Skinner had built one of the first teaching machines, and that he felt computerized teaching could incorporate individual, interactive instruction plus give immediate feedback. There was the suggestion that computers could teach the basics and teachers could go over subject matter where judgment is necessary. He further asserted that computers can give a valuable sense of power which is evidenced by the involvement and concentration exhibited by those using the machine.

According to Nilles' (25) research where he and his research team employed a case study approach to

telecommunications-transportation and the possible tradeoffs involved, he asserted that "decentralization by means of telecommunications offers opportunities for new work styles that are not based on the 40-hour, 9 to 5 work-week" (p. 154). He went on to say that workers are expressing concerns, however. There is the fear that certain nonobjective performance indicators may be lost, the information communications network could mean loss of friendships and a loss in morale, and that the significant social input of verbal and non-verbal communications to self-esteem and self-image of the individual can be seriously diminished.

Thus, the human communication issue goes beyond the simple acceptance of telecommunications mediation for interpersonal interaction. The symbols and attitudes associated with status, control, change orientation, and the use of technology must also be considered part of the communication process (p. 155).

Nilles uncovered another obstacle experienced by workers and that is "a fear of loss of control: the individual frequently does not know 'what is going on in the computer'" (p. 156). He found that those who seem to readily accept the substitutes tend to have a good level of self-esteem, be open-minded, be younger than the average worker, be able to work independently, and are fairly new in the organization. Also, these people have some computer experience and are not in a supervisory position.

He went on to say that many of the tradeoffs and impacts discussed have been based on experimental evidence

and many of them are speculative. However, based on what is known at this time, it seems logical to conclude that broad scale decentralization through telecommunications may have considerable impact on individuals and family groups. Smaller neighborhood work centers will likely be created more and more and, in turn, will likely create "more community identity, both for the individual, the family, and the business organization" (p. 159). The impact of such changes could be favorable in the individual's quality of life due to a healthier environment and "a heightened feeling of identity with his or her community, family and co-workers" (p. 159). It is possible that human frustration could be eased with less traffic congestion and have a beneficial effect on temperament and productivity. Another benefit would be that more and more part-time jobs would likely be created which would serve certain workers better.

Fasciona (16) contends that the human component has too long been ignored in what is coming to be called the "electronic workplace." Knowledge of technology has far exceeded knowledge of psychology and if not remedied then exceedingly high social and economic costs may result.

She feels that the question of accountability is of equal importance when new computers are brought into the business scene. Productivity is boosted since there is rapid access to large quantities of personal information on customers and employees which, in turn, raises the question

of privacy and individual rights. A computer system cannot make the decision as to who has access to information and who will be allowed to add or delete information in an electronic data base.

Productivity will increase in the electronic data base setting, but employees must be considered. If they are not, the "long term price will be in terms of employee stress, apathy and even resentment" (p. 279). She urges that employers consider computerized hardware and software in terms of the adaptability to employee's needs and not vice versa.

Baily (5) states that the tasks which a personal computer can do are many to include storing the household's financial information, balancing bank accounts, establishing budgets, computing income taxes, keeping financial records of income received, checks written, debts incurred, and investments made. It can store such things as birthdays, appointments, and due dates for bills. Further, recipes and menus can be stored in the computer and can be adjusted to accomodate different sized groups. There are devices available to control the temperature settings of heating and cooling systems for different times of the day or night. Other devices may assist with maintaining home security. The computer has the potential to revolutionize homes in a number of ways.

It will change the character of work and the location of work, shifting millions of jobs out of factories and offices back to where they came

from originally, the home. The computer will make possible a return to cottage industry on a new electronic basis and with it, a new emphasis on the home as the center of society (p. 201).

She goes on to say that there are a number of reasons why this might be possible.

First, the number of workers who manipulate physical goods has been reduced in the last decade or two and an increasing amount of work is being done in offices that could be accomplished anywhere, if one had the necessary equipment. Another factor which might encourage a return to work at home is the high cost of transportation. Another potential cost saving to the company is that the plant itself could be reduced in size which would reduce the overhead costs of heating, cooling, and maintaining the plant. The worker who does not need to spend two hours commuting also will gain increase leisure time which could allow him to spend more time with his/her family (p. 201).

She further said that "the present era is an electronic one. How individuals and families live in this era will involve choices, changes, and many new challenges" (p. 202). She feels that during the remaining years of the twentieth century the personal computer will become a common household fixture. Churchill once said, "We shape our buildings, and then our buildings shape us."

Collins (9) commented on the importance of understanding the implications of increased interaction with electronic devices in the home. The effects on lifestyles, health, and interpersonal relationships are likely to be profound.

Children and other family members may spend hours each day gazing at the video screen and working the computer keyboard, playing a variation of space wars or practicing programming skills.

Visual fatigue or even more serious physical effects can result from their looking at the cathode ray screen for extended periods of time. These are but a few of the potential causes for caution (p. 17).

On the other hand,

the high degree of computer literacy that the user of a personal computer can develop in a very short time may be a great benefit for now and the future -- a benefit that should not be underestimated, for computers are changing the way Americans do things at home, at school, and at work. Civilization as a whole is moving into an information age in which a computer-literate populace will be as important as energy and raw materials (p. 17).

Baily mentioned that the personal computer can serve many beneficial capacities to include tutoring, entertainment, record keeping, and wordprocessing. However, the fact that the computer will do difficult tasks with relative ease does not justify a sizeable investment if the tasks are seldom needed.

Nor is anticipated time saving a justification since it may be minimal or nonexistent in view of the number of hours spent in entering data, loading programs, or in actual writing or debugging programs (p. 17).

Research Design

Short, et. al, (40) conducted a quantative study on the social psychology of telecommunications where there was an attempt to verify theories of human behavior. One correlation between a personality measure and media differences was discovered.

Although weak, this correlation seemed to show that people who were clearly oriented towards other people rather than toward things were more favourable to the medium with higher Social Presence and thus toward the people met via such a medium who must seem more like people rather than inanimate bodies (p. 158).

Social Presence was conceived as a single dimension representing cognitive synthesis as perceived by people. and is the capacity to send and receive information about "facial expression, direction of looking, posture, dress, and non-verbal cues contribute to Social Presence of a communications medium" (p. 65).

Short further states that non-verbal communication has been important to workers; however, information transmission is an activity where interpersonal relationships are relatively unimportant. On the other hand,

nearly everyone would agree that bargaining, persuasion, and getting to know a stranger are activities which could only really be carried out with another person; it seems ludicrous to even conceive of trying to persuade a computer that its opinions are wrong (p. 158).

Glaser (17) advocates generating theory rather than verifying it in an attempt to produce a grounded theory. In the course of qualitative research, one generates conceptual categories or their properties from evidence; then the evidence from which the category emerges is used to illustrate the concept. "Accuracy is not at stake so much as establishing the structural boundaries of a fact" (p. 24).

The underlying basis of grounded theory is it must fit the substantive area to which it will be applied, and it must be carefully induced from the data.

A theorist's task is to make the most of his insights by developing them into a systematic theory. His sociological perspective is never finished, not even when he writes the last line of his monograph, since thereafter he often finds himself elaborating and amending his theory, knowing more now than when the research was formally concluded (p. 256).

Schatzman (39) suggests that the field method of research is much like an umbrella of activity under "which any technique may be used for gaining the desired information, and for processes of thinking about this information" (p. 14). The researcher can examine historical documents and other secondary sources. One can also survey a sample of a large population in order to obtain leads on situations. Case studies of occupations, persons, and events may help also. Each of these techniques have their own logic and can be used exclusively. "There is no rule which forbids using a mixture of them in field work" (p. 14). Schatzman further discusses the exclusive use of interviews or questionnaires posing methodological problems for the researcher who thinks situationally about the people being studied.

These are fine tools insofar as they reveal people's constructs of themselves and their worlds as symbolically developed and rendered: people tell what they do and why they do it. However, two major difficulties flow from reliance -- exclusive of observation -- on these research techniques. First, any given person may

be no more able to describe and explain his own actions than anyone else's: his vocabulary may be poverty stricken, or his perspective too difficult to comprehend by listening or reading alone (also, he may lie or "put on" the interviewer). Second, interview or questionnaire procedures constitute situations in their own right; therefore, what persons report in either case often better reflects those situations than the referential ones which the techniques were designed to ascertain (p. 6).

He discusses strategies for analyzing the data after it is gathered and discusses the importance of discovering classes and their linkages. The analyst need not link every class; however, he will likely perform this task until "a guiding metaphor or general scheme emerges in his thinking as he interacts with the data" (p. 111). This allows the researcher to become selective of the classes to look for, to refine further, and to link up with other classes. He suggests that there are three broad, general classes: common, special, and theoretical.

According to Weiss (43), less formalized quasi-experimental designs can be developed to meet the needs of a qualitative study. These designs are feasible and practical as well as being suitable for an action setting. As in the case of formal designs, these kinds of designs must be systematically derived and fit the substantive area.

According to Spradley (41), qualitative research ranges in scope from macro-ethnography to micro-ethnography. While data collection is the same for both,

there are differences in the length of time and complexity of the social situation under study.

Wolcott (1967) selected a Kwakiutl Village in British Columbia with a population of about 125 people. Hicks' study of Little Laurel Valley (1976) focused on ten different settlements with a total population of about 1300 people. With a colleague I did ethnographic research on a small urban bar. Our ethnography of Brady's Bar focused only on those social situations important to the cocktail waitresses (p. 29-30).

Spradley further states that with this type of research the scope can be narrowed down to a single social situation, such as a friendship. Even within a small, single situation the focus can be narrowed further to interaction within the group. He also suggests that the research is generally done "with a single general problem in mind: to discover the cultural knowledge people are using to organize their behavior and interpret their experience" (p. 30-31).

Glaser (17) supports Spradley's ideas of the ethnographic scope being narrowed to small numbers in order to gain qualitative, indepth observations. The narrow scope is what he calls substantive research. The formal type is the equivalent of Spradley's macro-ethnography.

Dalton (12) experienced some special problems in his research to include obstacles of renegeing informants, quest of objectivity in covert research, predicaments of knowing too much about the company, and escaping identification with any key groups under study. He used the techniques of formal interviews, a work diary, and participant-

observation. According to Dalton, the aim of this kind of research is to get as close as possible to the situation and to interpret it from the inside. It's important to relate this world to its surrounding community and to describe both unique and typical experiences and events as a basis for theory.

Patton (32, p. 135), states that "observations should last long enough to get the job done." Sociological studies vary, according to Patton, from a month to years. He goes on to say that qualitative research designs "allow for considerable mixing" (p. 110). The extent to which qualitative and quantitative methods are mixed and employed is a matter of degree.

In practice the naturalistic approach may often involve moving back and forth between inductive, open-ended, and phenomenological encounters with research settings to more hypothetical-deductive attempts to verify "hypotheses" or solidify ideas which emerged from those more open-ended experiences. A variety of mixes, then, are possible--mixes of measurement, design, and analysis (p. 110).

Sax (38) discusses interviews which are important to the gathering of qualitative data. The interview represents "a direct attempt by the researcher to obtain reliable and valid measures in the form of verbal responses from respondents" (p. 232). It also allows for observing both what the respondent has to say and the way in which it is said. The interview "is useful in collecting personal information, attitudes, perceptions, or beliefs" (p. 233).

"Observations must be used," according to Kerlinger (22, p. 554), "when the variables of research studies are interactive and interpersonal in nature and when we wish to study the relations between actual behavior."

Spradley (41) discusses cultural description which is the central task of ethnography and is the first step in understanding the human species. Its goal is to describe and explain the regularities and variations in social behavior. Ethnography seeks to document the "existence of alternative realities and to describe these realities in their own terms. It can provide a corrective for theories that arise in social science" (p. 14).

He also discusses ethical principles involved in doing qualitative research: consider the informants first; safeguard informants' rights, interests, and sensitivities; communicate research objectives; protect the privacy of informants; don't exploit informants; and make reports available to informants.

The ethnographic research cycle has six steps. These steps are circular and are: collecting ethnographic data, making an ethnographic record, analyzing ethnographic data, asking ethnographic questions, and finally selecting and ethnographic project. The researcher goes through the cycle as many times as feasible and then undertakes the final task which is writing the ethnography.

According to Patton (32), there is often a trade-off in doing both qualitative and quantitative research.

Under conditions of limited resources, we can look at a narrow range of experiences for a larger number of people, or a broader range of experiences for a smaller number of people (p. 98).

He goes on to say

There is no rule of thumb that tells a researcher precisely how to focus. The extent to which a research question is broad or narrow depends on the resources available, the time available (p. 99).

Patton feels that the small sample size is probably the "most typical situation in the use of qualitative methods" (p. 101). Generalizations are generally not permitted in the rigorous sense; however, logical generalizations can sometimes be made from the evidence produced in studying a single case. He used as an example from physics.

In Galileo's study of gravity he wanted to find out if the weight of an object affected the rate of speed at which it would fall. Rather than randomly sampling objects of different weights in order to generalize to all objects in the world, he selected a critical case--the feather. If in a vacuum, as he demonstrated, a feather fell at the same rate as some heavier object (a coin) then he could logically generalize from this to all objects. His findings were enormously useful and credible (p. 103).

Kanter (21) did ethnographic research on one company which represented a search for explanation and theory rather a report of empirical research. She was interested in understanding social reality and its impact on the people who experienced it. The book is "empirically grounded in a case study of a single organization, primarily within one division" (p. 292). She further states

I have disguised Indsco's identity as best I could, and I have occasionally changed details of numbers and stories, for a variety of ethical and legal reasons. I promised confidentiality and anonymity to everyone with whom I came into contact; this was an important part of the surveys, and I also felt that I would not want to violate the confidences of many people who gave me information that could potentially have negative impact on their jobs (p. 292).

She used various sources of information in developing her concepts and drawing conclusions which provided the basis for both quantitative and qualitative analysis. The design included content analysis of performance appraisal forms, a mail survey of several hundred people, interviews with the first twenty women to enter the sales force, group discussions which were recorded verbatim, participant-observation in meetings, and individual conversations.

Kanter was able to establish a rapport with the company some years before she decided to do the research project so she was allowed to roam as a consultant and outside researcher. "Short of taking an inside job, I would not have had access" (p. 297). Since her interest extended to the system as a whole, she found that the "best way to wander over such a large territory was to ask people to tell me all that they knew rather than try to discover it for myself by personal observation" (p. 297). She worked back and forth between the field and the literature, formulating hypotheses and questions and tested field observations through literature review. She believes, along with C. Wright Mills, that reading can also be a valid form of research.

According to Kanter,

there is a need for studies that take a close look inside one organization. Large corporations are often formidable and mysterious to people outside them. Corporations are often equally mysterious to the people inside, whose views can be limited and parochial because they rarely get a sense of the whole (p. 4).

Rubin's (37) ethnography was based on an intensive study of fifty, white, working class families who shared common characteristics. They were all intact families, both the husband and wife had no more than a high school education, the husband worked in what is traditionally defined as a blue-collar occupation, the wife was under forty at the time of the study, and there was at least one elementary-school age child under age twelve still in the home. In order to gain a frame of reference for the definition of working class, she interviewed twenty-five professional middle-class families whose characteristics match the study group with the exception of education and occupation. All the people in her study participated in intensive interviews -- 100 in all and approximately 1,000 hours. With tape recorder in hand, she interviewed every working-class family in their home -- in fact, she said, "they welcomed me into it" (p. 10).

Not so with the professional middle-class families where several suggested meeting in my office because, they said, the house was too crowded, children too noisy, or privacy impossible (p. 10).

The respondents came to her primarily by way of referral.

She states:

In order to limit the bias inherent in such referrals, however, and to ensure that I was not meeting people who were all connected with each other in some way, I took no more than one referral from a family, always selecting the referred family in favor of the most distant connection. Thus, when I had the choice of a friend or an acquaintance, I interviewed the acquaintance. The success of the strategy may be judged by the fact that the families I am writing about turn out to be representative of Americans of that class as they have been measured in national samples with randomly chosen populations (p. 11).

Her interviews were not her only source of information. She felt that much of her life had prepared her for the task in that her "roots" were in the working class. She commented on her awareness that the methods of the study and the style of presentation were vulnerable to criticism from colleagues in the social sciences.

The small sample not randomly chosen makes generalizations suspect. The anecdotal presentation raises the question of representativeness in the use of the data. The only answer to these criticisms lies in the quality of the work itself -- in its ability to persuade by appealing to a level of "knowing" that exists in all of us but is not very often tapped; in its ability -- to borrow a phrase from psychology -- to generate an "aha experience" (p. 12).

Rubin feels that both quantitative and qualitative research are important and essential to understanding human behavior; however, one without the other produces only a fragment of knowledge. Qualitative research is designed to capture the experiences of the women and men who make up the numbers for quantitative analysis. In the process of gathering her data, she talked with a single respondent for many hours which made possible a rapport and allowed her to

probe into places generally hidden from public view; to see and hear things I would ordinarily not have dared to ask about; or, if asked, people would be reluctant to answer. Perhaps more important, it taught me the things I ought to be asking, since in such situations people want to talk about their concerns as well as yours. Sometimes theirs were the same as mine; sometimes not -- but always I tried to "hear" what was important to them, and to think anew about the concepts and theory I brought with me into the research field (p. 14).

Rubin took every precaution to protect the anonymity and confidentiality of the respondents. She permitted them to read her manuscript before it went to the publisher because their feedback and approval was important -- that she had been "on track".

Summary

The social institutions respond to technology by adjusting and adapting to change either directly or indirectly. The American family, however, seems to be a markedly reactive institution while at the same time maintaining its traditional nuclear nature, i.e. husband, wife and children. This institution, like the others, is a product of the historical time and its relationship to the other social institutions. Families have changed form over the years due to technological change and urban growth. The automobile and television are two examples of technology which are thought to have influenced the family tremendously. Technology has now made ownership of a personal computer economically possible for some families. The benefits and costs to family life are unknown and there

has been little research on the topic. Small computers are also entering the other social institutions, specifically the workplace and education which may change the way families act, think, and feel toward themselves, work and school.

Both qualitative and quantitative research methods are important in understanding behavior. The qualitative design advocates generating theory rather than verifying it in an attempt to produce a grounded theory. The basis of grounded theory is that it must fit the substantive area to which it is applied and it must be carefully induced from the data. During and after data collection, the researcher analyzes for categories and themes which become the findings. Ethnographic research ranges in scope from macro to micro with the differences being length of time and social situation complexity. There are ethical principles involved in doing this kind of research which evolve around consideration of the informants.

Chapter III

METHODOLOGY AND DESIGN

The purpose of this study was to gather, examine and describe cultural information in family environments involving personal computers.

Selection of the Ethnographic Project

The ethnographic approach was chosen because of the newness of the entry of the personal computer into the family and the workplace. Qualitative research methods are excellent tools to better understand the people in their environment. Quantative methods were not used in this study, however, the researcher is fully aware of the value of such designs. It is felt that quantative methods of research can only work if there is an awareness of the problem which is where the value of qualitative methods lie. The two methods combined can produce more logical, valid and reliable results. So it is that qualitative research cannot be separated from the quantative for the latter would not be possible without the former.

The scope of the research was narrowed to twelve families who own a computer in and around the Okmulgee, Oklahoma, area. This, according to Spradley (41), would be

classified as micro-ethnography of a single social situation. Further, this research was topic-oriented which served to further narrow the focus to personal computers and its possible influences within the family.

Selection of the Respondents

The respondents were chosen based on their ownership of a personal computer, their residence being within a 40-mile radius of Okmulgee, and the family containing both husband and wife with secondary school children living in the home (or the family being associated indirectly with secondary children in the community). They were either volunteers who agreed to participate in the study or referrals from area families. Their occupations would be classified as professional in that the personal computer owners were medical doctors, doctors of education, school teachers, and private business persons. Most of the families were two-career families while others contained one member who worked outside the home and one who worked as a homemaker with a small family business in the home. The ages of the adult family members ranged from 35 to 52. Contact was made initially by gaining volunteers to participate in the study and acquiring referrals for other families. Numerous hours were spent interviewing and observing. Generally, one session lasted about four hours at which time the tape recorded data was transferred to a data disk and analyzed.

Asking Ethnographic Questions

In order to gain a better frame of reference regarding relevant questions to be asked, because of limited time and other resources, and to acquire possible respondents and/or referrals, the researcher developed an open-ended questionnaire (See Appendix). Spradley (41, p. 32) states that "both questions and answers must be discovered in the social situation." He goes on to say that Black and Metzger had summarized this point very well.

It is basic to communications theory that you don't start getting any information from an utterance or event until you know what it is in response to -- you must know what question is being answered. It could be said of ethnography that until you know the question that someone in the culture is responding to you can't know many things about the responses. Yet the ethnographer is greeted, in the field, with an array of responses. He needs to know what questions people are answering in their every act. He needs to know which questions are being taken for granted because they are what "everybody knows" without thinking. . . . Thus the task of the ethnographer is to discover questions that seek the relationships among entities that are conceptually meaningful to the people under investigation (p. 32).

Collecting the Ethnographic Data

The methodology of data collection followed the interview and direct observation method characteristic of qualitative research. The data was principally gathered from twelve families who own a computer. These families live within a 40-mile radius of Okmulgee, Oklahoma. Broad descriptive observations were made, recorded and analyzed.

Then focused and selective observations followed. The general descriptive observations, however, continued throughout the study.

Analysis of Data

The first step in analyzing the data was to keep an ethnographic record which is generally thought by Spradley (41) to be the bridge between observation and analysis. While the researcher went into the setting with some specific questions, most were discovered from the families themselves. The notes were analyzed, categorized and put into rough draft form after each session in order to discover the emergence of more questions and similar and different categories.

Writing the Ethnography

The writing in rough draft form began early in the study so that observations and interviews could be made if questions emerged. There was open-ended inquiry throughout the course of the study which served to give direction. Writing was an important part of this research which aided in the final analysis. To aid in this final step, an outline was made involving the topics to be included. This divided the actual writing into sections, units or categories. Native folk terms were used to aid in describing the cultural knowledge of the informants. Every attempt was made to protect the respondents' identity and

confidentiality. Many examples were included in the study and several people agreed to read it for clarity and as Spradley (41, p. 34) said to "enhance the communicative power of the description."

Chapter IV

PRESENTATION AND ANALYSIS OF DATA

The purpose of this study was to gather, examine and describe cultural information in family environments involving personal computers.

One of the first patterns that emerged with the computer owners was their willingness to talk about the machine and what they did with it. Overwhelmingly, however, it was the men in the families that were the most enthusiastic, and tended to use computereze more. The word computereze refers to the technical terms associated with computers, i.e. keyboard, monitor, disk drives, floppy disks, CPM, DOS, RAM, interface, etc. Some of the women were extremely interested, but the machine did not dominate their conversation. There were some women who did not like the computer and wanted nothing to do with it. All of the people, however, were cordial and willing to talk about the computer and their family.

Three major categories of computer owners emerged among the men interviewed: The Addict, The Dabbler and The Applicationist.

The Addict

The Addict was the kind of person who seemed to get lost in the computer and was apt to be described by self and spouse as an "addict." One man described himself:

Sometimes I feel almost possessed -- like an alcoholic. The last couple of weekends, for instance, I've spent almost the entire weekend and sometimes up to five o'clock in the morning. I didn't intend to or want to. I wanted to quit earlier, but just kept going. It can become an addiction.

He went on to say:

It irritates me, too, that there are a lot of other things I need to be doing or should be doing. I get so involved in this and then I feel guilty -- like the yard or cleaning the garage -- let things go because of my fiddling with the computer.

This guilt that he mentioned came out often in the Addict group of personal computer owners. When asked what drove him, he explained: "In a way it's like an ongoing crossword puzzle. You get to one end and there's relief and excitement."

One wife describing this excitement said:

He gets real excited when he discovers something that he didn't know it would do. It's exciting for him. That's OK as long as he doesn't wake you up at two o'clock in the morning to tell you about it. You get up in the middle of the night to go to the bathroom and here comes this guy excitedly saying "guess what this thing just did?".

The drive seems to be wound up in acquiring a certain mind set and being unwilling to give up. One man said that

he liked it (the computer) because he could see an ultimate result.

"I know I can figure it out. I feel elated when I get it figured out. Conversely, I feel very frustrated and that's another reason I don't want to quit. I can get a stiff neck."

He went on to say:

The most frustrating thing is that you have to read a book every time you get a new program because there's no universal symbols. Take the wordprocessing programs, for instance. Each one is different and uses a totally different set of symbols. You'd think you could take this thing, stick it in, and it would be self-explanatory, but that's not the case. When computing gets to that point, then I think the public will really accept computers. There's just too many different systems now -- and they are not self-evident on how to operate the program.

Another Addict commented,

It's hard to quit because once you get all your information down in your head and are set to go -- there's a warm up. I have to get my mind set -- all these things in my mind and that takes time. It takes concentration. Once you leave, all that is gone. When you come back you've got to generate all that information in your mind again. You don't want to do that -- just do a little bit more and you'll have it. This seems to lead you into a little bit more -- next thing you know it's two o'clock in the morning. You get things set in your mind and if you get distracted you've lost it. I've had people say why don't you write it down. If I write it down -- documentation -- I lose the mind set.

Some of the wives in this category reacted by saying they detested the computer, others say that they have their own business to attend to. One commented that she had no interest (at least at this time) in the computer. She said she had visions that "if I ever get involved in it, I'll be his slave. I'll get to do the redundant, repetitive stuff

while he does the hero stuff". She laughed then and said "I've met him before." Another commented on mutual courtesy: "If we need him, we wait till we see him come up for air and then say we need to talk to him when he gets a break -- sometimes that doesn't work because he forgets."

A wife said:

He seems more absent-minded than ever before -- at least about things other than the computer. The kids and I will tell him something and he'll swear that we didn't. I'll call him to eat and sometimes he'll acknowledge with just a minute which generally leads into several. Or he'll acknowledge and then say he wasn't told when he wanders out and dinner is over -- and his is still waiting for him. It's really frustrating sometimes.

The Addict families seemed to be gadget-oriented in that they like to have the latest thing on the market. It was not unusual for these people to have recently acquired something new like the portaphone. Many of them had been into the monitor radio, the citizen's band radio, calculators, solar energy devises. The husbands explained it by saying that they were the early adopters. One husband explained:

There's several kinds of people. I was into computers because it was just a fad. I was doing Apples before Apple was a household word. I like to think I'm different and unique -- when everyone gets computers I may turn off and go to something else. I don't necessarily like being like everyone else. I go through phases -- like I've got the only solar converter on the block-- (laughed) it doesn't work.

Another reported that he couldn't remember exactly when or how his interest in computers began, but

I'm always looking for toys of some kind -- like this. I like mechanical things. It started out as another gadget. I really like gadgets. So it was just a gadget that I could buy, but this turned out to be a gadget that was a never ending toy. A perpetual something you can do to it. It's really the perfect toy.

A wife described her Addict as "He just never stays static -- it's always ongoing -- wanting to know something new and different."

A husband replied:

We're never satisfied with what we've got. Look at all we've bought since the initial unit -- the ergonomic chair, the 7-dollar coffee cup, the puzzle, the sunglasses, the programs. The opinions of the peers are important. State of the art equipment -- more begets more. This could feasibly create problems for some.

Another stated:

We're curious. We have to know -- we are the kind of people who would be out on the parameters of the battlefield and get blown up by the bomb just looking around -- we have to know -- we ask questions -- and we get actively involved. Early adopters like us have an inherent drive -- its like a fire inside.

He further stated that there were "a lot of people around the country who like computering for what it is. This core group have had their day for the last couple of years."

They'd better make big hay out of it, because something else will come along and take its place. This group of people will come up with many of the applications that the others will use. The personal computer, as we know it today will probably fade out. It has invaded our lives, but it will not be at the forefront like it is right now. It will still, I think, impact our lives.

The computereze dominated the conversation of these people. When asked about being a "gadget person", there

was a reply that started out with the machine and then went to other things.

Especially since my computer. One of the first gadgets was the automatic repeat -- I hit any key -- touch any key -- and it goes zap right on across. Well, I thought that was kind of clever. I just recently got a new telephone for this room. It's the automatic redial. I'm always trying new things -- the first to try anything. I am an early adopter. Which gets me in trouble sometimes. I've got a new car -- the diesel -- I just had to have it. I got a number pad for the computer. I had to have the extendaport and the joy stick. I've got all these slots outside the computer -- then the system saver. I want a Cadillac -- I want it all -- greed, I guess.

Computereze not only came out in the conversations, but in the behaviors as well. While interviewing these people, they would be handling their computer or thumbing through a computer magazine. One man, looking at a magazine, said "Oh, by the way -- microzene -- magazines on disk. I notice that Sears is putting their catalog out on a video cassette." (paused, pointing to a page). Then he said, "go ahead." A Addict's wife reported that she sometimes got tired of the conversation always being computer connected. "He'll ask me to go out to lunch or dinner and what do we talk about -- computers." Another said that it seemed like the first thing she hears in the morning and the last thing at night was computereze. In response to family conflict, one man replied that there hadn't been much conflict.

It's therapeutic for me. I'm totally engrossed in what I'm doing. My wife tells me that I need to spend time with my child. I look back over my life and it was always something that took me

away to one degree or another. Perhaps she's accepted this part of me. We've been married 20 some years.

He went on to say:

Each family needs something in common to hold it together. We all play the games -- some. My wife does the checkbook on the computer. Before the computer she did it by herself and now we do it together sometimes. We are working together more. The computer is taking the place of a lot of things -- TV, arcade games, typewriter, calculators -- I suspect someday we'll have a second computer.

Another Addict's wife reported:

Sometimes, when he's been on the machine for a long time, he'll come and get me to help him do something on the computer. I don't know much about it. He'll sit down and start to work and there I am left standing watching. So, generally, I just go off and do something else. It might be different if I had my own computer, I don't know.

With reference to conflict in the family, one wife said that she felt a little frustrated because she couldn't understand "how he could spend all that time on the computer." She went on to say,

He's always been the kind of person who was going to spend his time doing something. So this was just gearing it in another channel. After a while, I saw that the man really enjoyed it -- so why worry about it. There were no arguments. We've been married a long time and I pretty well understand him.

An Addict said he and his wife started trying to justify the purchase by trying to figure what kind of returns they could get on "this investment". In the past, this family had purchased elaborate camera equipment which had eventually paid off in the form of projects and books done for royalty payments with certain publishers. They

could not foresee any such return on the computer equipment.

So, he reported:

I finally decided that I just wanted the equipment and that we could afford it. So, we bought it. I wasn't able to foresee any returns on the camera equipment either, but I was never honest enough with myself to say it.

His wife, however, reported that she felt that he had already made up his mind about the purchase of the machine and was doing a "sell job" on her. While it was a lot of money, she went on to say that they could afford it and really was no problem. "He wanted it, he had to pay for it." Another zealot reported that he didn't sit down and ask his wife what she thought about it.

In this case, I took the initiative. She was rather passive -- in fact, real passive. I did discuss it with her after I had already decided to buy. Then we sat down and had a talk. She didn't know how much it would cost exactly and I didn't either. I knew there were some things I wanted.

He went on to say that he uses his wordprocessor for personal and employment correspondence. "I'm through with typewriters -- totally finished. I can't handle those things anymore. There's just no comparison."

Another Addict expressed that his wife "really had reservations in the beginning -- I think she thought I had completely flipped out this time. But she has really come around and accepted it. She's doing things on it now too." He went on to say that he knew she would accept it because it was really important to him.

One of the wives summed up by saying

My first idea was that this was just another expensive gadget that he's got to have. It's become a hobby for him. This is a relief. He's finally found something he really likes. One thing I'll say about the computer, it keeps him a busy and he struggles through and has more patience with this thing than anything ever before. I would have sworn that it would not have been this way.

Generally, these people justified the purchase of the computer based on the idea that they just wanted it, and then went on to say that they also bought it for accounting purposes, wordprocessing, programming capabilities and perhaps someday a return. Returns were not the big item in the purchase, however. If they realized a return, then that made the purchase even better. The cost of the machinery was a bit bothersome to the Addicts and their spouses, but generally for a size-cost basis.

One reported,

It bothered me some. This may be immaterial, but we didn't have to borrow the money. I had a savings account that took care of it. But spending \$5,000 dollars -- that's almost what we paid for our first home. And then I remember thinking, my gosh -- I got it all in the back seat of the car.

Another said,

When I first got this thing and put it together, I thought, my God, I've been had. I opened up the computer and it was totally empty. \$3,000 bucks, you take this thing home and there's nothing under there.

A wife retorted,

I picked up a program for him and paid the balance of \$500. The salesman hands me this envelope and I asked him if there wasn't a box or

something. He said "nope, that's it." I remember looking at it and saying "this is \$1,000?" At least they could give me a big cardboard box to make me feel like I got something. My mind just can't handle this. You want something that weighs more than two ounces.

Addicts reported a general lack of job satisfaction.

One man in his mid forties said:

You know, when I was young, I really thought that I could and would set the world on fire. That I would make a difference. As the years went by, I began to realize that I was just another cog in the machinery. I haven't been doing what I really like to do -- I'm not sure anymore if I know what I really like to do. My computer has done away with some of those feelings. Oh, I know the world will not be significantly different because of me, but now it doesn't matter so much as time goes by and I have my computer to challenge me.

Another man, about the same age, said "It's almost as if it's (the computer) has given me back my self-respect."

He went on to say

The computer has allowed me to break out of the feeling that I was not in control. My interest in it has also allowed me to teach it to others. It has also given me the idea that maybe I can retire someday soon and do what I want to do. I don't feel so fenced in.

A wife reflected the attitude of the others when she said:

Oh, sometimes, I get so aggravated when he's on that thing. I feel alone. But you know, he's been happier. So, I guess I can't complain because when he's happy, I'm happier.

Some of the Addicts reported having stress related problems like arthritis, headaches, stomach problems. When asked how the computer seemed to be helping general lack of job satisfaction one answered:

In a word -- self-fulfillment. I feel a lot of stress especially on the job. I've also had some physical ailments that are probably stress related. Since my computer, I still hurt, but I hurt in a different way. I can tolerate more. I get feedback that I'm doing something worthwhile -- and it's more of an internal feedback. The interrelationship that I have with this thing -- it's just rewarding. We like each other -- we compliment each other. It's like he buys me a trophy.

One Addict mentioned that the computer might give him a chance to get out of his profession.

I just might be able to design a program that will be beneficial to everyone. If I could sell the program, it (the job) would end forever. I'm sure that there either is or will be a need for a consultant to a computer programmer -- that's a possibility, too. Right now, there's a whole language devoted to my particular profession.

With reference to creativity and the personal computer, many of the people in this group reflected the idea,

"I've never been so creative in my life. Imagination is worth more than education -- and there's nothing that stimulates my imagination more than it does. You've got to be creative to use the computer. It does not stifle creativity.

The socioeconomic backgrounds as children emerged with many of these people. They perceived that their family had been poor and that they had felt deprived of many things. The attitude of "I want it all" came through in their conversations. One man reported feeling

the need to break away from that kind of life. I was tired of doing without. I could see others with things I wanted. I wanted those things too. Now I can afford them and we get them.

The Addict approaches the personal computer at home as though he were possessed. The men in the family were the primary users. The women generally cared nothing for the machine except in some cases used it for wordprocessing or accounting. These families sometimes played the games, but not in any systematic fashion. There was a definite gender gap between husbands and wives with reference to the personal computer. The husbands expressed feeling guilty at spending so much time on their computer, but the excitement and power associated with it allowed them to push aside the guilt and continue.

Both men and women experience frustration associated with the machine, but expressed it differently. The men felt frustrated because they couldn't solve a problem. The women felt frustrated because their husband spent so much time on the computer and appeared to be absent-minded. A part of the frustration appeared to be connected to the cost involved in maintaining the personal computer. Some of the Addicts, in fact, referred to their computer as a "he" rather than an "it". The husband generated the need for the computer and engineered the purchase. The wife generally acquiesced in that she had no serious reservations one way or another. The lack of job satisfaction was a big item within this group. These people tended to be gadget-oriented in that they purchased the latest innovation to be found on the market. If they had not purchased it, they were thinking about purchasing

it. The husbands' in this group generally perceived that the socioeconomic status of their mother and father had been low. They expressed feeling deprived much of the time.

The Dabbler

The Dabbler was the kind of person who at first appearance exhibited the demeanor of being into computers only lightly, but turned out to be a devoted fan of the whole personal computer movement. The Dabbler family experienced some of the same predicaments as found in the Addict family. However, they were not as much into the programming aspect. These people primarily used pre-packaged programs. They do tend to be gadget-oriented and tend to try harder to justify the purchase based on cost-benefit. This family likes some of the games and are extremely conscious of educational programs for their children.

The Dabbler expressed the desire to spend more time on the computer but refrained at least during "prime time". When asked why, he said that he felt guilty about taking time away from the family. (He started fidgeting in his chair and then got up and walked across the room. He came back and sat down.)

Sometimes, after the family has gone to bed -- and I can't sleep, I get up and do my thing on the computer. I'm not as much into programming as I would like -- mainly because of the time I'd have to put into it. I'll be watching TV with

them and I find myself thinking about something I'd like to do on the computer -- then I get to wishing I could go do it, but I don't because I'd be taking time away from them. Then I feel guilty for even thinking it.

Where does this guilt come from -- can you explain so I can understand?

It's a challenge -- when I get on it I don't want to get off. I could sit at the computer for hours if it was just me. I can't do that, I owe too much to them. I feel like I'm denying them of my time. We're separated during the day and we don't have a lot of time to be together. I guess that's why I sneak in here late at night. A computer is kind of like another woman competing for my time. I perceived that real quick. I think it comes back to me and the challenge. I can't conquer that thing.

Another Dabbler said that maybe he just wanted a servant. "If I was smart enough, I could tell that thing to do anything and it wouldn't back-talk me -- it'll do what I tell it to do. Maybe deep inside we're looking for a slave." He went on to say that man has always wanted to make his work easier whether it be from the use of slaves or computers. A computer might "give me an edge -- put it in my favor."

So why guilt? "I guess the bottom line is I'm not with them when I should be. It claims my time and I feel guilty so I just don't work on it whenever I want to." Another man replied after much thought that he really didn't want to put up with the hassles that might come from other family members because of his time spent on the computer -- so he just doesn't spend much time on the machine when the family is around. "Unfortunately, the

only time I have is time that is family time."

The crazy part of all this is, my wife doesn't really hassle me. So it must come from inside me. If she starts feeling neglected, she'll tell me. But most times, she's got things that she wants to do and is probably glad that I'm out of her hair.

Do you ever feel guilty about your work away from home?

No, not like I do here at home anyway. I'm not sure I can explain why. There's a difference. I don't understand it because I'm at home when I'm on the computer. I guess I don't want to upset her (talking about his wife). I don't want any hassles either.

He went on to say that the computer was "an awful lot like having another dependent. There's always something else to buy to support it -- you turn around and you've got lots of money tied up in it."

My wife has never gotten into the computer much. For me, I see so much potential that can be done with the machine. It's a challenge. It could help me make money. The difference may be that little boys like to play with cars -- or things. Maybe this thing is like a car. It tests your imagination -- makes you think. At the same time, makes you cuss it, too.

The Dabbler expressed a general lack of job satisfaction. One man expressed that he had loved his job until about three years ago and then seemed to burn out. Shortly after this time, he engineered the purchase of a personal computer to use in his business outside of his main job. These people have been working for several years and been married for about twenty. "It may be a point in life that I'm going through and I feel like I'm treading water or something. I just don't know -- it really disturbs me. The computer may be a way to get into

something different." He went on to say that he thought maybe at this stage in his life he was looking for independence and yet he didn't totally want to break away from the workplace. They sometimes feel that they are "locked in and can't make the decisions -- I don't feel free. Then the old guilt trip hits again."

The question of justifying the expenditure of the computer and mutual agreement between the Dabbler husband and his wife created much conversation. In most cases, it was the husband whose interest in the personal computer peaked and then he went about selling the wife on the idea. In most of the families, there was some kind of small business operated out of the home. The major source of family income, however, came from working for an employer.

One wife commented:

I've been doing the bookkeeping for our small business in addition to taking care of the house and the kids. He told me if we had a computer all I'd have to do was push a button and it would spit out all this stuff. Boy, was I wrong (shrugging her shoulders and rolling her eyes back). He said it would save me lots of time. When we started pricing them, all I could do was grab air at first.

One man said that he first became interested in the computer when he saw a few people at work using it for classroom grades, examinations, and lessons. Also, a night course had been developed by one of the administrative employees using the TRS-80 and later the Apple. This course had been drawing not only people connected with the school, but area people as well.

It seemed that many of my friends and colleagues were always talking computers and I didn't understand what they were saying. Then it seemed that everything I read about small businesses talked about uses of the computer. I didn't know beans about the machines -- still don't. There's always something else to learn. Now I can at least talk DOS, RAM, and CPM. I even know the importance of putting the cover on my printer. We had just bought the printer and got all the toggles toggled -- that pesky thing should have worked. We worked and worked -- finally called someone. You know what he said? Put the cover on. Sure enough, it worked. Sure felt dumb.

The idea of computereze began emerging and slightly dominated thoughts and conversation, but not nearly to the extent seen in the Addicts.

A Dabblers wife reported that the cost of the computer really bothered her at first. "When he first took me up there and showed me -- this was just \$1300 but you've got to have this, this and this."

One husband said:

We walked away from the store the first time saying to ourselves, how much can you tie up into this thing. So the concept of the hardware and the software -- we couldn't separate the two. I told one guy I wanted a general ledger and he showed me one for \$1200 and I thought, "heck fire, I've already got \$2000 invested in this thing and that's \$1200 more -- why?" Now we do. You've got to first sit down and figure out what you want to do and then get a software package compatible with that and your pocketbook.

Cost always came up in this manner. While both were concerned about the money, it was the wife who expressed more concern -- sometimes near shock at "the cost of this new gadget."

When asked "How did you justify spending this much money for a computer?", one replied:

I can't say that the computer has saved us a dime. The computer has cost us. But we don't utilize the computer to its potential. Mainly, because we don't know how.

In general, however, they felt that their small business could absorb the cost. They also had felt in the beginning that the machine would save them time and money. When asked "Do you feel like the computer saves you any time?", one wife laughed and rocked back in her chair and said:

Not yet! Maybe when we learn how to use it it will. He spends three-fourths of his time looking in the book trying to figure out what key he's supposed to press for that data base program.

One Dabbler was optimistic, however.

No, we haven't saved any time on the computer yet. But you take things like the grading system -- it's going to take time to get that data in, but the end results is going to be tremendously time saving. When you can figure final grades for five to six classes of students -- 160 of them -- in about fifteen minutes, that's time saving.

Another wife confidently reported that she felt the computer would someday pay off with reference to the small business. Her husband confirmed that there was no pay-off right now, but when he got all the data entered it would be worth it. "It will allow me to keep track of the business much more efficiently."

The Dabbler couples generally reported that there was mutual agreement with reference to the purchase of the personal computer. However, in most cases, there seemed to be more acquiescence on the part of the wife than total

agreement. Shrugging her shoulders, one wife said, "well, he wanted it -- and I didn't know anything about it."

One Dabbler's wife commented with reference to mutual agreement that there was no disagreement. "He needed it -- so he got it. It was just a matter of fact as I recall -- that's the way it needed to be."

Another said, "You know, he hasn't been real happy with his job -- not in a long time. Now he seems more content."

"Who spends the most time on the computer?" In response to this question, one woman reported that she did not spend much time on the machine -- maybe an hour or so a week. "I don't have time -- not with the kids -- there's too many interruptions. It would be neat to be able to sit down with no distractions." She went on to say that her husband spent more time on the computer than anyone else in the family. "When he gets started working on those software programs, he doesn't want to quit."

Her husband confirmed her statement.

I don't get totally consumed in it, but now if I'm in a process I don't want to give up that process. I don't want to give up that -- I want to go ahead and get it done. Once you start something for various reasons you just don't want to quit -- you want to keep going until you get to the end result.

He further commented:

Now, I'll tell you something else -- if we didn't have young kids and other interests, that computer would get used a lot more. If we had a room separate from the rest of the house it would be different. Right now the computer lives in the kitchen/dining area.

His wife chimed in (laughing).

Yeah, we're going to support our computer -- we are going to buy a house so it can have its own room.

Another wife stated that she would like to spend more time on the machine, but right now she only feels secure with it when her husband is not around.

He is so smart and I feel inhibited when he's around. So I play around with it (the computer) when he's not around. Needless to say, I don't have a lot a time doing it this way since I work away from home all day. I still don't get as engrossed as he does. It can dominate him for hours.

Some of the people talked about creativity and expressed the idea that it did not take away from but rather aided. "You see a concept and it gives you an opportunity to see things you have not seen before and then gives you the opportunity to expand." Another person commented, "I just don't buy this business of a computer not being creative -- it can creatively expand the mind." The computer has been accused of having no personality and doing away with individuality. One man commented:

Look at personality -- some people say that a computer has no personality. But the person who does the programming has personality and that comes through -- you better believe the computer has personality. You take a little guy and go through a word spelling program and the little ole' guy runs the letters up the pole and shakes his head yes or no at you. Now, come on, that's personality.

Why did you refer to the character as "the little ole' guy"? The idea of a personal affinity emerged as found in

the Addict group where the computer was referred to as a "he".

(Laughed) I did didn't I? I don't know. I guess I think of the computer as a "he" and some of the little characters as "guy".

One of the wives was asked if she attributed a personal pronoun to their computer and she replied:

Well, not generally. I usually call it an "it" or "the computer". But sometimes I think of it as a "he". I'm not sure why unless its something like the old stereotype that girls are not good in math, but boys are. It's so logical and men are supposed to be logical -- maybe that has something to do with it. Funny thing, isn't it? I wonder. (shrugging her shoulders and looking thoughtful)

Negativism seems to occur in some people any time a new innovation emerges. Why is this?

If a person has a tendency to be negative and if this person is outspoken in his ability to be negative, it's awfully easy for others who also have a tendency to be negative to join in -- and I think that there's a lot of negative people. When you don't understand something, it's awfully easy to be negative about it.

Another husband commented:

I can see where the computer could create some internal problems, and I can see where it would be better for a family as a unit if all members were interested in a thing. You can compare the computer widow to the golf widow or this widow or that widow. I can see where one member of the family might be totally turned off by something and that there might be problems. The computer, television, golf -- these are convenient things to blame. I don't buy that stuff about computer widows -- if it wasn't the computer it would just be something else.

Finally, back to the original question, why you are different came the responses that they were not afraid of the computer but rather looked at it as a tool -- a

challenge. "It teaches you logic. If you do something that doesn't work, then you have to do something else that will work logically -- this may be where our kids will really benefit." He went on to say that he was business oriented as well as he and his wife being in education. "The old ways of doing things were OK a few years ago, but to the businessman time is money. If the computer does nothing else it can cut time and that's money in the pocket."

A wife in education carried this idea a bit further.

The computer can't teach. It can't make value judgments. If it is given a problem that is not programmed into the memory, it can't handle it. I think one thing that makes people like us different is that we are aware of the competition in the world. We know what these kids have to face when they get out of school. You've got to give them every advantage -- else they'll be left behind. If computers is where it is then you'd better go with it.

Few families in the study belonged to a data base subscription service. The exception to this was one of the Addicts. The overwhelming reason given by the husbands was cost. "All calls are long distance which would make the cost per hour to exceed \$10." The wives, however, often did not know anything about the subscription service.

When these people talked about their childhood, they almost always talked about feeling deprived. There was never enough money for frivolous items -- in some cases, there was not enough for some necessities. Job security

was of utmost importance. They, like the Addict and the Applicationist respected education because it was "a way to break out and buy goodies."

The Dabbler group was enthusiastic about the computer and wanted to spend more time on the machine but did not because of guilt. They felt that they were depriving their family. Yet, they often expressed the desire to be working or playing on the computer while being with the family. Many of them, like the Addicts, spent late night hours on the personal computer. The computer was justified because of a small business outside of regular employment and there was the hope that it would pay for itself. As found in the Addict group, the couple said there was mutual agreement when it came time to purchase, but it was the husband who generated the need and the wife who acquiesced.

The idea of the development of a personal affinity with the computer was expressed by the husbands who referred to their computer as a "he" or in a masculine sense. The couples also claimed that the machine was like another dependent. Some of them said that it was almost like a mistress stealing time.

As found in the Addict group, the Dabbler seemed to experience a general lack of job satisfaction and was looking some kind of satisfaction. It was also discovered that this group were gadget-oriented and felt that their parents had not had a lot of money to spend frivolously.

The Applicationist

The Applicationist group simply liked the computer because it met certain needs like wordprocessing, grades for classes, and accounting. They did not spend any more time on the machine than it took to do these chores. Generally, there was not much interest in programming or hacking. Hacking is a term used for the process of constantly changing or modifying program lines. Some of the games are interesting, but these people generally were not enthusiasts. They can talk computerese, but don't except on rare occasions. The Applicationist generally did not express a lack of job satisfaction as found in the other two groups. The people in this group expressed cost of the equipment as being important, but was not a source of conflict for the family. They were gadget-oriented to a degree. They, like the Addict, justified the purchase primarily on the basis that they wanted it with little thought to cost-benefit. Those wives who were even slightly interested in the computer fell into the Applicationist category.

One wife confirmed that she used the computer to make certain things easier, like wordprocessing. When the job is done, she doesn't care about spending more time in front of the CRT. An Applicationist said that he got his computer for the sole purpose of wordprocessing. "It's a fancy typewriter."

One Applicationist talked about the computer forcing consistency. He understood enough about the computer, its internal workings, and human behavior to surmise

For those who are interested in that sort of thing they can look at all the information and make comparisons about it. Some relationships, say in the medical profession, could be uncovered that we don't even know exists. It can give a whole new slant. Our basis of right and wrong is so nebulous. The computer doesn't deal with this -- it's objective. It's a fascinating world.

Another commented that the computer provides the answers, and people have to supply the questions.

It gives you the answer first. You have to know what you want the computer to answer. You have to ask the right questions. It's the first machine that's come along with the answer and not the question. Logic and consistency is important.

These people tended to justify the purchase of the personal computer based on perceived need and want. One Applicationist said that he didn't "justify it economically."

I just figured that I was getting to the age that I could do what I want to do. It seems that all my life I've done without. You see, my parents didn't have a lot of money. In fact, by today's standards, we would be classified as "dirt poor". We didn't know anything about the depression, because "they was us."

Another Applicationist said,

When I grew up my parents didn't have any money -- what money they had, children sure didn't get any of it. I had never had anything in my life that I just had because I wanted it and because I could afford it. So I bought it because I had the money and I wanted it.

A wife replied with reference to mutual agreement,

I guess there was no mutual consent -- I just knew what was coming. You just know-- I neither agreed nor disagreed. He wanted it -- he got it -- he paid for it. If that's what he wanted to spend his money on, then that's fine with me.

These people generally became personal computer owners for one or two major reasons, i.e. some of them are writers, both professional and as an avocation; others wanted a tax accounting program. They are not really interested in the internal workings of the computer.

I'm not at all interested in the internal workings of that computer. I want it to do what I want it to do and forget it. I compare it to my automobile. As long as it takes me where I want to go, fine. I'm not interested in tearing it down or modifying it in any way.

Another said,

The technical aspects do not concern me. All I want to do is use the programs that someone else has developed to make things easier and more efficient. I took the computer course out at the school and did OK with programming, but that's just not my bag.

The Applicationists tend to get just as involved in their computer as the Addicts and the Dabblers but it tends to come in "spurts". They tend slightly to be gadget-oriented in that there was microwaves, clocks, radios, portaphones in the home, but they are not true gadgeteers. One man who is into wordprocessing said that he did not consider his computer a gadget, but rather a "souped up typewriter."

When I get on it I can't quit -- I am primarily a writer and these ideas get going in my head -- I compose on the machine. It's a mind set. I get this information -- ideas in my head -- I compose on the machine. It's a mind set and I don't want to lose that at least for the time.

An Applicationist wife commented that neither of them were extremely gadget-oriented. "If it works, OK -- if it doesn't, I'm not curious why. I just want it to work."

Another husband replied that the computer did in fact save him time after he understood the unique commands of his wordprocessor program.

You know, when you compose on a typewriter and there's an error, what do you do? You start over. With the wordprocessor, you can compose and there's no frustration associated with making mistakes because of having to redo a thing. You can move paragraphs around, check spelling and grammar. You can edit on the screen before ever putting it on paper.

A wife reported that she used the computer for tax purposes.

It does save me at least a week at the end of the year. I used to put all the tax stuff together. Now we do it from the computer and we enter stuff periodically. It's not a big job at the end of the year.

Another wife reported feelings of insecurity.

I've had some accounting and I really like seeing things on paper. I don't like that information being in the computer. I can envision it being lost. I personally find computers a pain to deal with. What if there's a power failure or the sucker gets unplugged. I don't like trusting that machine. He does -- it's just the differences in our personalities.

The idea of using personal pronouns didn't readily emerge from the Applicationist group, however, when asked they replied that the computer was often referred to as "sucker", "idiot", or "dummy". One Applicationist said that he sometimes glared at the screen and said something

like "You idiot" -- referring to the computer. When asked why he thought this happened, he replied:

Damned if I know. The machine isn't the dummy or the idiot. But it's almost as if it's a person -- but you wouldn't call a person names like that. Might think it, but wouldn't say it out loud. Most of the mistakes I make on this machine are due to being tired or inattentative and it (the computer) consistently calls me on it.

The feelings of guilt did not come out in this group. The only counterpart to that felt by the Addicts and the Dabblers came from a woman Applicationist. She uses the computer occasionally in the evenings or on weekends when she has a particular job to do. The job cannot be done at work due to lack of equipment and/or time. Therefore, several hours may be spent on the computer just doing a job, i.e. wordprocessing or accounting. When asked if she ever felt guilty, she replied:

Oh, yes. Especially when the kids or my husband start yelling for something. I tend to lose track of time when I'm working on it. So lunch time may come around and someone yells at 2 o'clock in the afternoon if there's going to be anything to eat around here. Truth is they could fix it themselves just as easily as I can, but they don't and then I feel guilty.

Where do you think this guilt comes from -- What is it that makes you feel guilty? She leaned back in her chair and after a while thoughtfully said that she really didn't know, except that maybe "home stuff" ought to be for the family and not for work.

Maybe I feel I'm neglecting my duties as a wife and mother -- I don't know. Sometimes it makes me angry though, that they all feel like they can bother me -- it's different with their dad. We

don't bother him, generally, when he's in the middle of something. Funny thing, though, if they left me alone I'd probably feel hurt and neglected (laughed). Guess I can't be pleased.

The Applicationists were the users in that they used the machine for special purposes, i.e. wordprocessing or accounting. Those wives who were even slightly interested in the computer fell into this category. Generally, the Applicationist was not interested in the internal workings of the computer, but rather in that it worked. A lot of the work was done at night simply because of the regular daytime jobs. This group experienced some frustration, but they generally did not report the "highs" experienced by the other two groups when they had a "break through". There was a gender gap in this group with reference to mutual agreement and time spent on the machine. It was the husband who engineered the purchase and the wife who went along neither agreeing nor disagreeing. The computer was justified in very much the same ways as reflected by the Addicts -- they wanted it, they could afford it, they bought it. The only feelings of guilt reported were from the women users when they were doing a time consuming project. There was a kind of personal affinity toward the personal computer, but generally personal pronouns were not used. The lack of job satisfaction was not discovered in this group as found in the other two. All three groups, however, were pro-education and training. They were open to the possibilities and impacts of the personal computer on families, jobs, education -- society in general.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Influences within the family institution are microcosmic examples of what is happening in the other institutions of society with reference to the impact of the personal computer. The impacts of the industrial revolution have proven to be tremendous. There have been changes in education, government, religion, the economy and the family. Again, society is in the midst of change with the electronic "chip" creating a reduction in computer size and cost. The new age is more information centered than previous ones and no occupation will be left totally untouched. The family is being affected by this revolution at work, home, and school. This social institution is interacting with the others in accomodation and adaptation of the new age. The industrial-age family did not have exactly the same face as in pre-industrial society. The information-age family is changing again because its form is the product of its history, its present and its future.

When culture changes, people are thrown into transition, shifting from the old norms and roles to new and often strange ways of life. At best the new ways are exciting and painful for the people who must live them. The information age is changing the way people act, think

and feel toward themselves, families, education, and work. Simply preparing people to work is not enough. There must also be understanding of the social/psychological processes and the integration thereof. By taking closer looks at what goes on inside the family institution, one can often find clues as to what motivates people. The family reflects the needs of education and the workplace. Conversely the later reflects the needs of families.

The silicon "chip" that decreased the size and cost of computers has allowed the personal computer to emerge. There are many families who own at least one such computer. The problem with which this study deals is the lack of information about families who own a personal computer.

The purpose of this study was to gather, examine, and describe cultural information in family environments involving personal computers. The methodology employed in this study of twelve families in and around the Okmulgee, Oklahoma, area relied on interview and observation methods characteristic of qualitative research. This study was specifically designed to answer the following research questions using an ethnographic approach:

1. Has the growth of personal computers influences family relationships?

2. If families are influenced by personal computers, what is the nature of this influence?

Findings and Conclusions

This study dealt with the influences of the personal computer in family settings where three major categories emerged and were labeled The Addict, The Dabbler, and The Applicationist. The most dominant cultural theme was a gender gap surrounding the personal computer in the family setting.

The families in this study were being influenced by the personal computer and the nature of these findings/cultural themes were as follows:

1. There was a gender gap between husbands and wives in the personal computer home.

2. The husbands and wives in the personal computer home experienced role conflict within their perceived social roles.

3. The masculine gender was attributed to the personal computer mainly in the form of the personal pronoun "he."

4. Husbands experienced frustration in terms of machine performance and wives experienced frustration in terms of the husbands' time spent on the computer.

5. The personal computer families tend to be gadget-oriented and the husbands expressed a general lack of job satisfaction.

Conclusions with reference to these findings/cultural themes were as follows:

1. In this study a gender gap was found to be prevalent in the families who own a personal computer. Ability was apparently not the cause of the wives' general lack of enthusiasm for the computer. While some women claimed that they did not like the machine and wanted nothing to do with it, there were many others who did well at programming and applications. They just did not get as involved as the men did when it came to working and playing on the computer. The women tended not to trust the machine in that they wanted to be able to see what it had stored in memory.

Rubin (36) established that there was a difference in the socialization processes of men and women using recent knowledge on the psychology of infancy and the effect on human development of the fact that women are the primary nurturers of early childhood to explain these differences. Many experts have thought that the two sexes could be made more alike by changing such things as the kinds of toys children play with and the kinds of books they read. Rubin's approach does not support these notions and could explain the gender gap phenomenon found between husbands and wives who own a personal computer wherein the husband seems to be thing-oriented and the wife people-oriented.

Computers can only operate logically and rationally. Further, they are tied to the concept of work which is also considered cognitive and rational. Since a man's work says who he is, he would naturally identify with the computer as seen dramatically in the Addict and Dabbler groups. While

many women can function well in this environment, their orientation would cause them to naturally view the computer in much the same way as an automobile -- it is a means to an end -- but it does not say who they are. This gender gap may be further strengthened by social institutional expectations in computer education and training as found by the Stanford University study (1) wherein boys seem to be overtly encouraged to participate.

2. Perceived social roles and role conflict among husbands and wives emerged in this study. The families reported that there was mutual agreement with reference to the initial purchase of the computer; however, when interviewed separately there was more typically acquiescence on the part of the wife. It is not as though there were conflict surrounding this acquiescence. The two genders simply define mutual agreement differently. No surprise since he is thing-oriented and she is people-oriented. Both husband and wife behaved in a manner keeping with perceived social roles. The idea of acquiescence on the part of the wife seems to conjure up negative connotations in some of the literature; however, it can mean denotatively permission, agreement, consent or approval. The couples in this study generally did not look at the wife's behavior as negative. They did not perceive anything out of the ordinary and certainly there was not conflict over the initial purchase of the machine. This idea further carries over into accessories and such things

as data base subscription services which were not prevalent among the families in this study. The husband again made the decision and the main reason was cost versus benefit of the subscription service. The one respondent who was a subscriber was beginning to doubt its usefulness to him. Generally, these people were not making their living with the personal computer which could explain lack of interest in the data base subscription services. They would be classified more as hobbyists which tends to preclude this service. Both husband and wife agreed that they would rather spend their money on wordprocessing, accounting and entertainment applications never mind that she generally had not heard about this service.

Interestingly, the most avid fans of the personal computer expressed feeling guilty at spending time on the machine -- specifically the husbands in the Addict and the Dabbler groups and the wives in the Applicationist group. Here we get into the perceived social roles again. The only available time to work on the computer is during what is classified as "home time." The computer is a one-person activity unlike the television and other activities where the family as a group can join together. The only exception, of course, is some of the games. When a person is working on the machine, they are removed from the other family members. The family is a product of its history and "home time" has emerged over time as special time for family members being together. This says nothing about

interaction or interpersonal relations, but rather physical togetherness. The husband is thing-oriented and is pulled toward his computer. Yet, his other orientations tug at him as well -- hence, guilt. The wife is people-oriented and when duty dictates that she use the computer for wordprocessing or accounting applications, she, too, feels guilt because of her removal from her main orientation. Because of her orientation, she often gets interference from family members whereas he does not. This creates even more conflict for her because of her triangular nature and the accomodation of the social roles. Most of what goes on here is an internal conflict in that generally neither spouse "hassles" the other for time spent on the computer. It is the general and uneasy feeling that they are not doing what they should be doing.

3. The use of a personal pronoun when referring to the computer -- specifically "he" -- came out in this study. Terms like user friendly have been in the literature for some time now which suggests what some writers' have theorized The Affectionate Machine. Because of its logical and rational nature, the computer would "naturally" assume the masculine identity. It is accurate to say that at this time it is mostly the men who are doing the programs for the personal computers and their personality would almost spontaneously be reflected in the results, giving a masculine bent. Programming could not help but reflect the personality of the programmer which would convey presence. It is not unusual to see the use of

It is not unusual to see the use of personal names and phrases -- even humor -- being printed on the CRT. The data in this study may reflect in part what Short (40) found with reference to a slight correlation that people are clearly oriented toward mediums that projected social presence. He suggested, however, that machines did not have social presence. What is suggested by this study is that they do convey presence and is evidenced by the use of the personal pronoun he.

Some examples of presence were seen in a local grade register program used by instructors at a local college. While waiting for a function to be completed, the CRT flashes messages like "Hold on, I'm almost finished," "I'm figuring final grades now, please be patient," or "Now I'm adjusting examination averages." Another example can be seen in a program designed for children to aid them in their spelling. A little character goes up and down a flag pole shaking its head "yes" or "no" depending on correct spelling. Yet another example was found in an adventure game where the player tells the machine to do something and if the machine does not recognize the word, it will come back on the screen and say "I do not understand that word."

While the personal computers in this study did not have voice synthesizer applications, they made noises -- the disk drives growled and the computer hummed and beeped. The noises along with the programming messages serve to

give the computer presence which may be the thing that makes the machines fit for human consumption.

4. Husbands expressed frustration in terms of machine performance and wives expressed it in terms of time that their husbands spent working with the machine.

It was not unusual for some of the husbands to work well into the night and all weekend on their computer. Sometimes they expressed feeling driven. The drive -- or the fire inside as one respondent described it -- likely comes from the frustration experienced at trying to solve the problem and the ability to totally concentrate on what they're doing. It may also be connected with the idea that computers can give a sense of power as Skinner (45) said. The feelings of accomplishment and excitement at having attained the goal keeps the men going back to the personal computer again and again. It has been fairly well established that frustration is often greatest when one feels that they are nearing their goal and are stopped for whatever reason -- the instruction manuals may not be clearly written or human logic does not correspond with computer logic. This idea seems to hold with reference to men attempting to achieve an end result on the computer. It also holds for the women in the Applicationist group who is about to complete a project and finds that the computer has frozen up for whatever reason -- or that the data disk is full and there is no way to save the information.

The families in this study typically reported that the personal computer had saved them neither time nor money. This is where the reality lies at this point in time with the family computer. There are few common and compatible programs and accessories for all computers. There is almost nothing on a computer that can't be cured with money. While the logic of a computer is simple, there are no universal symbols with reference to the operations because of the competition among the various companies who are marketing the products. It takes time to learn the idiosyncracies of each machine and program and these do not necessarily transfer to other machines and programs. At this time, there is almost nothing that is self-explanatory which will keep the general public out of the personal computer market.

Wives expressed frustration at what they perceived as their husband's preoccupation and absent-mindedness since the purchase of the computer. This theme supports what Rubin (36) found and explained as characteristic of his basic orientation. It is not something that he calculatngly does, it just seems to come naturally. His early experiences with separation and identity boundaries are at play here with reference to the personal computer. His early programming taught him to separate and makes it difficult for him to attend to several things at once. When he's on the computer, he generally does not attend to the numerous other demands going on around him. His early

developed boundaries where he was forced to separate from the mother-figure in order to attain identity allow him to isolate himself while he is physically present. His wife, on the other hand, has been programmed in this way because her identity was complimented by the mother and extended by the father, and she can't understand how he can not hear the children fighting or the loudness of the television. He doesn't understand why she can't just tune-out interruptions when she's working on the computer. He further does not fully understand it when she says that she just doesn't have a lot of extra time to spend on the computer the way he does.

5. Education tends to create awareness and inquiry within people. This awareness and inquiry also tends to create a sense of relative deprivation where desires are often translated as needs -- more begets more as one of the respondents commented. The perceived relative deprivation among the people in this study and the manifestation thereof is reflective of the current changes in society which supports Naisbitt's (24) contentions. These families seem to be moving with the trends. Further, they seem to be typical of the earlier adopters as described in Rogers (35) work with reference to research on diffusion of innovations.

The tendency toward a gadget-orientation and the perceived socioeconomic status of childhood most likely fits together to support the idea of relative deprivation

and identity. The husband's thing-orientation again comes into play with reference to gadgets. The wife's family of origin may have been just as poor economically, and while she tends to like gadgets because of what they can do for her, she does not perceive them in quite the same manner because of her people-orientation.

Further support came in the finding of a general lack of job satisfaction among the Addict and Dabbler husbands. The Applicationist husband expressed only minor job dissatisfaction. Many of the husbands expressed the idea that the computer might be a way to break away from their present employment. A part of the job dissatisfaction may be in part due to the very nature of the families in this study. They are moving toward the new ways -- with the trends -- and the old way is no longer totally satisfactory. The men in this study are also at the age where the reality of the American Dream has set in. The internalization that if one works hard and plays by the rules, success will be realized. While these people would be considered successful by most yardsticks, they had the perception they "could and would set the world on fire" via their achievements. They now feel like "just another cog in the machinery" and simply "treading water or something." Some writers have speculated about the disillusionment of men in the middle years and said that it happened because of the realization that the American Dream was a lie. Perhaps so, however, the socialization process itself may

help create the lack of job satisfaction in this particular group of people for they reported that their personal computer had recreated the dream -- made them feel more in control. They tend to feel self-fulfilled about their accomplishments on their computer.

Independence comes into play. The men don't want to be totally free of the workplace; however, they do not want to feel locked in and unable to make decisions. This too may support Rubin's (36) findings and conclusions with reference to independence and ability to take care of oneself and others as still being a prerequisite for manhood. The men in this study seemed to exemplify the assertion that men are both self-contained and needy, however, the social structure may tend to reinforce the defenses long ago built to mask the need. Consequently, many definitions for living arise in terms of work. It is this precisely that allows a man to talk about self-fulfillment and self-respect with reference to the personal computer. It is what allows him to say that his computer enhances his creativity and imagination. It is also what allows him to say that the computer could possibly help him make money.

Recommendations

Families are being influenced by the presence of the personal computer in the home. The effects of the information technology are not perceived as insurmountable

by these people nor are they considered very serious with reference to family interaction. These people are open to change in society and tend to accept both positive and negative aspects of the move. The descriptions in this study have only touched the tip of the iceberg. Based on the current literature and this research, it is felt that the computer has the potential to enhance the family and the other institutions. Therefore, the following recommendations are made:

1. The software and hardware companies must become attuned to the needs of people before major break-throughs occur with reference to acceptance of the innovation by the general public. Instructions for installation, maintenance, operation, and repair must be written more clearly and operating instructions on the various computers and programs must become more universal and not so machine specific.

2. This is the first time that a machine has had the potential to enhance individuality, creativity and efficiency for the betterment of the human condition within the social institutions and this potential must not be ignored. Further research should be done to better understand this process and to see if this assumption is correct.

3. The differences found in this study, and other studies as well, between the male and female gender must be further examined. For it is here that quality education can be approached. Educating both men and women -- girls

and boys -- as though they were motivated identically has not been successful and has created a general unhappiness among Americans with reference to the kind of education received by their children.

4. Education of women and men -- boys and girls -- may well be enhanced by using the computer in the classroom to aid instruction since both genders seem to generally function well on it. It might be beneficial to know why boys are encouraged to work on the computer and girls are not. Further research must be accomplished within the educational institutions already using the computer as an instructional aid.

5. Occupational education must investigate employment possibilities and follow through as much as monies permit with reference to the microcomputer in order to better prepare students for work in the information-oriented society. Simulation exercises are a possibility if there are no dollars to spend on computers.

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APPENDIX

LETTER AND QUESTIONNAIRE

(Return Address)

Dear Mr. and Mrs. :

I am engaged in doing a research project on influences of the personal computer in the family. This is to partially satisfy the requirements for my Doctor of Education degree from Oklahoma State University. I was referred to you by

I would like for both husband and wife to complete the enclosed questionnaire individually. I would also be interested in your participating in my study by allowing me into your home to interview both of you together and separately. This would require two to four visits and possibly some phone calls to clarify information. Care would be taken to protect your identity. I would also like for you to read the manuscript after its completion and give me some feedback as to clarity and accuracy.

I would appreciate your completing the questionnaire even if you do not wish to participate in the interviewing part of the study. This will aid me in knowing what to look for and what to possibly expect in the home setting. I do have some ideas in mind since my husband and I are personal computer owners, but I would like to know how other families are using it and if they see any influences -- both positive and negative. I do understand that one of you may not be as enthusiastic as the other and I would like to know about that too.

Thank you for your time. Your assistance will be greatly appreciated. I am looking forward to hearing from you soon. My home phone number is 756-6989 and my office phone number is 756-6211, ext. 352 or 280.

Sincerely,

Carol Tinnell

QUESTIONNAIRE

PERSONAL COMPUTERS AND FAMILIES

Husband # _____ Wife # _____

Your Name: _____	Address: _____
Spouses Name: _____	Phone: _____

This information is optional if you choose not to participate in this study. Please circle if you are interested in participating: YES NO

Please answer the following questions. I WOULD LIKE FOR HUSBANDS AND WIVES TO EACH COMPLETE A FORM. These questions will aid in better understanding what questions to ask the respondents and allow judgments to be made as to the study group's representativeness.

PLEASE RETURN THE QUESTIONNAIRE TO: Carol Tinnell, (Address)

Your age: _____ Spouses age: _____ Children(s) age: _____

Your Occupation: _____

Spouses Occupation: _____

Your Educational Background: _____

Spouses Educational Background: _____

What kind of computer did you purchase? _____

What kind of accessories (Disk Drive, printer, etc.) do you have?

Which ones do you use the most? _____

How did you justify the purchase of the machine? _____

Was there mutual agreement between you and your spouse? Explain.

How many hours a day (or week) is the computer in use? _____

Who in the family spends more time on it? _____

How do you use your computer? _____

Do you belong to a data base subscription service (i.e. The Source, CompuServe)? Explain why/why not? _____

Looking back over your decision to become a computer owner, what would you do differently? _____

PLEASE USE THE REMAINDER OF THE SPACE TO LIST ANY CONCERNS OR COMMENTS YOU HAVE ABOUT THE INFLUENCES OF THE PERSONAL COMPUTER AND ANY INFLUENCES IT MAY BE HAVING ON YOUR FAMILY OR FAMILIES IN GENERAL.

2
VITA

Carolyn Sue Tinnell

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Thesis: AN ETHNOGRAPHIC LOOK AT PERSONAL COMPUTERS IN THE
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