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2. [ The Effect of the Telidon Terminal on  
the Daily Routine of a Small Sample of Executives ]

by

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## SUMMARY

The overall purpose of the study was to design a preliminary research tool to determine the nature of the effect of the Telidon technology on people's daily activities. Diaries were designed to gather information on information seeking habits, time spent in daily activities and problems with equipment. The numeric data on information gathering habits and time spent in various activities are based on reports from 2 executives. Reactions of others are included in the qualitative description. Results show that executives spent less time relaxing after the introduction of Telidon than before and more time doing activities that people do not necessarily want to do all the time such as studying, household duties, attending a lecture or part time job. The subjects did look for information almost everyday in both the pre-Telidon and Telidon period. Participants used Telidon on average one hour a day.

The initial purpose of the project was to give the opportunity to the executives of the Telidon program to familiarize themselves with the new technology. Each executive used Telidon in his home for a month. One week before the first terminal was sent to a home the author was asked to do a study.

The author's involvement has been to give a purpose to the study, design diaries, conduct a focus group study and write a preliminary report. She collected the diaries once a week and analysed the results. Before writing the final report, she did a search of the literature to find articles related to the effect Telidon might have on daily activities.

The author was not involved in choosing participants for the study and in deciding the length of time each participant would keep the terminal in their home. Other people were responsible for making arrangements for installing terminals in homes, and making available other databases than the demonstration database. The author would appreciate any comments concerning this report.

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Telidon is a new technology developed by the department of Communications that will give people access to large banks of information. The potential of Telidon as an information medium is virtually unlimited. Library information as well as educational material will be available on the system. The technology will also provide the user with information that will meet his everyday needs such as gardening tips, house renovations guidance, recipes or legal information. These few examples illustrate the role Telidon could play as an information tool, more possibilities will be introduced in the system as its potential is developed.

Telidon will also be an entertainment medium. The entertainment role is not well defined at the moment, however Telidon could give the opportunity to people to play games with the computer. Knowledge quizzes on general topics could also provide entertainment as well as rudimentary animation programs that illustrate simple stories and ideas. Telidon can also provide information on hobbies and crafts or give instructions on how to play more complicated games like bridge and chess.

As an information and entertainment medium Telidon offers many possibilities. Some of which need to be explored and exploited in more depth. The medium will become more refined with time as people become more experienced with the new medium.

The advent of this new technology will certainly have an impact on our lifestyle. This report proposes a methodology that could be used to determine the impact of the technology on our daily activities. It would be ludicrous to develop a methodology at this point in time that would be very specific or oriented toward the content of Telidon since Telidon is still in its infancy. This report focuses on questions of a general nature. However the methodology proposed could easily be modified to answer more specific questions. The purpose of this report is not to discuss various methodologies but to describe one type and describe its application in relation to Telidon. Some data that illustrate the results the methodology can provide will also be presented.

As well as methodological concerns, this study will focus on the influence Telidon might have on our information seeking strategies and the importance Telidon might have as an entertainment medium. The basic question prevailing is to determine if people prefer to use the new technology as an information tool or as an entertainment medium. Because Telidon is still in an embryonic stage, it will be impossible to produce definitive answers in this report. However this report will illustrate how the methodology could be used to study these questions on a long term basis.

The following section will review some literature pertinent to the questions addressed in this report. There

will be a discussion of the research in relation to the information needs people might have as well as their information seeking habits. Very little research has been done in the field of videotex and the impact of the technology on lifestyles. Therefore, the following section of this report will discuss some of the research that was conducted on a similar medium, television and make comparisons with the new medium, Telidon.

#### 1.1 INFORMATION NEEDS AND READING FOR PLEASURE

As mentioned previously, Telidon will have an information provider role. If Telidon is to be successful in its role, people should be seeking information. People seek information for two reasons, one of them is to fulfill a need that occurred either because of pressures from work or self imposed pressures. The other reason is that people will seek information purely for interest.

##### 1.1.1 Information needs

Suominen (1976) reports in an article that summarizes a series of research projects conducted in Finland, that people will be more likely to seek information to meet their everyday needs than information on current affairs. This result seems to be intuitively correct. In our present society, the average person is continually bombarded with information on



current affairs and because the consumer can passively inform himself he will not be likely to experience a need for the information. He will not be likely to seek information on the topic even if his knowledge is relatively poor on the subject. However people experience difficulties in their everyday lives and feel a need for information such as old age pension, dinner recipes. People will be more likely to seek information if they experience a need and know they will not find an answer unless they seek the information.

On the basis of research in England, Clark (1979) describes some results that agree with Suominen's findings. He found that professional researchers (psychologists and sociologists) experience a need for information more acutely than service professionals (teachers or practitioners in psychology and sociology). Researchers would be more likely to seek information and read it on a regular basis than the service type of professional.

The findings of the two previous studies indicate that people will seek information if they experience a need for it. In an article by Arnold (1982) it is suggested that Prestel, a videotex technology in England, would have been more successful if the needs of the potential consumer had been taken into consideration in the design of the technology. Instead, advertising and greater sales efforts tried to shape

the consumers interests. This strategy was not very successfull according to Arnold.

#### 1.1.2 Reading for pleasure

People often read for pleasure even if the information is technical in nature. Therefore a distinction is made in this report between reading to fulfill a need and reading for pleasure. Reading for pleasure is considered a form of entertainment or distraction. Szlicheinski (1982) makes the same distinction. He also mentions that much of browsing is very entertaining. In this study browsing, which means reading for no specific reason, is considered as entertainment. Another distinction is made between current information or information that is updated frequently and information that is updated sporadically. Suominen suggests people will require information to solve their problems from day to day and this information will have a tendency to change more frequently.

A comparison will be made between the information seeking patterns before and after Telidon was introduced into the homes of some potential users. The comparison will be very general because as an information provider Telidon is still in a developmental stage. It would have been unfair to make a detailed comparison. However, the methodology could easily be modified to include more specific categories of

information. The overall purpose of this study is to determine if people experience a need for information and in the event that they experience a need if they use Telidon to fulfill their need.

## 1.2 EFFECTS ON DAILY ACTIVITIES

There are many questions concerning the effect Telidon might have in the lives of people. Very few empirical studies have been conducted and completed yet on such questions since the technology is not commercially available. Some research has been done on a related field, television watching. In the following discussion a comparison of television and Telidon will be made which will be followed by a discussion of the research on television that is relevant to the topic of this study.

### 1.2.1 Similarities and differences between the two media

Television is a passive medium, people sit in front of the television set and absorb the information displayed on the screen. Telidon is also a passive medium since no physical activity is required to interact with the terminal other than pressing keys on a keypad.

Television is generally considered an entertainment medium, but at times television becomes an information medium

with programs like W5, Question Period, Live it Up, Market Place, Femme D'aujourd'hui. Like television, Telidon will assume both roles of being an entertainment and information medium.

Telidon will differ from television in the method the user interacts with the medium. The Telidon user will have to direct the computer to the information he is looking for by choosing among categories of information. A user might have to concentrate to search for the information. In this respect Telidon is different from television since a television viewer does not need to concentrate to select the appropriate channel every hour. This difference between the two media might make a difference in the way the medium is used. Television might be used when people do not want to concentrate and prefer to relax. People will be more likely to watch television late at night when they are tired. Telidon might be used early in the evening or during the day when people are not so tired.

#### 1.2.2 Research on television

Extensive research was conducted by Himmelweit et al(1955-1956) on the effect of television on children. They described the impact of television by comparing lifestyle patterns before and after the introduction of television. From 1958 to 1960, Schramm et al did 11 studies in the United States and Canada to determine the impact of television in the

lives of children. At the time of the surveys television had penetrated the majority of homes in the United States.

Schramm et al found that television greatly reduces movie-going, radio-listening, comic book and pulp magazine reading. It reduced the time for play. Bedtime was postponed and organized around television.

One other important finding of Shramm et al, was that if a child had unsatisfactory relationships with his family or peer group, he tended to retreat to television where he could escape reality for awhile and possibly reduce his tension. The more conflict a child was subjected to, the more television he watched. However, if a child already watched television for many hours a day, as the researchers observed for children of low intelligence and low socioeconomic level, the amount of time spent watching television did not increase noticeably because of problems with interpersonal relationships.

Himmelweit et al found that television did not noticeably reduce the time children spend outdoors. The reduction was on average, only 15 minutes a day. The researchers also found that cinema attendance was greatly reduced, particularly among younger children. They reported that the research done with adults in England (Belson 1957) and in the

United States (Bogart 1956, Duggan 1955 and McGeehan 1953) indicates that television reduced greatly the time spent listening to radio and going to movies.

Himmelweit et al also reported that studies done in England (Belson 1957) and in the United States showed that the initial period of heavy viewing due to familiarization with the new medium persisted for four years or more with adults. Himmelweit et al found that this period for children was only one year.

In contrast to the above studies, more recent surveys done by A.C. Nielson Co. (1981) have found that television watching by American teenagers is more extensive than Schramm et al observed from 1958 to 1960. Nielson (1981) found that the average teenager watches 3.3 hours per day of television while Schramm et al observed that teenagers, in grade 12, watched approximately 2.4 hours per day. The findings from these 2 studies seem to indicate that television watching seems to have increased since 1960 and viewing is still concentrated in the evening. Nielson found that 67% of U.S. homes were watching TV at 9 PM in February 1981.

Television seems to have a noticeable impact in the lives of people. People watch television for some time everyday. In a 1975 Canadian survey, 59% of respondents admitted watching 7 or more hours of television in a week

(Schliewen 1977). Television has an impact on the more passive leisure activities such as movie attendance and listening to the radio. Telidon like television will certainly have an impact on the daily activities of people. The impact might even be more noticeable since people will be able to seek the information of their choice. People might find Telidon more captivating because information will be available on a wide range of topics. Telidon, like television will probably have an impact on the more passive activities. However Telidon will probably not affect the activities that require physical exertion since in recent years people are regaining enthusiasm for such activities. There is an increase in outdoor facilities such as bicycle and cross country ski trails, tennis courts and private sporting clubs. More people are using the facilities each year.(Canada Fitness Survey, 1983)

In this study, a comparison will be done between the time that people spend in various activities before and after the introduction of Telidon terminal in their homes. The activities will be grouped in categories like time spent relaxing or time spent in casual social activities.

### 1.3 Purposes of the study

The study described in this report is one of the first attempts at evaluating the effect of Telidon in people's lives. Telidon should have a noticeable impact since it is

both an information and entertainment medium. One purpose of this study is to investigate how this new technology would change the everyday routine of people. For example, would people stay home more and distribute their time toward Telidon and away from their social lives. Taking the research on television into consideration, it was hypothesized that leisure activities would be affected by the introduction of the new technology.

Another purpose of the study is to determine if people look for information in the course of their daily activities. To determine needs, people were asked if they looked for information that is updated frequently, updated sporadically and for information read for interest or pleasure. It will also be important to determine if Telidon could be a useful source of information.

Another concern of this study is to determine the effect on the user of technical problems with Telidon. Many difficulties with the system could influence users in seeking alternate sources of information to meet their needs.

The overall purpose of this study, is to use the experiment as a preliminary research tool to determine the nature of the impact of the technology. It would be impossible to draw conclusions for the general population. However, it will be possible to suggest the variables that are



important for consideration for further studies.

## 2. METHOD

### 2.1 DESIGN

The design of the study consists of comparing lifestyle patterns and information gathering habits before and after the introduction of the Telidon terminal in the homes. Two subjects received a terminal at the same time for the period of one month. At the beginning of the next month, 2 other subjects received the 2 terminals. The terminals rotated from month to month until all of the eight subjects received the terminal twice. With this design, it was possible for the researcher to observe the subjects' behaviour at different times of the year, in normal conditions and during the period the terminal was in the home. A pre-Telidon period became a control for a Telidon period of another person. The study lasted from November 1981 to April 1982, a period of 6 months.

At the end of the study, a focus group was conducted to determine in greater depth the nature of the impact of the terminal in the homes of the subjects.

## 2.2 SUBJECTS

Eight executives from the Department of Communications received Telidon terminals in their homes. All of the eight executives used Telidon in the course of their work by giving demonstrations, doing research planning and conducting field trials, attending and giving papers at conferences and visiting various countries that are developing similar systems. These subjects worked extensively with the new system and probably developed an attitude, positive or negative, toward Telidon. However, when these subjects go home they fulfil other functions such as parenthood, handyman, playing sports, husbands, wives, they attend social events, entertain company, pay bills and do various household duties. If Telidon was changing the lives of the executives and their families, it would certainly show in this study.

The study was carefully designed not to impinge upon the privacy of the subjects. Questions were always about categories of information or categories of activities. The sample consisted of women and men. To protect the privacy of individuals, all participants will be referred to in the masculine person.

### 2.3 PROCEDURE

Subjects were given a brief introduction to the evaluation part of the project. They were told they would be participating in a study that would determine the effect of the Telidon terminal in their daily activities. Then they were asked to fill a diary everyday either at the end of the day or at the beginning of the next day so that they would not forget what they did during the day. It was explained that it was important to be as accurate as possible when they complete the diary. Subjects were asked to fill a diary for 3 weeks before they received the terminal and during the month that they had the terminal in their home. At the end of the study, they would participate with the other subjects in a group discussion to talk about the impact of the terminal in their home.

### 2.4 MATERIAL

Executives received in their homes typical Telidon terminals equipped with acoustic couplers. One subject had a Bell Canada government line installed in his home. Other subjects used their own telephones to communicate with the computer.

The diaries were divided into three sections. The first section enquired about the types of information the subjects were looking for. The 3 categories of information were: information updated frequently, information updated sporadically and information read for pleasure. The first category, information updated frequently, consisted of information like news, travel, transportation, entertainment outside the home, want ads and finance. The second category, information updated sporadically, meant information such as Government and consumer information, legal aid, health and education. Games, novels, hobbies were examples of the third category, information read for pleasure.

The second section of the diary enquired about the time spent on various activities. Subjects were asked how many hours they were awake in a day, how much time they spent at work and how much time they spent in casual social activities such as visiting friends and spending time with their family. Another category was the time spent relaxing or doing activities like reading, cooking, watching television and listening to music. The time spent attending organized social activities such as school board meetings, track club, volunteer work was another category. The last category was the time spent doing household activities or things people do not necessarily like doing every time they have to do it. Some of these activities are studying, attending a lecture, a

part time job. Subjects were also asked how much time they spent looking for information and using Telidon.

The third section of the diary asked subjects if they encountered problems when they retrieved information, if they had difficulties reading from the television set and if they experienced technical problems.

The pretrial and trial diaries were identical except for questions related to Telidon specifically. (Diaries in Appendix A and B)

Although more than one database was expected to be available for the experiment, subjects could only access the Department of Communications demonstration database. This bank of information was designed to demonstrate the capabilities of the Telidon system to various interested organizations, it was not designed to be used as a real source of information. Some games like Othello were available on the system.

### 3. RESULTS

#### 3.1 PARTICIPANTS OF THE STUDY

There were eight people who received Telidon terminals in their homes but there were only 4 people who participated in the evaluation study. The data from the diaries were

available from only 2 participants. One of the other 2 subjects participated in the pretrial part of the study, then accepted the Telidon terminal in his home. Over a weekend, after trying to understand how to use the Telidon terminal, he returned it to the Department of Communications because he thought that the system was too cumbersome to use and the tools (instructions booklet) provided to him to learn were not adequate. No pretrial data was collected for another person because of delays and therefore no comparison could be made before and during the trial.

As for the other 4 subjects in the study, they did not participate at all for the following reasons. One person simply refused to participate in the study because he could not cope with any more work. It was impossible to reach another person, messages with urgent tags were left on his desk for a period of three weeks. Another person participated in the study but did not fill the diaries properly and returned only some of them. The other person declined to participate in the study for reasons he would not elaborate upon.

### 3.2 ANALYSIS OF DIARIES

Since complete data were available for 2 subjects only, the analysis of the data was done with graphs. Graphs, means

and correlations were the most powerful analysis that could be done with the data.

The data included in the analysis ran from November 1981 to January 1982 for the first person. For the second person, the study lasted from December 1981 to January 1982. All the days for which there were data, were included in the graphs to show, as much as possible, the impact of the terminal. For the calculation of means, standard deviations and correlations, each day of the week was represented an equal number of times. This meant that the data for the first three days of the trial were not used for the first person. The data of the second Monday of the pretrial period were used for the first Monday of that period. For the second person, the first 4 days of data for the trial were not used. Data at the beginning of the trial were rejected rather than at the end because the subjects might have been adjusting to the terminal in the first few days.

There were breaks in time between the end of the pretrial and the start of the trial because there were always unforeseen difficulties that forced delays in the installation of the terminal in the home. Some of these difficulties were that subjects or other members of the family could not meet the technicians at their home at a convenient time. Sometimes technicians did not come on the scheduled date.

The results from the diaries and correlations will be presented in the following discussion for each of the variables that were under study in the diaries.

### 3.2.1 Length of day, time spent at work and time spent in casual social activities

The three variables, length of day, time spent at work and time spent in casual social activities, did not seem to be influenced by the introduction of the Telidon terminal. However the holiday season at Christmas time did seem to influence the time spent in these activities. A comparison of the graphs (graph 1A for person 1 and graph 1B for person 2) for the periods of before and during the trial, for variable length of day, time spent at work and time spent in casual social activities shows a tendency for person 1 to increase the time spent in casual social activities during the trial and a tendency for person 2 to decrease the time spent in casual social activities during the trial. Table 1 shows the same tendency for means per day. For person 1, means per day for casual social activities increase from 1.57 hours per day to 2.33 hours per day and for person 2, the means decrease from 6.57 hours per day to 2.91 hours per day. These differences can be explained by the time of the year. Person 1 received the terminal during Christmas time, which would explain the increase in the time spent in casual social activities. Person 2 spent Christmas during the pretrial time



which would explain the reduction in time spent in casual social activities during the trial. (Table 2 shows the average time spent in a week for the various activities.)

The length of day variable did not seem to be affected by Christmas time or the introduction of the terminal in the home. However, the variable time spent at work did seem to vary in relation to Christmas time. Less time was spent at work for person 1 during the trial at Christmas (at pretrial time, 6.64 mean number of hours per day and at trial time, 5.00 mean number of hours per day, table 1). Less time was spent at work during the pretrial for person 2 at Christmas (at pretrial time, 3.43 mean number of hours per day and at trial time, 6.48 mean number of hours per day, table 1). The discrepancy between the average number of hours per day spent in casual social activities (1.45 hours per day) and time spent at work (0.74 per day) for the pretrial and trial period might be due to the fact that the length of the pretrial was 2 weeks and the length of the trial was 3 weeks. The effect of Christmas would be more pronounced in a shorter time interval. Therefore means for the variable casual social activities should be higher for the pretrial and means for the variable time spent at work should be lower for the pretrial.

### 3.2.2 Time spent relaxing

The introduction of Telidon in the homes of executives did seem to influence the time that executives spent relaxing. A comparison of the graphs (graph 2A for person 1 and graph 2B for person 2) and the means in Table 1 for the variable time spent relaxing does seem to indicate an overall reduction in the time spent relaxing. This reduction in time is observed for both persons and does not seem to be influenced by the period of Christmas. The average number of hours per day spent relaxing for the same variable for the trial period is 2.68 hours per day. There is a difference of 1.43 hours per day before and during the trial in the time spent relaxing.

### 3.2.3 Time spent doing household duties

The introduction of Telidon did seem to influence the time spent on this activity, however the holiday season did not seem to influence the variable. A comparison of the graphs (graph 2A for person 1 and graph 2B for person 2) and the means in Table 1, for the variable time spent doing household duties does seem to indicate a general increase in the time spent doing household activities. The mean number of hours per day spent for this activity during the pretrial time period was 0.79 hours per day and 1.73 hours per day during the trial period. This variable, as well as time spent

relaxing, does not seem to be influenced by Christmas. There is a difference in time of 0.94 hours per day between the means for the pretrial and trial periods. These 2 differences in means, 0.94 hours per day for time spent doing household duties and 1.43 hours per day for time spent relaxing, seem to correspond to the average number of hours per day spent using Telidon (1.01 hours per day). Table 4 illustrates the differences in means. However Pearson correlations, Table 3 between variables time spent relaxing ( $r=0.45$ ,  $s=0.001$ ) and time spent doing household duties ( $r=0.27$ ,  $s=0.042$ ) with time spent using Telidon, do not seem to indicate a strong relationship between the variables. Telidon might be affecting the overall time spent on each activity but the time spent using Telidon is not strongly related to the time spent relaxing or doing household duties.

#### 3.2.4 Time spent in organized social activities

Telidon did not seem to affect the time spent in organized social activities. A comparison of graphs (graph 4A for person 1 and graph 4B for person 2) and means in table 1, for the variable time spent in organized social activities seems to indicate that the time spent in organized social activities decreased during Christmas. There is a weak correlation between the time spent in organized social activities and the amount of time spent using Telidon ( $r=0.33$   $s=0.02$ ) which might indicate that if subjects have time to

engage in social activities they also take the time to use Telidon. The positive correlation ( $r=0.44$   $S=0.01$ ) between time spent in organized social activities and relaxing indicates that people consider organized social activities relaxing. The negative correlations between the amount of time spent at work ( $r=-0.50$   $S=0.001$ ) and the time spent in casual social activities ( $r=-0.45$   $S=0.029$ ) with the amount of time spent in organized social activities indicate that people do not have time for their organized social activities if they are preoccupied by their work or busy in casual social activities. However, the time spent in organized social activities is a very small proportion of the day. Subjects spend less than one hour a day in this activity (mean=0.45 hrs/day).

### 3.2.5 Time spent looking for information

The variable time spent looking for information seems to remain constant for person 1 and decrease for person 2 during the pretrial period, at Christmas time. Graphs (graph 5A for person 1 and graph 5B for person 2 and means in Table 1) seem to verify this relationship. Person 2 spent 0.33 hours less time per day looking for information at Christmas time. This is a very small proportion of the day for the subject. The negative correlations ( $r=-0.64$   $S=0.001$  during the trial and  $r=-0.36$   $S=0.029$  during the pretrial) seem to indicate that looking for information is not a relaxing activity. The

negative correlation ( $r=-0.46$   $S=0.001$ ) between the amount of time spent looking for information and the time spent using Telidon indicates that Telidon was not used primarily for looking at information. The correlation ( $r=0.40$   $S=0.004$ ) between the time spent looking for information and time spent at work might indicate that people were looking for information when they were at work or they were looking for information concerning their work.

### 3.2.6 Other findings

The correlation between amount of time spent at work and the length of the day before ( $r=0.67$   $S=0.001$ ) and after the trial ( $r=0.33$   $S=0.015$ ) indicate that the time people will spend at work will influence the length of the day but other variables do not seem to have an influence on the length of the day.

Pearson correlations in Table 3 show a strong relationship ( $r=-0.67$  in pretrial,  $r=-0.70$  in trial), between the variables time spent at work and time spent in casual social activities, during both conditions the pretrial and trial periods. The more time people spend at work, the less time they spend in casual social activities. As well, graphs 1A and 1B show that casual social activities seem to be at a minimum on Mondays, Tuesdays and Wednesdays, gradually increase on Thursdays and Fridays, remain at a peak on

Saturdays and decrease again on Sundays. The variable time spent at work is at a maximum on Mondays, Tuesday and Wednesdays, gradually starts to decrease on Thursdays and reaches a minimum on Saturdays and Sundays. Graph 6 illustrates this relationship, by showing means for the 2 subjects for each day. Other Pearson correlations do not seem to show consistent patterns and strong relationships that appear both in the pretrial and trial periods.

### 3.2.7 Information needs

In the first section of the diary, subjects were asked to describe their needs for information. Table 5 gives the findings. Both subjects looked almost everyday for information that is updated frequently. They also looked for interesting information such as novels, games and entertained themselves at home almost everyday. These findings were very similar for both the pretrial and trial periods. Subjects did not spend a great deal of time looking for information that is not updated frequently, only on 23% of the days for person 1 and on 14% of the days for person 2 during the pretrial. During the trial, person 1 was looking for such information on 5% of the days and person 2 was looking on 38% of the days.

Whenever subjects looked for information in any of the three categories, they seemed to find it almost all the time in both the pretrial and trial periods.

Person 1 gave ratings of not satisfactory and partially satisfactory to the information he found during the pretrial. The ratings changed to satisfactory during the trial. However, Telidon received a rating of partially satisfactory as an information source and a rating of satisfactory as a source of interesting information. Person 2 gave ratings of entirely satisfactory to the information he found for both pretrial and trial conditions. Telidon was found to be not satisfactory as an information source. These results suggests that Telidon somewhat helped subject 1 to find information. However, the ratings of satisfaction for the acquired information increased from partially satisfactory to satisfactory, a small difference.

### 3.2.8 Technical problems

The third part of the diary enquired about the problems subjects experienced with the system during a session. Table 6 lists the satisfaction ratings. In general subjects had either no problem or minor problems using the system. A Kendall correlation ( $r=0.11$ ) shows that there is hardly any relationship between the satisfaction rating of technical performance and the time spent looking at Telidon. Technical problems did not seem to influence the amount of time spent looking at Telidon during the day.

### 3.3 ANALYSIS OF THE FOCUS GROUP DISCUSSION

Three people participated in the group discussion; the 2 people included in the study and one other person who received the terminal at home but did not complete the pretrial data .

At the beginning of the discussion, participants explained how they became involved in this study. The initial purpose was to give the opportunity to the executives to familiarize themselves with the technology.

There were some difficulties in the installation of the terminal. One person took a day off work to meet the technician at home. The technician never came. This person also had an extra government telephone line installed at home for the period of one month. The Bell technician wanted to drill a hole through the wall of the house. It was explained to him that he had to use another method to install the new line since this line was temporary for a month. The other 2 subjects did not have extra telephone lines installed in their home.

The other 2 subjects that did not have an extra telephone line installed in their home felt that it was an inconvenience to use their telephone when they wanted to use Telidon. Their telephone line was busy for long periods of time.



All three subjects felt that Telidon did not influence their television viewing habits. One person watched television at the same time as using Telidon.

Three subjects installed their Telidon terminal in their living room and some of them beside the television set. One person also had an Apple microcomputer beside the television and Telidon sets in the living room.

Before the trial, all three subjects announced to the other members of their family that Telidon was coming to their home. The news was perceived positively in all three homes.

In one home, the technician that installed the Telidon terminal showed members of the family how to use the terminal. In the other families, the subjects themselves showed the other members of the family how to use it. Both learning procedures were satisfactory.

Telidon was shown to friends and sometimes groups of people would try to play a game together. One person did play the Othello game alone and became angry at the Telidon set because it did not put the piece where the person wanted it. This person never used Telidon again because he thought there was nothing interesting in the database. All three subjects felt they did not use the terminal very much because it was conflicting with other

interests and pastimes but at the same time they felt obligated to use it because they were participants to an experiment.

Subjects did encounter problems when they used Telidon. If they had technical problems they did not call the technician to find out what the problem was. Instead, they just turned the Telidon set off. Two subjects thought it was cumbersome to phone the computer and use a password each time they wanted to use Telidon. Two people felt that the tree structure was a cumbersome technique to retrieve information. One person said it was because he was never sure if the information at the end of the search would be the information he wanted. The other person thought that it was impossible to use Telidon in a passive way because the user has to concentrate on choices all the time.

All three subjects felt that the study was a worthwhile experience but they were also glad to take away the clutter of wires in their livingroom.

#### 4. DISCUSSION

One purpose of this study was to determine the impact of the Telidon terminal on the daily routine of the subjects. In the analysis of the diaries, it was found that the only two variables that seemed to be influenced by the introduction of Telidon were the time spent relaxing and time spent on household activities. Although the differences in time spent on these activities seemed to correspond to the amount of time spent looking at Telidon, the correlations between the time spent looking at Telidon and the variable time spent relaxing and doing household activities were low. How then can a reduction in the overall time spent relaxing and an overall increase in time spent doing household activities be explained? In the group discussion, subjects mentioned that they felt obligated to use Telidon because they were participants in an experiment. It would seem that subjects felt that using Telidon was not relaxation, it was too closely related to their work situation. Instead they included Telidon watching in the category of household activities. They perceived Telidon watching as an activity they had to do, not necessarily by choice. Another possible explanation could be that Telidon requires too much effort when used to be considered as relaxation. As the subjects indicated in the group discussion, they complained about uncertainty of finding information with the tree structure and the impossibility of

being passive when searching or browsing for information. However correlations indicate that people would use Telidon as a relaxing tool more than they would use it as an information provider tool. This finding is understandable since the bank of information used for this study was still in a developmental stage and the information stored in the bank was very limited.

In the group discussion, participants did mention that Telidon was competing with their other interests and hobbies. Their pastimes were not greatly affected by the introduction of Telidon in their home because Telidon did not offer any information that was as interesting as their normal pastimes. Two subjects in the group discussion indicated that they enjoyed games on Telidon. The third person said that he did not enjoy games with computers.

Participants spent, on average, one hour a day looking at Telidon. They might not have spent as much time using Telidon if they did not feel obligated to use it because they were participants of a study. Results from the focus group discussion indicated that people turn the Telidon set off when they experience technical problems. However, as the satisfaction ratings with the technology show, people did not encounter problems very often.

Another finding of the present study, is the relationship between the variables time spent at work and time spent in casual social activities. Time spent at work and time spent in casual social activities and time spent relaxing seem to be the most time consuming activities of the day. People relax regardless of the time they spend at work with their friends and family. However, long working hours do not entice people to visit friends and spend time with family. The results seem to suggest that Telidon will influence the more passive activities such as reading, listening to music, watching TV rather than favourite pastimes and casual social activities. However more data should be collected before this finding can be generalized with more certainty.

The results from the study of this report, show that the subjects had a need for information. They looked almost everyday for information that is updated very frequently. They looked for information that is updated sporadically on approximately 20% of the days. These 2 subjects also entertained themselves at home by reading for pleasure or playing games almost everyday. These results suggest that these 2 subjects did not read only to meet demands.

The findings reported in this study indicate that the methodology that was used is sensitive to the influence that a Telidon terminal might have in the daily routine of people. It would be possible to determine the effect of Telidon if

this methodology would be used with a greater number of participants for a longer period of time and a bank of information that could be more useful to participants.

## 5. CONCLUSIONS

Although the results of this study cannot be generalized to the general population, some interesting findings can be reported.

Telidon appeared to have an effect on the daily routine of the 2 executive studied in this experiment. They perceived themselves as spending less time relaxing or doing activities they enjoy and spending more time doing activities a person does not necessarily like doing all the time such as studying, attending a lecture, household duties, et cetera. From a first look at the effect Telidon might have on the daily activities of people it seems that Telidon will influence the more relaxed casual activities rather than the more planned activities such as time spent with friends or family or time spent at work or favorite pastimes.

The most time consuming activities of the day for the subjects of this study were the time spent working, the time spent relaxing and the time spent in casual social activities. The time spent in casual social activities was closely related to the time spent working.

The findings of this study show that the subjects do look for information almost every day. Subjects experienced a need for seeking information daily and they also read for pleasure, did hobbies and played games. People in this study would probably use Telidon as an information and entertainment medium if the information available was useful.

Another finding of this study was that if subjects encountered technical problems, they did not try to solve the problem, they simply turned the terminal off.

All subjects in this study complained that the department of Communications database was not interesting. Subjects gave a rating of not useful to Telidon as an information source and a rating of partially useful as a source of information that could be read for pleasure.

## 6. RECOMMENDATIONS

Further research should be done to determine if people feel they cannot relax when they use Telidon because they have to concentrate too much on what they are doing.

More research needs to be done to determine if people outside their work environment seek information to meet demands or just read for pleasure or interest.

Subsequent studies should include factors such as level of education, occupation, age and sex as variables that could influence the impact of the terminal.

In designing further studies, more planning should be done to give adequate training to the users who are naive about the technology. The attitude of the user toward the terminal often depends on this initial encounter with the technology.

The impact of the terminal in subsequent studies should be observed for longer periods of time. The television research has indicated that it took four years for adults to return to some of their activities that they neglected because of television. If the impact of Telidon is at all similar to the impact of television, data should be gathered for at least four years.

A subsequent study should be coordinated by one person, preferably the researcher, to reduce to a minimum delays, planning and scheduling difficulties.



TABLE 1. Means for days and standard deviations for each subject  
Means and standards deviations for Pretrial and Trial

		Pretrial N=14		Trial N=21		Pretrial N=28	Trial N=42
		Person 1 Mean SD	Person 2 Mean SD	Person 1 Mean SD	Person 2 Mean SD	Mean SD	Mean SD
Length of day hrs/day	Log	16.36(0.93)	16.00(.00)	16.29(0.96)	16.14(0.65)	16.18 (.67)	16.21(0.81)
Time spent at work hrs/day	Work	6.64(3.75)	3.43(4.11)	5.00(3.95)	6.48(3.80)	5.04(4.19)	5.74(3.90)
Time spent in casual social activities hrs/day	CAS	1.57(1.91)	6.57(4.09)	2.33(2.03)	2.90(2.11)	4.07(4.04)	2.62(2.07)
Time spent in relaxing Hrs/day	REL	5.79(2.04)	2.43(1.79)	4.10(1.58)	1.26(0.86)	4.11(2.54)	2.68(1.91)
Time spent doing household activities hrs/day	HOUS	0.57(0.76)	1.00(0.55)	1.64(0.73)	1.81(2.29)	0.79(.69)	1.73(1.68)
Time spent in organized social activities hrs/day	ORG	0.86(1.17)	.07(0.27)	0.71(1.42)	0.19(0.60)	0.46(.92)	0.45(1.11)
Time spent looking for information hrs/day	Info	1.00(0.39)	2.93(2.05)	0.98(0.11)	3.26(1.24)	1.96(1.75)	2.12(1.45)
Time spend looking at Telidon hrs/day	TelT			1.52(0.68)	0.49(0.71)		1.01(0.86)
Time		Nov	Dec	Dec	Jan		

TABLE 2. Means for weeks for each subject and  
Means for Pretrial and Trial

	Pretrial N-14		Trial N- 21		Pretrial N-28	Trial N-42
	Person 1	Person 2	Person 1	Person 2		
Length of day hrs/week	114.52	112.00	114.03	112.98	113.26	113.47
Time spent at work hrs/week	46.48	24.01	35.00	45.36	35.28	40.18
Time spent in casual social activities hrs/week	10.99	45.99	16.31	20.30	28.49	18.34
Time spent relaxing hrs/week	40.53	17.01	28.70	8.82	28.77	18.76
Time spent doing household activities hrs/week	3.99	7.00	11.48	12.67	5.53	12.11
Time spent in organized social activities hrs/week	6.02	0.49	4.97	1.33	3.22	3.15
Time spent looking for information hrs/week	7.00	20.51	6.86	22.82	13.72	14.84
Time spent looking at Telidon hrs/week			10.64	3.43		7.07

TABLE 3. Pearson Correlations r-  
Significance Level s-  
Percentage of variance r<sup>2</sup>-

		Pretrial N-28						Trial N-42							
		Work	CAS	REL	Hous	ORG	Info	Work	CAS	REL	Hous	ORG	Info	Telt	
Length of day hrs/day	Log r-	.67	-.25	-.25	.01	-.14	-.22	Log r-	.33	.14	-.02	-.18	-.14	-.09	-.18
	s <sub>2</sub>	.001	.098	.099	.488	.240	.135	s <sub>2</sub>	.015	.190	.456	.128	.193	.275	.132
	r <sup>2</sup> -	.45	.06	.06	.00	.02	.05	r <sup>2</sup> -	.11	.02	.00	.03	.02	.01	.03
Time spent at work hrs/day	Work r-		-.70	-.27	-.07	.03	-.08	Work r-		-.67	-.24	-.35	-.50	.40	-.21
	s <sub>2</sub>		.001	.081	.350	.430	.340	s <sub>2</sub>		.001	.062	.011	.001	.004	.096
	r <sup>2</sup> -		.49	.07	.00	.00	.01	r <sup>2</sup> -		.45	.06	.12	.25	.16	.04
Time spent in casual social activities hrs/day	CAS r-			-.26	.14	-.45	.17	CAS r-			-.10	.01	.17	-.16	.03
	s <sub>2</sub>			.093	.240	.009	.196	s <sub>2</sub>			.261	.463	.137	.163	.428
	r <sup>2</sup> -			.07	.02	.20	.03	r <sup>2</sup> -			.01	.00	.03	.03	.00
Time spent relaxing hrs/day	REL r-				-.20	.44	-.36	REL r-				.05	-.10	-.64	.45
	s <sub>2</sub>				.156	.010	.029	s <sub>2</sub>				.372	.259	.001	.001
	r <sup>2</sup> -				.04	.19	.13	r <sup>2</sup> -				.00	.01	.41	.20
Time spent doing household activities hrs/day	Hous r-					-.19	.12	HOUS r-					.07	.06	-.27
	s <sub>2</sub>					.169	.277	s <sub>2</sub>					.334	.35	.042
	r <sup>2</sup> -					.04	.01	r <sup>2</sup> -					.00	.00	.07
Time spent in organized social activities hrs/day	ORG r-						-.22	ORG r-						-.23	.33
	s <sub>2</sub>						.131	s <sub>2</sub>						.070	.017
	r <sup>2</sup> -						.05	r <sup>2</sup> -						.05	.11
Time spent looking for information hrs/day	Info r-							Info r-							-.46
	s <sub>2</sub>							s <sub>2</sub>							-.001
	r <sup>2</sup> -							r <sup>2</sup> -							.21
Time spent looking at Telidon hrs/day	Telt														

Table 4. Differences in means for variables:  
time spent relaxing and time doing household activities  
in comparison to the variable time spent looking at  
Telidon.

	Pretrial		Trial		Difference		Pretrial	Trial	Diff
	person 1	person 2	person 1	person 2	person 1	person 2			
Time spent relaxing/hrs/day	5.79	2.43	4.10	1.26	1.69	1.17	4.11	2.68	1.43
Time spent doing household activities/hrs/day	0.57	1.00	1.64	1.81	1.07	.81	0.79	1.73	.94
Time spent looking at Telidon			1.52	0.49				1.01	

TABLE 5. Frequencies and Percentage for Looking at information and finding information  
Means for level of satisfaction for information and for Telidon use.

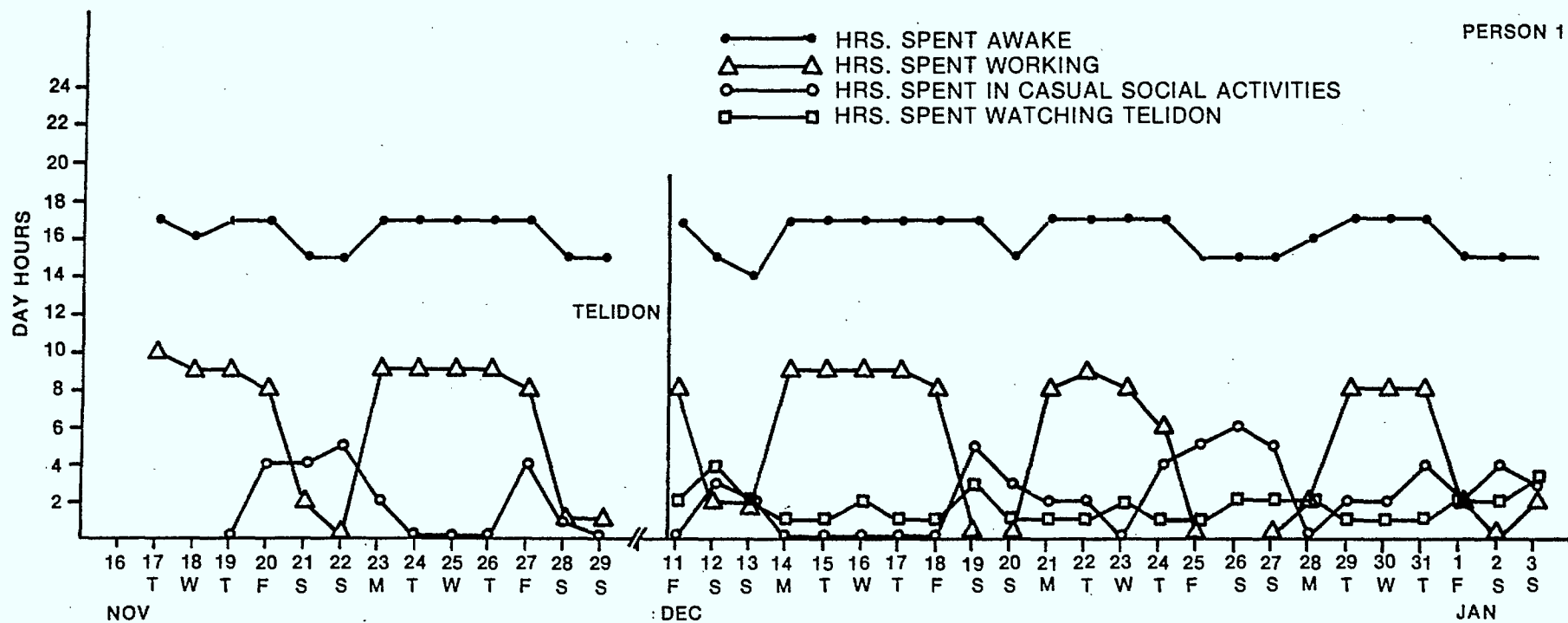
	Looking for information			Finding information			Satisfaction information			Telidon satisfaction		
	freq <sup>1</sup> N/%	not freq <sup>2</sup> N/%	browsing <sup>3</sup> N/%	freq N/%	not freq N/%	browsing N/%	freq	not freq	browsing	freq	not freq	browsing
<u>Pretrial</u>												
Person 1	13/13 100%	3/13 23%	13/13 100%	12/13 92%	2/3 67%	13/13 100%	2.15	1.33	2.46			
Person 2	13/14 93%	2/14 14%	11/14 79%	13/13 100%	2/2 100%	11/11 100%	4.0	4.0	4.0			
TOTALS	26/27 96%	5/27 19%	24/27 89%	25/26 96%	4/5 80%	24/24 100%	3.08	2.40	3.17			
<u>Trial</u>												
Person 1	21/21 100%	1/21 5%	21/21 100%	21/21 100%	1/1 100%	21/21 100%	3.0	3.0	3.10	2.10	2.0	3.05
Person 2	21/21 100%	8/21 38%	18/21 86%	21/21 100%	8/8 100%	18/18 100%	4.0	4.0	4.0	1.0	1.0	1.32
TOTALS	42/42 100%	9/42 21%	39/42 93%	42/42 100%	9/9 100%	39/39 100%	3.5	3.89	3.52	1.35	1.32	1.88

1. Information updated everyday
2. Information not updated frequently
3. Information read or looked at by interest, novels, magazines, games.

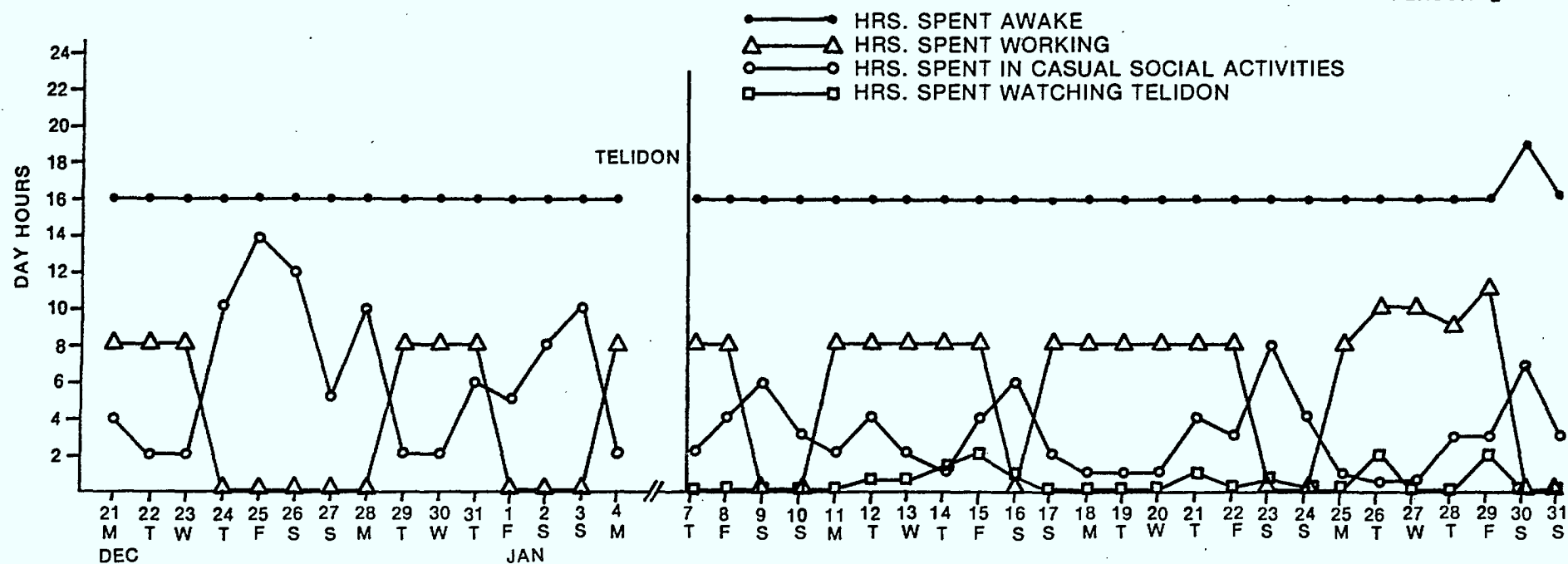
TABLE 6. Satisfaction Ratings for the performance of the technology,  
the easiness of use of the tree structure and  
the readability of the Telidon pages. (Means)

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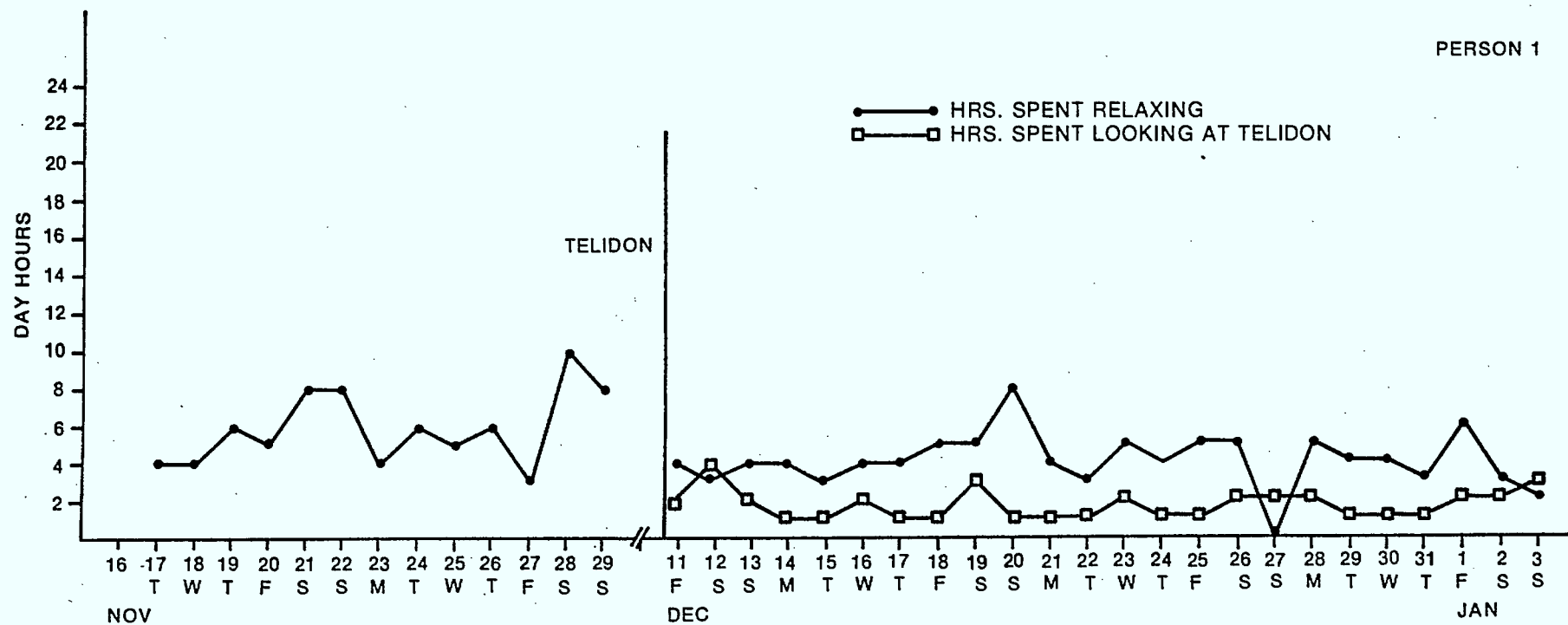
	Trial	
	Person 1	Person 2
technology	4.95	4.10
tree structure	4.77	4.20
readability	5.00	5.00

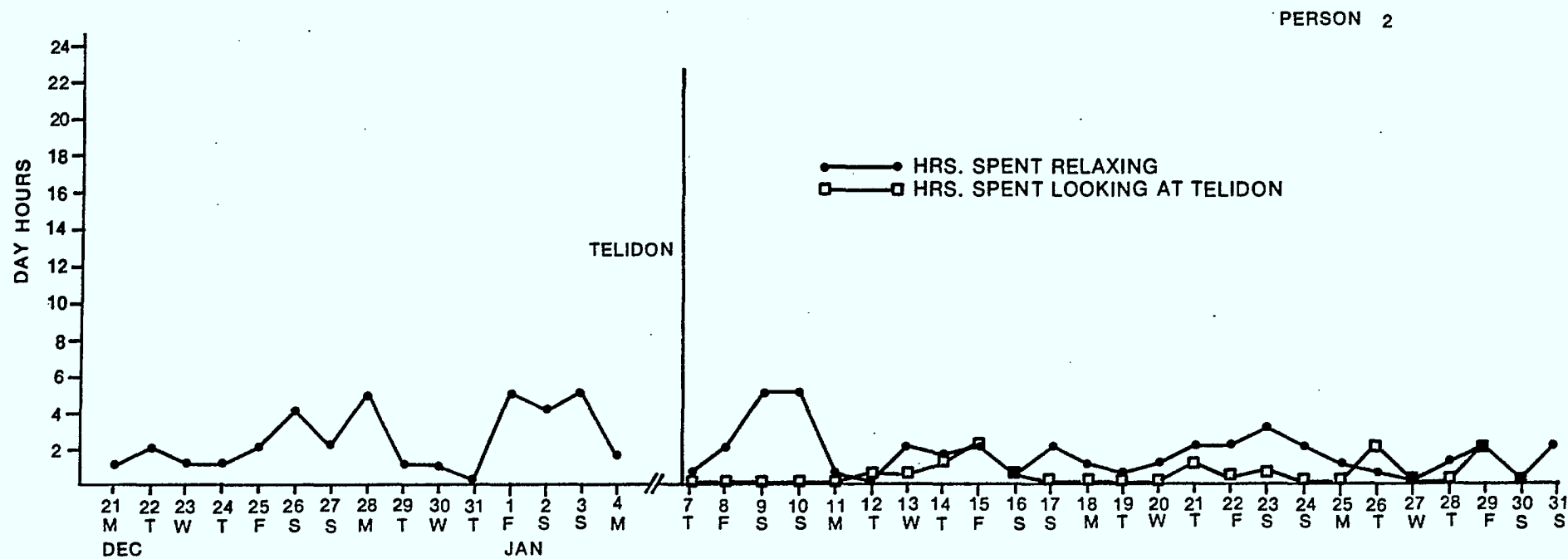


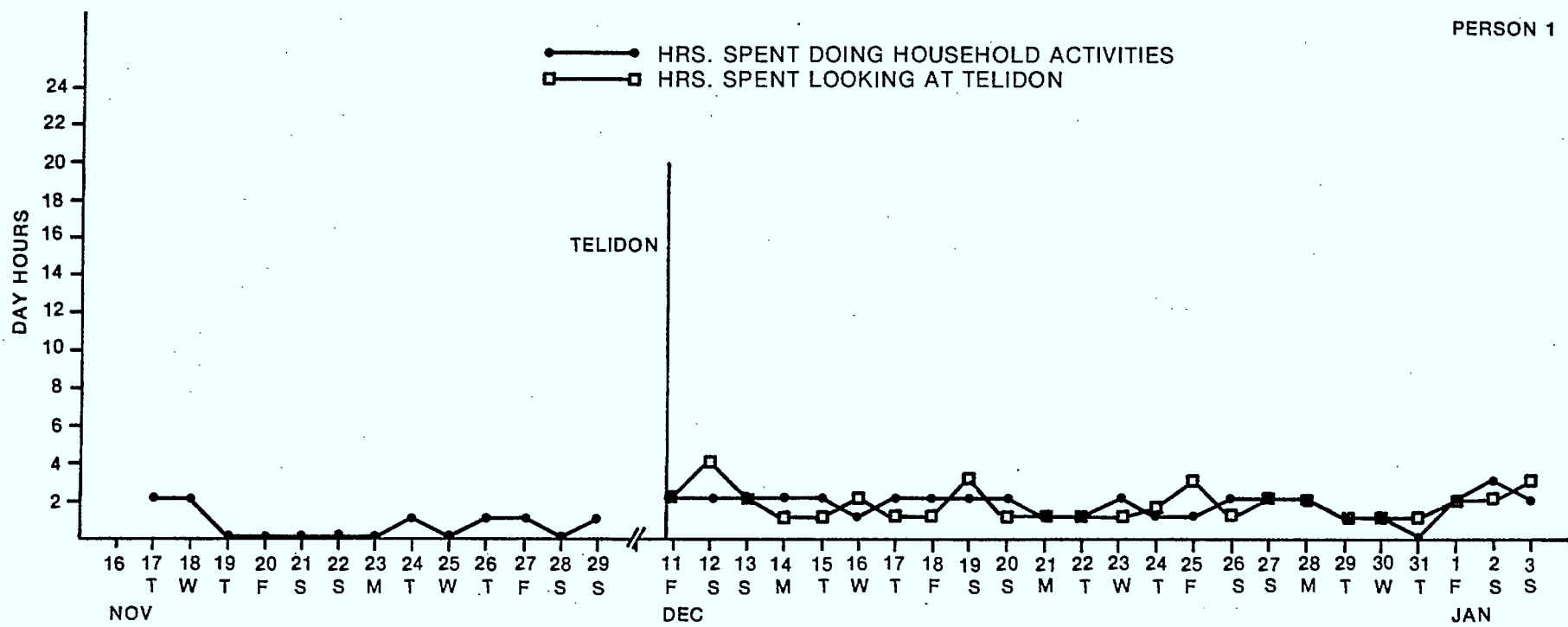
PERSON 2



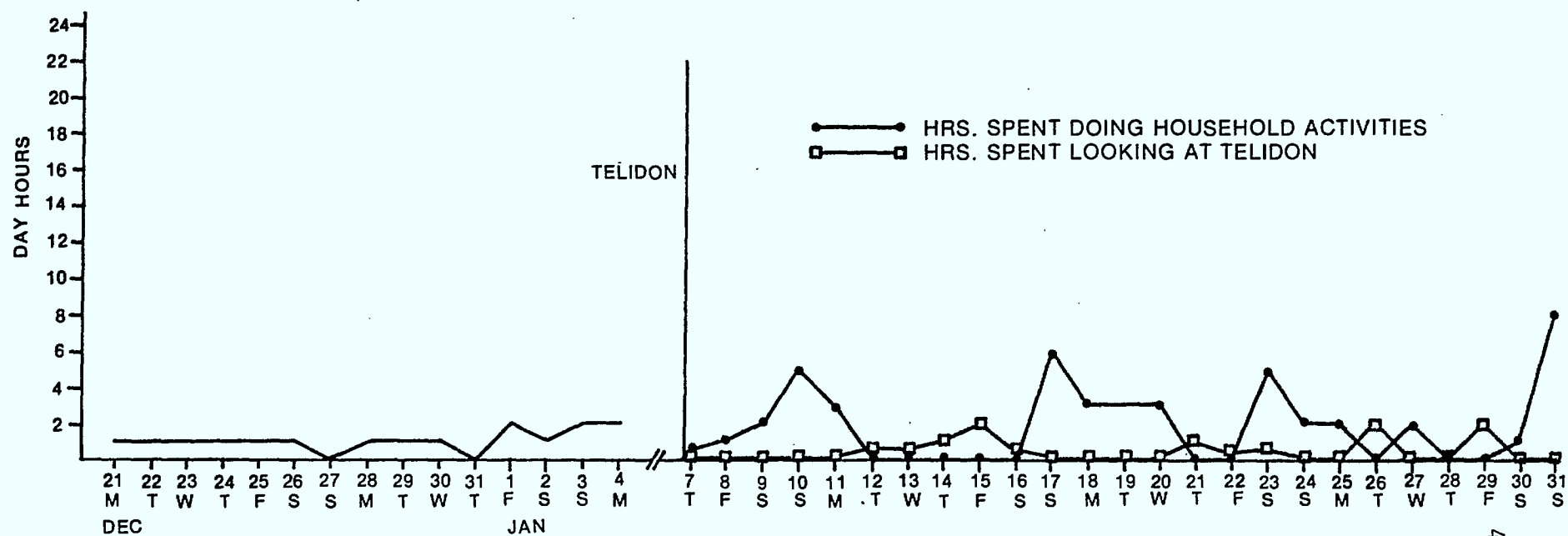


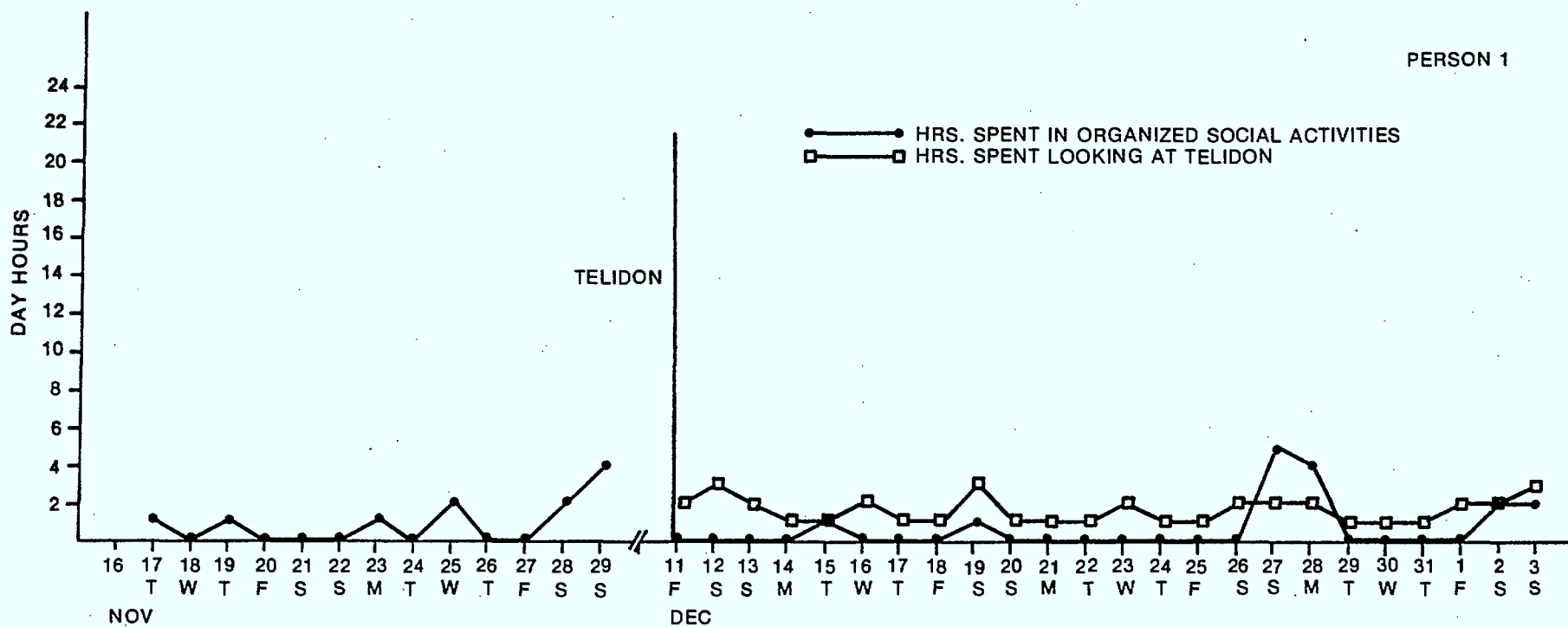




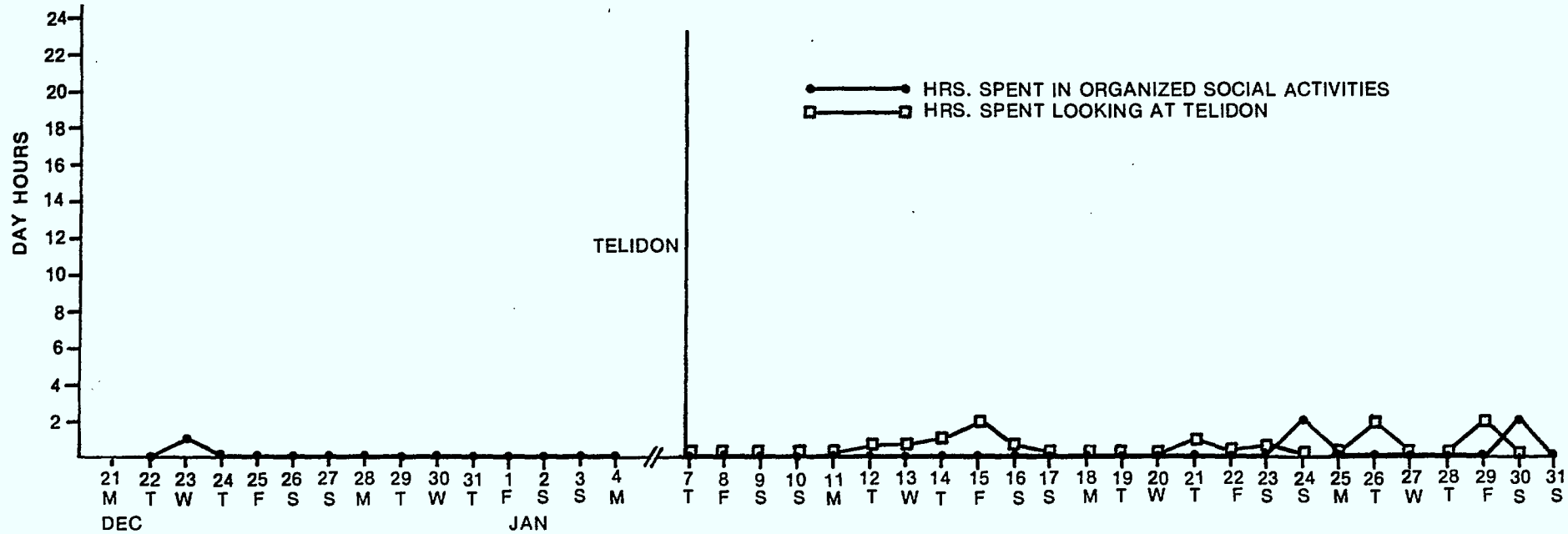


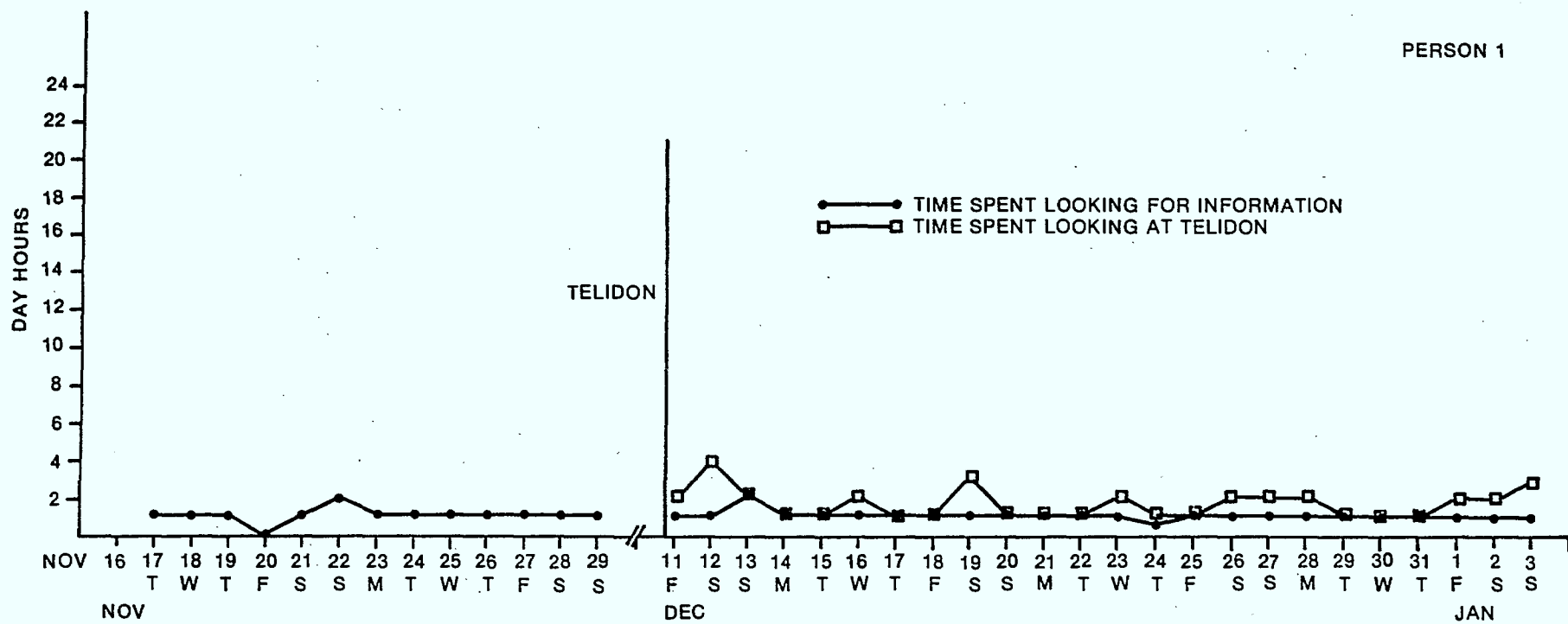
PERSON 2



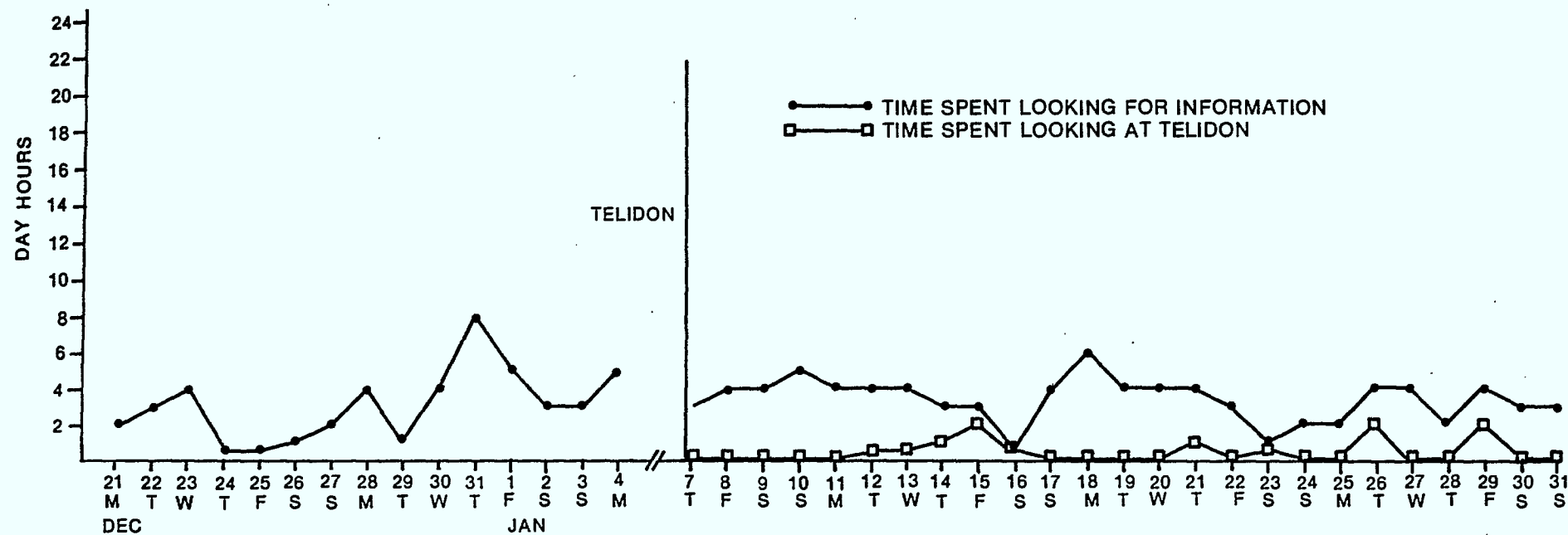


PERSON 2

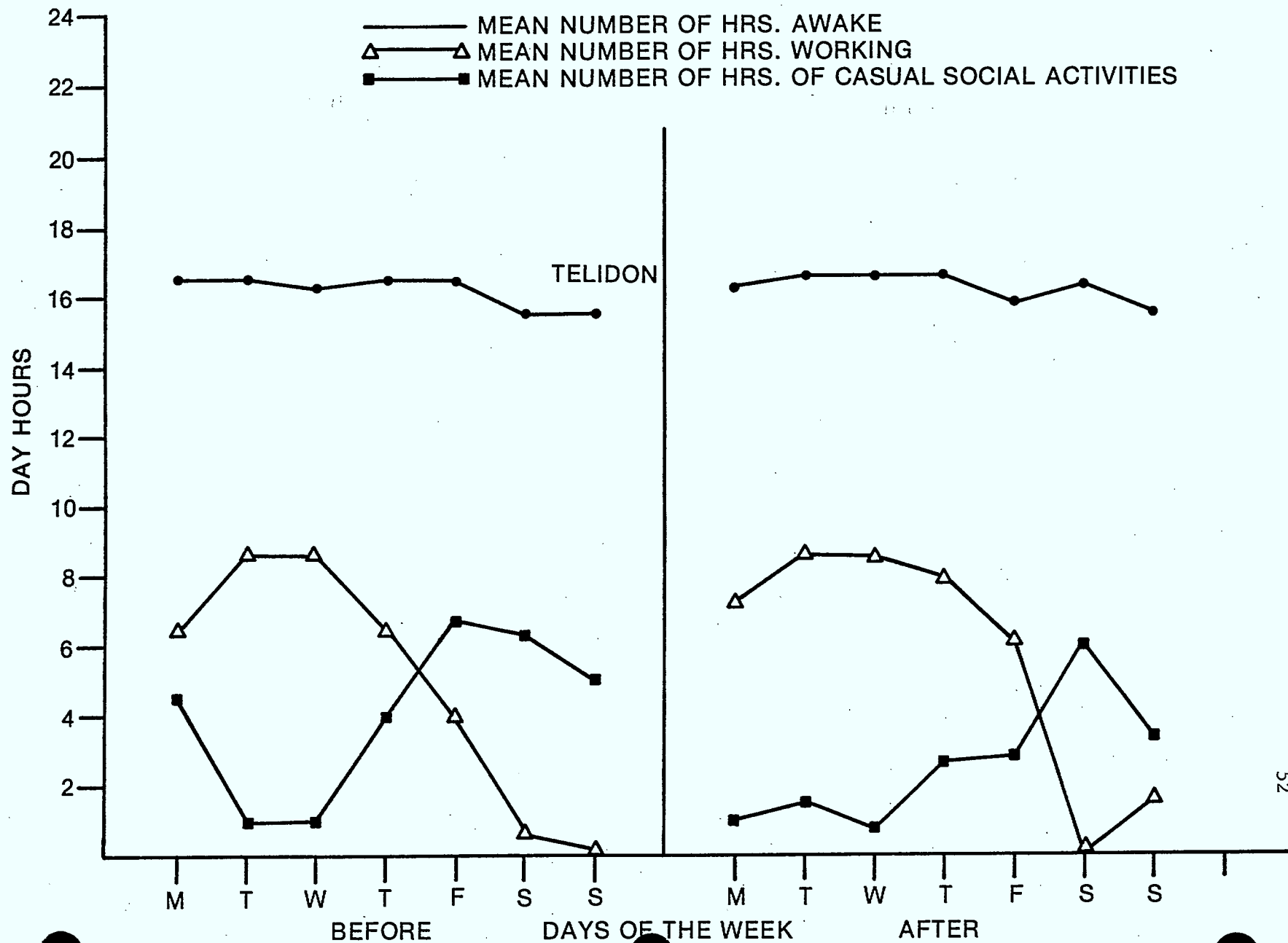




PERSON 2







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APPENDIX "A"  
PRE-TRIAL DIARY

DATE:      DAY      MONTH      YEAR

NAME:                                     

A. INFORMATION SECTION

Were you looking  
for information  
today in any of  
the 4 categories  
described below?

Did you find the  
information you  
were looking for?

Was the information  
you found generally  
satisfactory?

1. not satisfactory
2. partially satisfactory
3. satisfactory
4. entirely satisfactory
5. more than satisfactory

1. INFORMATION UPDATED  
VERY FREQUENTLY:

World news, travel,  
transportation,  
entertainment outside  
home, want ads  
finance

☐

☐ YES ☐ NO

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

2. INFORMATION UPDATED  
LESS FREQUENTLY:

Government, consumer  
reports, legal information,  
health, education

☐

☐ YES ☐ NO

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

3. ENTERTAINMENT AT HOME

Browsing - reading for no  
special reason,  
just for the  
pleasure of it.

☐

☐ YES ☐ NO

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

Fiction - reading a novel

Games - were you playing  
games

Leisure hobbies - were you  
reading on your  
favorite hobby or  
doing something  
related to it.

4. Were you looking for  
information that can not  
be classified in any of the  
categories. If yes please  
describe.

☐

☐ YES ☐ NO

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

B. ACTIVITIES SECTION

In this section, you will be asked to describe your day in terms of the number of hours in each of the categories described below.

- |  |                         |
|--|-------------------------|
| 1. How long was your day today (excluding sleep)   | Hours _____             |
| You can answer any of the following in percent or in number of hours.  |                         |
|  | <u>Hours or Percent</u> |
| 2. How much time did you spend working today?  | _____ or _____          |
| 3. How much time did you spend in casual social activities such as friends, parties or family?   | _____ or _____          |
| 4. How much time did you spend relaxing, reading, cooking, hobbies, watching TV, listening to music?   | _____ or _____          |
| 5. How much time did you spend participating in organized social activities? School board meeting, Boy Scouts, volunteer work, track club meeting. | _____ or _____          |
| 6. How much time did you spend studying, attending a lecture, at a part-time job, doing household duties.  | _____ or _____          |
| 7. How much time did you spend looking for information today?  | _____ or _____          |

TRIAL DIARY

DATE:      DAY      MONTH      YEAR

NAME:                                     

A. INFORMATION SECTION

	Were you looking for information today in any of the 4 categories described below?	Did you find the information you were looking for?	Was the information you found generally satisfactory?	Was Telidon generally useful in any way to answer your questions?	How did Telidon help you? By telling you where to find the information.	By giving you the information
			1. not satisfactory 2. partially satisfactory 3. satisfactory 4. entirely satisfactory 5. more than satisfactory	1. not useful 2. partially useful 3. useful 4. very useful 5. extremely useful		
1. <u>INFORMATION UPDATED</u> <u>VERY FREQUENTLY:</u> World news, travel, transportation, entertainment outside home, want ads finance	<input type="checkbox"/>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
2. <u>INFORMATION UPDATED</u> <u>LESS FREQUENTLY:</u> Government, consumer reports, legal information, health, education	<input type="checkbox"/>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
3. <u>ENTERTAINMENT AT HOME</u> Browsing - reading for no special reason, just for the pleasure of it. Fiction - reading a novel Games - were you playing games Leisure hobbies - were you reading on your favorite hobby or doing something related to it.	<input type="checkbox"/>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
4. Were you looking for information that can not be classified in any of the categories. If yes please describe.	<input type="checkbox"/>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO

## B. ACTIVITIES SECTION

In this section, you will be asked to describe your day in terms of the number of hours in each of the categories described below.

1. How long was your day today (excluding sleep) Hours \_\_\_\_\_  
You can answer any of the following in percent or in number of hours. Hours or Percent
2. How much time did you spend working today? \_\_\_\_\_ or \_\_\_\_\_
3. How much time did you spend in casual social activities such as friends, parties or family? \_\_\_\_\_ or \_\_\_\_\_
4. How much time did you spend relaxing, reading, cooking, hobbies, watching TV, listening to music? \_\_\_\_\_ or \_\_\_\_\_
5. How much time did you spend participating in organized social activities? School board meeting, Boy Scouts, volunteer work, track club meeting. \_\_\_\_\_ or \_\_\_\_\_
6. How much time did you spend studying, attending a lecture, at a part-time job, doing household duties. \_\_\_\_\_ or \_\_\_\_\_
7. How much time did you spend looking for information today? \_\_\_\_\_ or \_\_\_\_\_
8. How much time did you spend using Telidon today? \_\_\_\_\_ or \_\_\_\_\_

## C. SYSTEM SECTION

- |  | <u>Extremely difficult</u> | <u>Very difficult</u>    | <u>Difficult</u>         | <u>Minor Problems</u>    | <u>No problems</u>       |
|--|----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Did you have any technical difficulties to use the system today?                                | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. When looking for information in the database, did you find it difficult to use the index pages? | <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

3. Whenever you read information from the screen, was the information easily read?

4. If you had other problems please describe them.

<u>Extremely difficult</u>	<u>Very difficult</u>	<u>Difficult</u>	<u>Minor Problems</u>	<u>No problems</u>
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