

THE NURSING HOME ENVIRONMENT: AN INFORMATION
PROCESSING APPROACH

by

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B.A., Kansas University, 1975

A MASTERS'S THESIS

submitted in partial fulfillment of the

requirement for the degree


MASTER OF SCIENCE

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Manhattan, Kansas

1983

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INTRODUCTION

There has been a recent movement in the field of psychology toward a blending of divergent theoretical perspectives and content areas. For example, applied to the study of environmental psychology, the ways that people process, store, and utilize information has become increasingly important (Mischel, 1979; Palermo, 1971; Weisman, 1975). One facet of this integration involves the ecological study of the aging population (Lawton, 1970). The purpose of the present research is to delineate some ways in which a subsample of these individuals, nursing home residents, process information about their immediate environment. This will be attempted through an application of an important development in the cognitive field, the explication of script theory (Shank & Abelson, 1975; Bower, Black, & Turner, 1979). In addition to the research aspect of this paper, another goal will be to trace the evolution of the general concept of cognitive schemas from formal psycholinguistics to the understanding of common activities. This will then be compared to notions of schemas that appear in the environmental literature, the final result being a methodological framework, which will then be used to examine this one aspect of the information processing of nursing home residents.

Prose Theory and Research

Minsky (1975) has presented a comprehensive theory to account for what occurs when people encounter new situations, including narration.

Confronted with information from a present context, an individual, according to Minsky, selects from memory a substantial knowledge structure called a frame. A frame is a remembered information framework that can be adapted to fit reality; it functions as a general representation of many routine stereotypic situations. Attached to each particular structure is information about how to use a frame, and expected criteria about what should happen next. As an example of how a frame might be applied, consider the actions involved in driving a car. From learning to drive, we have stored the more important general aspects of this routine activity. For example, before I get into a car, I usually have my keys in hand and expect that I will need to open the door to get into the car. Such expectations are generated by a generalized "driving frame" which has been stored in memory. If I found that the door is already opened when I get to the car, a new driving frame will be structured in memory to represent this new situation accordingly. A number of frames may be connected to form a frame system. For example, the driving frame might be connected to a series of other frames to produce a "going-to-work" frame.

Minsky's notion of frame was integrated into other conceptualizations about the stored nature of general knowledge. Rumelhart (1976) has defined a schema to be an abstract representation of a generalized concept or situation. Two characteristics of schemas are:

1. They are prototypic, hierarchically constructed structures, which like Minsky's frames, form a framework for comprehension of specific situations.
2. Schemas may contain more information than is in the situation to which it is applied.

Rumelhart has analyzed the structure of brief, simple stories in terms of the concept of schema. Noting that many such stories in a particular culture share a similar underlying structure, Rumelhart defined a number of these common frameworks. An episode schema, for example, defines the relationship between a story's initiating event, and the goal of the protagonist. The important paths and directions of a story revolve around these major frame types. In general, a story schema may be viewed as hierarchical structure with specific details at the lower levels, and more general and abstract constituents at the top. These higher levels are essentially summaries of particular details found below them. For example, the protagonist's desire to accomplish a goal might be at the top level of a frame or schema, while the specific methods used would be lower down.

Rumelhart (1975) has proposed a set of rules to model how people might summarize texts they read. The general strategy is for the reader to take ideas most central to the overall plot of the story, and use them to produce the summaries. For instance, another schema that is part of the overall story frame system is the "try" schema. Central to this structure, which specifies the attempt at goal satisfaction, is the success or failure of the actions of the protagonist. Summaries may further be categorized according to what level of detail the summary is based on, with greater detail indicating a lower level of abstraction. Rumelhart conducted an experiment in which he gave subjects brief stories to summarize. The results showed that the summary statements were similar to ones predicted by the hypothesized rules. For example, a summarization rule exists for the attempt at goal satisfaction. In this case, if the attempt at goal satisfaction

is successful, that part of the story could be summarized by indicating that the goal was obtained, and showing the method used. In another experiment, using different subjects, Rumelhart had people recall stories used in the summary experiment. He found that recalled stories were also constructed with a significantly larger percentage of top-level statements than lower-level ones, but exhibited the following difference compared to summaries: Recalls were longer due to inclusion of 40% more lower level statement, and 84% more words overall.

Rumelhart (1975) gave some empirical support to the idea that larger units of discourse did, indeed, have a structure that is used by readers to construct logical interpretations. A further refinement on how stories are organized was set forth by Bower (1976). He postulated that simple stories have a definite structure based on their plots. These main themes are generated by a set of syntactic-like rules that, if violated, would produce incomprehensible discourse. These rules may be viewed as empirical guesses as to the nature of the components in the general schema hierarchy.

In one experiment, Bower (1976) showed that story propositions (abstract idea units) corresponding to higher level schema constituents were recalled better than propositions that were representative of lower level constituents. In another experiment, Bower had subjects rate the importance of each proposition with respect to the overall plot. The results showed that propositions from the top of the schema hierarchy were rated as being significantly more important to the general gist or theme of the story.

A very detailed attempt to explain the abstract nature and meaning of schemas in prose and discourse was put forth by Walter Kintsch. In one experiment by Kintsch (1977), readers shown a paragraph of a simple story scrambled out of its normal temporal order could give an accurate summary if the story followed a well-structured schema. According to Kintsch, story schemas are culturally specific and structured around a general knowledge of the following: a hero whose role defines the role of other characters; the causal and temporal relationships between events in the story; and a series of episodes containing an exposition, a complication, and a resolution.

Kintsch and Greene (1978) found that people construct better summaries for stories based on more conventional schemas, and further, that these stories were recalled more completely and with less distortion than stories based on culturally inappropriate schemas. Using these and earlier results, Kintsch and van Dijk (1978) presented a model of text comprehension. The surface structure of discourse (i.e. the surface grammatical constituents) is organized as a set of propositions. The micro-structure defines the structure and relationships of individual propositions. The macro-structure defines the global theme of the discourse. The micro and macro-structures are related to each other by a set of semantic mapping rules. These macro-operators translate propositions of the text into macro-propositions which represent the more global aspects of the story. Controlling the action of these macro-rules is the general story schema, that which has been internalized by readers from previous contact with culture-based stories. To recapitulate, story schemas determine which

propositions are relevant to the global theme of a story, and it is these macro-propositions that form the basis for the more abstract levels of the constructed schema hierarchy.

Summary of Prose Work

Some conclusions that may be drawn from this research are:

1. Information in larger discourse units has a definite structure consisting of a set of interrelated constituents.
2. This informational structure cannot be represented as a linear series of chunks, but appears to be arranged into a hierarchy where the more centrally important elements appear at the higher levels.
3. During comprehension, schemas that have been previously stored in memory are applied to the specific texts to be processed, and form the framework by which specific situational details are to be encoded.

In deciding how prose research related to the specific objectives of this research, the following questions emerge: First, is there evidence of hierarchical, structural relationships between constituents of the external, physical environment? Second, if these hierarchies exist, how do they compare with the structures defined in the work on prose? Third, are there research data that may shed light on the nature of these environmental components which represent abstract, general knowledge about the person-environment interaction? Finally, how are these components comprehended, stored, and reconstructed in memory?

One assumption often made in the field of information processing is that general comprehension strategies exist across different situations. One clue to what is stored in memory comes from studying

visual images people use when reconstructing a particular situation. Research on the structure and function of mental maps may, therefore, provide a basis for uncovering the types of environmental information stored in memory.

Mental Maps

Mental maps are internalized geographic representations. In research done by Kevin Lynch (1960), people were asked to produce a map of their city by imagining parts of the city that are most distinctive. In the sense that distinctiveness means central importance, this method produces a summarization of environmental information similar to summaries in the section on prose. These images were then compared with representations of the city made by a group of trained observers. Lynch found five basic elements essential to the image of a city. These constituents were: paths, which are conduits of movements, like streets; edges, which are defined as linear boundaries, as with walls and shorelines; districts, which are the distinctive areas of a city (e.g., China Town); nodes, which are entities that can be entered like doorways and intersections; and landmarks, which define physical points of reference (e.g., statutes, the golden arch). Lynch found that the images produced were not precise, but appeared to be the result of a process involving a reducing, an eliminating, an adding, a fusing, and a restructuring of the original elements of the perception. In a different analysis, David Stea (1969) has stated that geographical areas represented in mental maps are schematizations that may oversimplify and/or augment items not originally present in the stimuli. He says

further that these distortions are based on preconceived categories and expectations.

Summary of Mental Maps

The five elements found by Lynch give credence to the idea that there are separate identifiable constituents of the external physical environment. These component structures appear to be entities around which details of specific situations may be encoded. Coupled with the notion put forth by Stea that mental maps are essentially schemas, there is strong support for postulating the existence of environmental knowledge frameworks similar to those associated with prose. Although seeming to be very analogous to its prose counterpart, it is not clear from analysis of mental maps if the environmental elements are organized in hierarchical fashion. Kintsch has stated that with simple stories, constituents that end up high on the hierarchy attain that position under the direction of the story schema. Central to this underlying goal is the accomplishment by the protagonist of the major goals in front of him. With this in mind, it might be said that it is the human element of the story schema that forms the background and backbone of the overall framework. What seems to be missing from mental maps, as defined by Lynch (1960), are the reasons why people would want to move through nodes and into pathways and the importance these goals might have on the etiology of peoples' geographic representations. Therefore, to answer the questions of whether environmental schemas are hierarchical in nature, and to see how they compare with those of prose, what is needed in the analysis of environmental elements are

the actions of people. One theory defining the relationship of people, their actions, and the environment is that of behavior settings.

Behavior Settings

Behavior settings were discovered (defined) by researchers attempting to delineate how environmental stimuli correlate with behavior. While analyzing behavior of children in a school setting, Barker (1968) noted the following:

1. The character of behavior often changed dramatically as the child moved from place to place (e.g., classroom to hallway).
2. The behavior of different children in the same environment was often more similar than behavior of the same children in different environments.
3. There was more congruence between the overall goal of a child's behavior and a specific location, than between particular aspects of behavior and the area where the behavior occurred. This last observation is important to the present analysis because it points to the influence of goals in the organization of behavior settings.

Behavior settings consist of one or more standing patterns of behavior, plus the surrounding milieu. A standing pattern of behavior is a discrete set of actions with temporal and physical boundaries which define the enclosing milieu. As an example of a behavior setting, consider the common action patterns occurring in a grocery store. The milieu would consist of the physical aspects of the store as well as the hours the store is open. An important related concept is that of synomorphy. As an illustration, consider the activity of watching television. The television itself faces, in a functional way, the

person doing the watching. The chair in which the watcher sits is positioned in space to place the viewer into direct visual line with the television. The television and the chair, part of the milieu, have a physical and temporal correspondence in relation to the activity. This is what is meant by synomorphy. Behavior settings have an internal structure with some components having little power to control the organization of the setting, like students in a classroom situation. Other parts of classroom setting, like teachers, have a great or total control over standing action patterns. This power to control is called penetration, and the components possessing this power are called penetration zones. Penetration is actualized through the workings of programs, or schedules, or action patterns. A teacher's daily lesson plan is a type of program as it organizes classroom activity to serve the goals of the teacher. As a final comment on the structure of behavior settings, one important inherent property is that their unique character persists even when the specific participants change. This means that the action patterns and milieu of the grocery store remain the same as different customers enter and leave the setting. Just as story schemas are generalized, abstract frameworks that are applied to specific instances, behavior settings appear to have a similar structure and function.

Comparison Between Prose Schemas and Behavior Settings

There are a number of properties of behavior settings that are similar to those of story schemas. Table 1 summarizes analogous characteristics. In conclusion, it appears that hierarchical relationships do exist between interacting components of the external

Table 1
Comparison of the Properties of Behavior
Settings and Story Schemas

Behavior Settings	Story Schemas
1. Consists of action patterns enclosed by physical and temporal boundaries.	1. Events are causally and temporally related.
2. Internal structure has zones of penetration that have a dominant influence over other components.	2. Components are organized into a hierarchy with lower levels in service of protagonist's goals at top levels.
3. Global behavioral goals are more important than specific actions and determine the synomorphic relationships of a particular setting.	3. The abstract, generalized schema determines production of macro-propositions.
4. The abstract structure of settings remains the same when the participants change.	4. Story schema structure remains the same even when specific details change.

environment.. Further, these environmental schemas, in many ways, resemble the schemas of simple stories. There are, however, some differences between the two. Whereas story schemas have been shown to have an abstract representation in memory in terms of propositions, behavior settings define external relationships between different components of the environment. The nature of these relationships in memory, although explicitly implied, is not directly dealt with in behavior setting theory. In other words, the last two questions posed in the summary of prose concerning the nature of environmental schemas still need to be answered. Two experiments will be reviewed next that examine the stored nature of these schemas.

Event Memory

Brewer (1978) defined an event as a set of happenings occurring over time, with a majority of events being goal-directed. After a comprehensive review of literature, Brewer concluded that evidence pointed to events consisting of a hierarchy of action sequences involving goal-directed plans or episodes. He therefore proposed the following: Events are organized during the encoding process by a plan schema which directs inferences observers make about actors' goals, and the relationships between actions. At the top of the hierarchy are actions and associated goals for whose benefit actions and goals below them are initiated. Brewer set up a series of experiments to see if people could agree on the goal structure of events, and to explore how the plan schemas work.

Summary of Experiments

Norming study. The purpose was to produce a set of discrete actions. Subjects viewed a scene in short segments, and were asked to write down every action in detail. Using a majority of subjects response criterion, 70 actions were extracted by experimenters from the subject protocols.

Experiment 2. Different subjects were given lists of action units from the Norming Study. They indicated which actions were done in order to do other actions, and to indicate if actions were directed toward a major or super-ordinate goal (G-units), or not directed toward a major goal (NG-units). Results showed significant (modal response = 80%) agreement on what are G and NG units.

Experiment 3. The purpose was to see if G units were recalled better than NG units. A new group of subjects saw a taped sequence of action units, and after a specified time recalled units in order of occurrence. G units were remembered significantly better than NG units.

Experiment 4. The results showed that when events are presented to subjects in their normal, temporal order (i.e., the order of the plan schema) recall of temporal location is almost perfect. Presented out of temporal order, events are most likely to be forgotten.

Summary and Relevance of Results

Ordinary events consisting of sequences of actions were shown to have an abstract representation in memory. These plan schemas were constructed in hierarchical fashion with the major goals of actions at the upper frame levels. Since these plan schemas were constructed in

hierarchical fashion with major goals of actions at upper frame levels, it can be concluded that schemas for simple stories and simple events share at least some similarities. These results are also important because they indicate that one of the major constituents of behavior settings, actions, have an abstract representation in memory. A further finding of import was that major goals directed components to various levels of the schema hierarchy. It is apparent that schemas representing both information about the external environment and simple stories are structurally and functionally similar. In the next series of experiments, schemas for common, routine activities were examined in a direct fashion.

Scripts in Memory for Texts

Bower, Black and Turner (1979) explored peoples' knowledge about routine activities, and how this general knowledge is used to comprehend and remember narrative situations. Scripts, an extension of Minsky's frames, are used to define these activity schemas. In the summaries to follow, experiments thought to be especially important to the present context are expanded upon.

Experiment 1

In this experiment, subjects produced action sequences for one of five common situations (e.g. getting up in the morning). The instructions to them were:

Write a list of actions describing what people do when getting up in the morning. We are interested in the common actions involved. Start the list with waking up. Include about 20 actions or events, and put them in the order they would occur.

The results indicated a general agreement on the basic units of routine activities. Bower et al., used actions mentioned by at least 25% of the respondents as the lenient criterion for inclusion in the underlying script. A criterion of 40 to 50% frequency of mention was used to indicate more popular actions produced. Popularity here is postulated to possibly reflect how prototypical a particular action is in relation to a given activity. The experimenters also found that high level actions tend to be rated higher on a scale of importance.

Experiment 2

The purpose was to look at script organization by examining the natural segmentation in scripts. A different set of subjects read stories constructed from script actions taken from Experiment 1, and were instructed to indicate if and where a natural break occurred. Results showed almost total agreement on where breaks occurred. The conclusion drawn was that scripts are not a linear series of actions all at one level but consist of chunks or sets of actions occurring at different levels of script organization. For example, in the Doctor script, subjects defined a break to occur between the Doctor ordering a prescription and the patient getting dressed.

Experiments 3-4

These experiments examined the role of script-based inference on reconstructive memory. In general, the results showed that underlying scripts do influence the specific situational details that are recalled and recognized.

Experiment 5

This experiment showed that script actions presented in culture-wise natural order were recalled about 30% better than if out of order.

Experiment 6

Testing the notion that memory activation of one component of an underlying script would enhance memory for other components, it was hypothesized that actions that follow each other in an encoded text will help cue corresponding script components, thereby aiding recall. Comprehension time was found to be faster only when both text and script actions immediately followed each other.

Experiment 7

In real life as opposed to laboratory situations, what components are included as part of a specific script is often a function of what is perceived as important at the time, and not just expectancy criteria of the underlying script framework. One prediction, then, would be that certain interruptions in the flow of routine activities would be processed more deeply (being more important), thereby having a lower threshold for memory. The results were confirmed, showing that interruptions were recalled much more often than incidental occurrences.

Summary of Relevant Script Concepts

1. Common activities are represented in memory by abstract activity schemas called scripts. These scripts are organized into a hierarchy with the major goals constituting the higher level elements.

2. Schemas for simple stories, common events, and routine activities share a similar structure, and are conceptually based on Frame Theory.

Since some of the procedures used by Bower can be administered with relative ease, these, or variations of these procedures, might be constructively used for exploring the nursing home environment.

The Nursing Home Environment

The specific purpose of this research is to explore schema construction of nursing home residents. Since routine activities have been shown to be efficacious choices on which to base scripts, they would appear to be highly adaptable for study of the nursing home environment. Aside from defining common activities, decisions must be made concerning methods by which to elicit scripts and to discern their organization.

Routine Activities

For the purpose of discerning representative nursing home activities, a pilot study done previously proved beneficial. In this study, residents from one facility produced descriptions about their environment, one part of which were activities of both the residents (themselves) and the staff. The purpose, methods, results, and discussion of this survey are summarized as Experiment 1 in the next section. Using these activities as a base, the design of procedures for producing scripts and delineating their nature was initiated. Before discussing these strategies, a few general comments about the nursing home environment are in order.

Research in nursing homes presents some special problems as well as special opportunities. Residents may differ in the desire and capability to participate in one task or another. It is of utmost importance that

the comfort and well-being of residents who are approached be a primary consideration, with no hint of obligation given to them. In general, any procedure should allow for optimum level of response while keeping the comfort of the resident at its highest possible level.

Another variable to consider is the balance struck between needs of residents and those of the institution in which they live. Daily time schedules of residents are often well structured both for the individual's well being and the efficient running of the facility. This may limit the amount of time a resident might have to spend in a research project, as well as occupying the part of the day in which communication with them may be initiated.

One opportunity inherent in the nursing home environment is the potential comparison of two distinct groups of individuals, the residents and the staff. Staff-based scripts could be compared to ones produced by residents, thereby increasing the possibility for drawing meaningful conclusions about their natures. This contrast might also provide information about the influence of perspective on script construction. Phrased as a question, would staff members, given the same instructions to describe residents' activities, produce scripts in terms of the residents' points of view, or their own? Finally, examining both types of scripts could increase awareness of the important goals underlying routine, nursing home activities.

Script Construction

Any procedure must meet at least two criteria: (1) ease of application, and (2) potential to produce relevant results. The relevance of the results of the Bower, Black and Turner (hereafter,

BBT) study has already been established. If the procedures they used were also easy to administer, they could serve as a basis for designing present procedures. From Experiment 1, experience has indicated that a procedure involving both an oral presentation and response, in contrast to some written task, would give residents the best opportunity to comfortably and accurately communicate their perception. The methodology used by BBT, especially in their initial experiment dealing with script generation, appears to be very adaptable for this purpose. The instructions are given to subjects orally, and subjects' responses could easily be given orally and recorded on tape. For these reasons, the procedure for script construction may be summarized as follows: residents produced scripts based on routine activities generated in the pilot study of this paper (Experiment 1 of the method section), and used procedures adapted from BBT's experiment reported above (p. 14).

Script Organization

Based on the research reported previously, the following factors seem to underlie what is known about the structure of scripts:

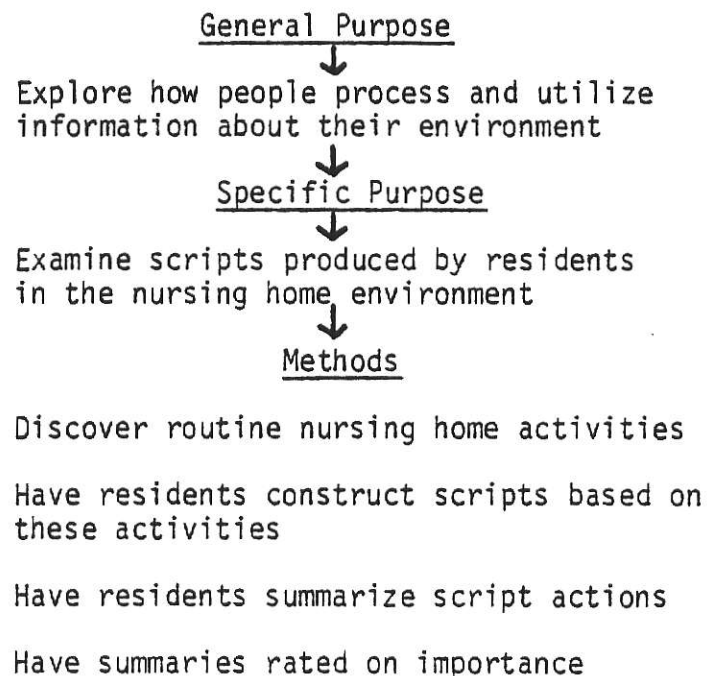
1. Script activities are arranged in a hierarchy with the elements most important to the global theme or goal residing at the top levels.
2. These higher level constituents are more likely to be produced in recall and summarization tasks.

One approach, therefore, for delineation of script organization would be to have residents summarize the actions of the base scripts they produce. A further refinement of script structure might be achieved by having these summary actions rated on level of importance

to the overall goal of the activity in question. Bower (1976), and BBT (1979) have shown that ratings of schema or script actions on importance correlate highly with predicted hierarchy position. In accord with these conclusions residents summarized the actions from the scripts they had produced initially, and then rated these summary actions on level of importance.

Summary of Main Objectives and Procedures

The flow of this study from general to specific elaboration is now shown graphically.



EXPERIMENT 1: PILOT

Experiment 1 was used to produce a pool of activities routine to a specified nursing home environment.

Method

Subjects

A list of 33 residents from College Hill Nursing Facility, Manhattan, Kansas, were obtained from the home's head administrator. The process by which residents were selected as potential participants was: The head administrator went through the entire list of people who were living at the facility at that time, and chose individuals on the basis of physical and cognitive competence, and potential willingness to take part. Of these 33 residents contacted, 17 agreed to participate.

Procedure

A "tour" procedure was given to residents individually while in their own room at the nursing home. The tour involved having the individual make a mental trip through their immediate environment. For this study, each resident was given the following instructions: "Suppose my grandmother was coming to your nursing home, and you were going to take her on a tour. Where would you take her first?" After the resident gave the tour stop, they were then asked, "How might you describe this stop to her?" This process was continued until the residents said the tour was completed. A particular tour was "completed" when a resident could not respond further to the question, "Are you sure there are no more stops you would have liked to take my grandmother to?"

Past this, no obligation to continue the procedure was placed on a particular resident.

Tour stops and descriptions were written down by the experimenter in as much detail as possible, and in the order they were given. The length of the task depended upon the attentiveness and conversiveness of the participant, the average time probably being between 45 minutes to an hour. Some extraneous conversation was deleted on the basis that it was not part of the tour. It was also necessary to be flexible to help in elucidation of the procedure, and to alleviate anxiety of residents where possible. For example, the instructions, "and you were going to take her on a tour," was sometimes paraphrased, "and you were going to show her around your home." In general, paraphrasing like this was used when needed to help residents understand the nature of the procedure.

Results and Discussion

The results are summarized in Table 2. In the table, tour stops are the responses to the question, "Where would you take her first (next, etc.)?" The second column gives the total number of residents who gave that same tour stop. "Total number of descriptions" sums all of the residents' responses about a particular tour stop from the question, "How would you describe this stop to her?" A response here is defined to be a statement made by a resident used to describe a tour stop. "Number of descriptions involving actions" refers to descriptions produced by residents showing some actions they, themselves, make, or an action produced by another person. Action descriptions or statements are defined by inclusion of some verb of action with or without a direct

Table 2
Results of Tour Procedure

1	2	3	4	5
Tour Stop	No. of residents mentioning tour stop*	Total Descriptions	No. of descriptions involving actions	% of Action Descriptions
Resident's own room	12	89	65	73
Dining room	13	59	26	45
Therapy room	8	21	16	80
Whirlpool bath	5	25	11	44
Hallways	8	20	7	29
Front entrance	5	19	9	48
Outside areas	7	13	9	69
Administration office	8	10	7	70
Nurses station	5	15	5	33
Kitchen	9	19	11	59
New wing	6	27	6	45

*Out of 17 tested.

object, and with or without the property of cause and effect associated with it. For example, the following statements could have been included in Column 4 of Table 1:

"I opened the door"--i.e., open is a causal action verb with a direct object.

"I sat at the table"--i.e., sit is a noncausal action verb without a direct object.

The last column is the proportion of action descriptions over the total in Column 3.

It may be seen from Table 2 that the resident's own room and the dining room were the most frequently mentioned stops on the tour. The therapy room and the hallways connecting the residents' rooms to the rest of the nursing home were the next most widely mentioned tour stops, with the whirlpool bath fourth in total descriptions. That these particular results were obtained is reasonable, as residents probably spent more time in these areas than in other places. This would certainly be true of the residents' own rooms, with total descriptions for this stop far exceeding the total for others. Interestingly, the therapy room had the highest percentage of action descriptions, indicating that the type of activities associated with an area might be another important variable in the production of action statement. This means that the time residents spend in the therapy room contains more actions per unit of time than other areas with a comparable number of total descriptions.

Below the dotted line at the bottom of Table 2 are two stops, the kitchen and the new wing, which are separated for special mention. As seen in the table, the kitchen ranked relatively high in the various

tour stop categories. This was not expected since the main contact residents had with the kitchen was through a view through the serving window. Although the residents could see some common activities being performed, like cooking, this alone does not seem sufficient for explaining why the kitchen was mentioned so frequently. This suggests that a third variable, past experience, could have been affecting what was being mentioned on the tour (see Lachman, et al., 1979, pp. 280-283). Many residents probably had strong attachments to the kitchen areas of their previous home settings whose influence propelled the production of inferences in the present situation. The new wing was just being built at the time this study was taking place. It is an area of interest because residents were not able to go into this section of the nursing home at that time. Even so, the new wing was mentioned fairly often by residents as part of the tour. Explanation of this finding hinges on a fourth possible factor influencing what is mentioned and described. It was noted during the survey, that residents often noticed, and therefore mentioned, even slight changes in their physical and social environment. Being a change of great magnitude, the building of a new wing would be expected to be included in residents' mental ordering of their environment. They may have also thought a new wing would have been of special interest to a visitor. This is not to say that the nursing home elderly are unique in the perception of novelty. What it might show is the potent effect of change in a relatively structured environment.

Summary and Conclusions

Using the described "tour" procedure, a list of tour stops and descriptions was produced, culminating in the following speculation:

1. The more time a person spends in a certain area of the nursing home, the greater will be their capability to describe that area.
2. The type of activities people associate with a particular area will affect the total number of descriptions produced as well as the number of action descriptions produced.
3. Spaces, like the kitchen, that may have been important in the past, or have indirect importance now, can continue to be important in the present, even though accessibility to these areas is limited.
4. Environmental changes may affect the type and amount of information processed.

EXPERIMENT 2: SCRIPT PRODUCTION AND RATINGS OF IMPORTANCE

In Experiment 2, nursing home residents and staff members constructed scripts about routine nursing home experience, and rated individual script actions in terms of importance.

Method: Residents

Subjects

The same procedure used in Experiment 1 (approximately one year previously) to collect subjects was employed here. Potential participants were chosen by the same head administrator at College Hill Professional Care Facility in Manhattan, Kansas. The sample consisted of 20 women and 5 men with a mean age of 83. There were 13 repeats (3 men) from the pilot experiment.

Materials

To produce a reservoir of routine activities from which residents might construct scripts, the following strategy was used. Using Table 2 from Experiment 1, the first four tour stops were chosen with the idea that they could be used as a basis for the script activities. The four stops were: the resident's own room; the dining room; the therapy room; and the whirlpool bath. The hallways were also mentioned with some frequency, but appeared to function basically as physical and conceptual connectors [paths] between major activity areas. The other tour stops, because of lower frequency of mention, were not considered as representative of common, routine activities.

In summary, tour stops were chosen from Experiment 1 on the basis of being potentially relevant to the construction of nursing home scripts. One major assumption of this strategy was that it was expected that most nursing home facilities, in fulfilling service commitments to residents, would have similar programs, and also would have similarly designed areas. Therefore, these activities should be applicable to most facilities.

After the appropriate tour stops were selected, activities thought to be particularly representative of each stop were defined. These four ostensible activities were: going to the whirlpool bath; going to therapy room; going to eat in the dining room; and going to sleep at night in the resident's room. These were the choices because the resident's own room and the dining room had the highest number of people mentioning them, as well as the highest ranking for total descriptions, as seen in Table 2. The therapy room and the whirlpool bath, as mentioned, also had comparatively high proportions of action descriptions, with the therapy room stop being the higher of the two.

Using the above criteria, the activities involving the therapy room, the dining room, and the bedroom were used as a basis for script construction for both residents and staff. The activity of going to the whirlpool bath was used as an alternate, in case a participant was not familiar with one of the three main activities. It was decided to present respondents with no more than three major events because of concern for the physical well-being of residents, and the desire not to conflict with ongoing activity.

Procedure

The general procedure for Experiment 2 involved two parts, a script production phase and an importance ratings phase.

Script production phase. Each participating resident was asked to construct scripts based on the three main activities. Upon prior consultation with the head administrator of the participating nursing home, it was decided to present the activities in the following "natural" order: (1) going to the therapy room, (2) going to eat in the dining room, and (3) going to sleep in their own rooms. This was considered more natural than other combinations because it represented a "morning to evening" temporal ordering of the activities. It was hoped, therefore, that this style of presentation would enhance the routine-like quality to residents. If one of the three main activities was not familiar to one of the participants, the event of going to the whirlpool bath was substituted.

Each participating resident received the following instructions:

Please describe what you do when you (for example) go to the therapy room. Please give, in as much detail as you can, the actions involved with this activity. Please also try to put these actions into the order you feel they normally occur.

When the residents finished the first activity, the same instructions were given for the second and third. If at any time, a resident needed clarification on part or all of the procedure, they were given any help they needed. However, the exact nature of the task was withheld until residents had ended their participation. This single session typically lasted about 20 minutes. After finishing this session, participants were asked if they wanted to continue with the study, and if so, a time was set up to conclude the procedure, i.e., the importance rating task.

In general, timing for this last phase was more than one day from completion of the first session. An attempt was made to not tax a particular resident by coming back too soon, while trying to keep the intervals for all participants as constant as possible. All responses were recorded on a cassette tape recorder, with the resident's permission.

Importance ratings phase. Prior to the second session, written transcripts of the action sequences produced by the residents were made. Originally, it was hoped to have residents summarize the actions contained in their scripts, and then to rate these summary actions in terms of importance. However, after discussing the procedure with the first few residents, a decision was made to delete the summary portion, and to have all participants simply rate script actions in terms of importance. The concern that developed was not for the length of the procedure (all script actions were rated on importance), but for confusion in conceptualizing what summary statements were. The garnering of importance ratings was considered noteworthy, nevertheless (see introduction on pages 18-19), with the scale used for this purpose as follows:

<u>1</u>	Very Important
<u>2</u>	
<u>3</u>	Important
<u>4</u>	
<u>5</u>	Not Very Important

The procedure used for elicitation of importance ratings from residents was:

1. The procedure for the first session was briefly summarized and the general format of the second session was outlined. This consisted of telling residents they were going to be read the script actions they

had produced during the first session, and were going to rate each action on importance.

2. Importance was briefly discussed as involving the relevance of individual actions toward completion of the activity in question.

3. Residents were then shown a 2 foot by 3 foot cardboard schematic of the five point scale presented above. The background was white with blue numbers and letters. Each resident was asked if they could read and understand the visual presentation.

4. For each activity (Whirlpool, Dining Room, Therapy Room, and Bedroom), residents were given the following instructions. "Please choose the number on the scale which best represents how important you feel each of the actions you mentioned are to completing this activity. I will read each action, and you tell me the number." Responses were written down by the researcher as they were given.

5. After completion of the ratings task, questions concerning the entire procedure were answered, residents were thanked for their participation, and the interview was ended.

Method: Staff

Subjects

After the residents had completed the procedure, 24 staff members agreed to participate in the study. The breakdown of the sample was as follows: 19 women (including 11 nurses aides, 6 nurses, 1 social worker, and 1 physical therapist); and 5 men (all orderlies).

Procedure

Script production phase. Instructions to participating staff members were the same as those given to residents, except that "What you do?" was changed to "What the residents do."

These changes reflected two interrelated design aspects of this study. First, staff members usually do not reside in the nursing home itself. Therefore, how they personally define a routine activity could be in terms of their own perspective, that of the resident, or a combination of the two. If staff members were instructed to construct scripts based on their own perspective, it would be expected that the scripts would revolve around the services they perform as a function of their position on the nursing home staff. Second, since one of the purposes of this study was to see how staff members perceive the interaction of residents with the environment, procedural instruction to staff were couched in terms of what residents might do, and not themselves.

Importance ratings phase. The rating of script actions by staff involved the exact same procedures used with residents, except that "How important you feel" was changed to "How important residents feel" (i.e. from the perspective).

Two other measures concerning residents were obtained from staff members, one dealing with adaptation, the other with ambulation.

1. Adaptation--Each staff member rated participating residents on adaptation to the nursing home environment on a five-point scale developed by the nursing home's head administrator and the researcher. This involved discussing possible ways of defining adaptation (Kahana,

1975) and then having the head administrator detail specific characteristics of adaptation within this particular nursing facility. The scale, along with instructions, is presented in Appendix A.

2. Ambulation--Each participating resident was given an ambulation rating by the nursing home head administrator, with one (1) being most ambulatory to five (5) least ambulatory. Time considerations precluded all staff members from giving ratings on resident ambulation. This, however, did not seem to present any difficulty considering the objective nature of the measure. The entire scale is presented in Appendix B.

A time limit of approximately 20 minutes was placed on staff interviews by the nursing home head administrator. This was to allow for interview time while not hindering the work routine of staff members.

RESULTS AND DISCUSSION

Overview

The Results and Discussion section will be organized around the following themes: (1) the organization of individual scripts into overall (generic) scripts, (2) the relationship between script action-importance and script-action frequency of mention, (3) a comparison of script scenes using mean importance ratings, and (4) the relationship between script scene importance and the demographic variables of age, adaptation, ambulation, and length of stay for residents, and length of work service for staff members.

Organization of Individual Scripts Into Generic Scripts

After the individual script elicitation process had been completed, generic scripts were constructed by the researcher. The general procedure for generic script construction was: (a) deciding which script actions were to be included in the generic activity scripts, and (b) definition script scenes and subsequent placement of actions into an appropriate one.

Inclusion of Actions into the Generic Scripts

For each of the four activities (i.e., whirlpool, therapy, dining room, and bedroom), and for each group (i.e., residents and staff), actions had to be mentioned by approximately 20% of the respondents to be included into a generic activity (the sole criterion for initial inclusion being frequency of mention). The rationale for this comes directly from the definition of scripts (Bower, Black, & Turner, 1979)

placing a qualification on scripts as representative of common cultural experience.

The script actions in this study, as those in the Bower et al. experiment, were classified using the frequency of mention criteria into the following categories: low frequency of mention--20 to 35% of the respondents of a particular activity script; medium frequency of mention--36 to 50%; and high frequency of mention--above 50%.

One difference found between the scripts in this study and those from the Bower et al. study involved the number of actions mentioned frequently. In general one criterion used for analyzing whether activities chosen to elicit scripts might not represent the common experiences of people in a particular culture is to examine how many actions are mentioned by a relatively few number of people. This is called subject agreement. There was marked subject agreement in the Bower, Black, and Turner (1979) study, but not nearly so much in this study. Bower et al. (1979) found only about 3% of all actions mentioned were done so by just one subject while, in this study, the figure was approximately 20%. Additionally here, only about one-half of the actions were mentioned with enough frequency to be included in scripts, even under the low frequency of mention criteria. This is much less than would have been expected considering the results of the Bower et al. (1979) experiment.

Reasons for this difference could be due to one or both of the following factors: (1) sample size, and (2) length of scripts.

1. Sample size. The five scripts used in the Bower et al. (1979) study along with the number of people who produced the scripts were as

follows: grocery script (n = 37); getting up in the morning script (n = 35); restaurant script (n = 33); lecture script (n = 32); and doctor script (n = 24). In the present study, the sample sizes for the script activities were: residents--whirlpool script (n = 13); dining room script (n = 21); bedroom script (n = 21); for staff--whirlpool script (n = 24); dining room script (n = 24); and bedroom script (n = 17).

Assuming that the nursing home activities used in this study were truly common, routine nursing home experiences, it would be reasonable to expect the more unique, uncommon actions to decrease, percentagewise, the larger the sample. Whether the difference between the Bower et al. samples (mean = 32) and the samples in this study (mean = 20) was great enough to affect the number of actions mentioned by a small percentage of the samples is not precisely known.

2. Length of scripts. Subjects in the Bower study were instructed to write at least 20 actions for each script. In this study, in terms of the number of actions included in the scripts, the whirlpool activity had the highest mean length for both residents and staff, 4.40 and 7.79 respectively. Again, assuming the routineness of the activities, it would be reasonable to expect that the greater number of responses per subject, the higher number of common actions produced.

Another factor, related to the length-of-scripts variable, which might help explain the difference in subject agreement between this and the Bower et al. study, involves the varying length of time residents and staff spend in their facility.

The average length of stay for residents was 13.5 months with a standard deviation of 19.61. For staff members, the average length of

work service for staff members was 11.21 months with a standard deviation of 10.96. In effect, this seems to point to both residents and staff spending highly varying amounts of time in the nursing home. It might be expected, then, that their agreement on common script actions might also vary, especially when compared with routine experiences people have in the wider culture.

In the previous research mentioned (i.e. Bower 1979), scripts were conceptualized as being organized into a series of logical and meaningful scenes based on goal patterns of activities. In this study, each generic script was carefully examined to see if actions could be grouped, either temporally and/or conceptually, into a set of separate constituents. As a result, four generalized script scenes were defined as follows: a preparation scene, an initiation scene, a completion scene, and a transition scene.

Definition of Scenes

In the first part of this section, individual script scenes will be defined, and in the second part, problems in the process of classifying actions into the scenes will be discussed.

Preparation scene. Contains events occurring in the resident's own room which prepare or get residents ready to go to the part of the setting where an activity occurs.

Initiation scene. Contains actions performed by residents for the purpose of moving from the place of preparation (resident's own room) to the physical part of the setting where the major goals of an activity are to be resolved.

Completion scene. Contains actions occurring in a specific area which are directly related (temporally, spatially, and conceptually) to the main goals of an activity. Major goals defined for the three activities are as follows: going to the dining room--eating, going to the whirlpool--bathing, and going to bed--falling asleep. These activity-goal couplings seem both logical and intuitive, but it will be shown in later discussion that defining what a main goal might be is not always a straightforward and simple process.

Transition scene. Contains actions performed by residents which serve to move the resident from the place of completion to some other part of the nursing home.

The action statements defined above may be viewed as summarizing the major subgoals within each scene. Also included in each of these categories are actions that are more peripheral to the major subgoals in the sense that they are subordinate to (i.e., either enable or result from) these summary actions. To recapitulate, a summary statement embodies the major themes of an activity, while a peripheral action plays a more or less supportive and dependent role in relation to the important script events. Some examples of summary and peripheral statements for each of the four script scenes are now given.

1. Preparation scene. Summary statement--The aide prepares the resident for the whirlpool bath. Peripheral statement--The aide helps the resident into the wheelchair.

2. Initiation scene. Summary statement--The resident walks (wheels, is helped) down the hallway to the dining room.

Peripheral statement--The resident waits in the lounge to be seated in the dining room.

3. Completion scene. Summary statement--The resident eats his/her meal. Peripheral statement--The resident visits with other residents while eating.

4. Transition scene. Summary statement--The resident goes back to his/her room or to some other activity. Peripheral statement--The resident dresses (is dressed) after the whirlpool bath.

Scripts for the whirlpool, dining room, and bedroom activities are presented in Tables 3 through 8. For each script, actions have been categorized into one of the four scenes defined. Also given for each action are mean importance ratings and the frequency of mention. The letters (P, S, and I) beside actions in each of the scenes will be defined and utilized in the section on script action frequency.

Problems in Defining Script Scenes

The preparation, initiation, completion, and transition scenes defined in this paper have been constructed to resemble the entering, ordering, eating, and existing scenes of the theoretical restaurant script presented in Table 9 (from Bower, Black & Turner, 1979). This comparison was made because scripts both in and outside of the nursing environment seem to follow similar physiotemporal sequences which might be expected given the communality of experience in going to activities in general. Additionally, such structuring of the script scenes in this study might enhance comparison of these scripts with those from the Bower et al. study. One difference

Table 3
Going to the Whirlpool Bath--Residents' Script^{a, b, c}

	Mean Importance	Frequency of Mention
<u>Preparation Scene</u>		
Residents get clothes and bath articles together (S)	1.83	low (5)
<u>Initiation Scene</u>		
Residents go (are helped) to the bath area (s)	2.67	high (11)
Residents wait their turn for bath (I)	2.20	low (3)
Residents undress (are helped) (I)	1.67	low (3)
<u>Completion Scene</u>		
Residents get into (are put) into the hydraulic chair (I)	1.38	low (5)
The hydraulic chair is raised up and over bath basin (I)	1.00	low (4)
Residents are placed into the bath basin (S)	1.50	high (11)
Aides pour and check temperatures of the water (I)	2.70	low (5)
Residents wash (are helped) their body and hair (S)	1.59	high (12)
Residents are rinsed off (I)	2.00	low (3)
Residents are taken out of the bath in the hydraulic chair (I)	1.40	medium (6)
Residents are dried off (I)	4.00	low (3)
<u>Transition Scene</u>		
Residents dress (are helped)	2.13	high (9)
Residents go back to their room or to some other activity	2.50	high (12)

Note: Only actions mentioned by at least 20% of people producing this script are included.

Note: Low frequency of mention = 20 to 35%; medium = 36 to 50%; high = above 50%.

^a Number in parentheses = number of people out of 15 total who mentioned that action.

^b Letters in parentheses stand for; personal (P); institutional (I); summary (S).

^c Pearson correlation between importance and frequency of mention (r) = $-.09$, p = $.19$, d.f. = 12.

Table 4
Going to Eat in the Dining Room--Residents' Script^{a, b, c}

	Mean Importance	Frequency of Mention
<u>Preparation Scene</u>		
No actions above 20% criterion.		
<u>Initiation Scene</u>		
Residents go (walk, wheel, are helped) to the dining room area (S)	1.72	high (21)
Residents look for a place to sit down (I)	3.10	low (5)
Residents go to a table and sit down (S)	1.77	high (14)
<u>Completion Scene</u>		
Residents visit with other residents while at the tables (P)	2.29	medium (9)
Residents wait at the table for food to be served (I)	3.50	high (15)
Aides serve the food (I)	1.91	medium (10)
Residents eat (also sugars coffee, butters bread) (S)	2.18	high (19)
<u>Transition scene</u>		
Residents go to their room or some other activity after eating	2.67	high (21)

Note: Only actions mentioned by at least 20% of people producing this script are included.

Note: Low frequency of mention = 20 to 35%; medium = 36 to 50%; and high = above 50%.

^aNumber in parentheses = number of people out of 25 who mentioned that action.

^bLetter in parentheses stand for Personal (P); Institutional; Summary (S)

^cPearson correlation between mean importance and frequency of mention (r) = .24; p = .45; df = 6)

Table 5
Going to Sleep at Night--Residents' Script^{a, b, c}

	Mean Importance	Frequency of Mention
<u>Preparation Scale</u>		
Residents come (are brought) to room before going to bed (P)	1.70	Low (5)
Residents visit with other residents before retiring (P)	2.00	Medium (7)
Residents do some activity (e.g., read, television, letters) before going to bed	2.20	Medium (11)
Residents take care of personal needs (e.g. washes, teeth) before going to bed	1.64	Medium (8)
Residents undress (are helped) (I)	1.50	Medium (11)
Residents put on pajamas (S)	2.04	Medium (13)
<u>Initiation Scene</u>		
Residents arrange (are helped) bed (i.e., pillows, covers) (I)	2.60	Low (6)
Residents get (are put) into their bed(S)	1.61	Medium (10)
<u>Completion Scene</u>		
Residents go to sleep (S)	2.16	High (20)
<u>Transition Scene</u>		
No actions above the 20% criterion		

Note: Only actions mentioned by at least 20% of people producing this script are included.

Note: Low frequency of mention = 20 to 35%; medium = 36 to 50%; high = above 50% frequency of mention.

^aNumber in parentheses = number of people out of 25 who mentioned that action.

^bLetters in parentheses stand for: personal (P); institutional (I); summary (S).

^cPearson correlations between mean importance and frequency of mention (r) = .07; p = .17; df = 7.

Table 6
Going to the Whirlpool Bath--Staff Script^{a, b, c}

	Mean Importance	Frequency of Mention
<u>Preparation Scene</u>		
Aide prepares the resident for the bath (S)	2.37	High (15)
Resident gets bath articles together (S)	2.04	Medium (11)
Aide helps resident into the wheelchair (I)	1.84	Low (6)
<u>Initiation Scene</u>		
The resident goes (is taken) to the whirlpool area (S)	2.26	High (19)
Residents wait for their turn outside the bath (I)	3.39	Medium (9)
Resident enters the bath area (I)	2.75	Low (6)
Aides help residents to undress (I)	1.68	Medium (11)
<u>Completion Scene</u>		
Aides put residents into the hydraulic chair (I)	1.83	Medium (12)
Aides strap residents into the hydraulic chair (I)	1.14	Low (7)
Aides raise the hydraulic chair up and over the bath (I)	2.06	Medium (8)
Residents are placed into the bath basin (S)	1.39	Medium (13)
Aides run and check temperature of water (I)	1.39	Low (7)
The residents wash themselves (are helped) (S)	1.33	High (22)
Aides pull residents out of the bath (I)	1.91	High (17)
The residents are dried off (I)	1.40	High (14)
Aides powder residents and clip their nails (I)	1.94	Medium (9)
<u>Transition Scene</u>		
Residents dress (are helped) after the bath is over	1.74	High (17)
Residents get into (are put back) into their wheelchairs	1.88	Medium (8)
Residents go (are taken) to their rooms or to some other activity	2.50	High (20)

Note: Only actions mentioned by approximately 20% of people producing this script are included.

Note: Low frequency of mention = 20 to 35%; medium = 36 to 50%; high = 50% above.

^aNumber in parentheses = number of people out of 24 total who mentioned that action.

^bLetters in parentheses stand for: personal (P); institutional (I); summary (S)

^cPearson correlation between mean importance and frequency of mention (r) = $-.06$; p = $.21$; df = 7.

Table 7
Going to Eat in the Dining Room--Staff^{a, b, c}

	Mean Importance	Frequency of Mention
<u>Preparation Scene</u>		
Aides help residents get up from bed (I)	1.29	High (14)
Aides help residents with personal needs (washing, hair) (S)	1.33	High (15)
Residents go to the bathroom before eating (P)	1.75	Medium (8)
Aides help residents to get dressed (S)	1.87	High (15)
Aides help residents into wheelchairs before going to dining area (I)	1.57	Low (7)
<u>Initiation Scene</u>		
Residents go (are taken) to dining area (e.g., television lounge, dining room, front entrance) (S)	1.50	High (21)
Residents visit with other residents or watch television (P)	1.75	Medium (8)
Residents wait outside dining area to be seated at table (I)	3.25	High (14)
Residents go (are brought) to table and are seated (I)	2.36	Medium (11)
<u>Completion Scene</u>		
Residents ask for and are brought liquids (I)	1.80	Medium (10)
Aides bring trays to the table (I)	1.67	High (15)
Residents eat (S)	1.53	High (17)
Aides help residents to eat (i.e., cut meat, butter bread) (I)	1.70	Medium (13)
<u>Transition Scene</u>		
Residents go back to their room or to some other activity	2.57	High (23)

Note: Only actions mentioned by at least 20% of people producing this script are included.

Note: Low frequency of mention = 20 to 35%; medium = 35 to 50%; high = above 50%.

^aNumber in parentheses = number of people out of 24 who mentioned that action.

^bLetters in parentheses stand for Personal (P); Institutional (I); Summary (S).

^cPearson correlation between mean importance and frequency of mention (r) = .13; p = 34; df = 12.

Table 8
Going to Sleep at Night--Staff Script^{a, b, c}

	Mean Importance	Frequency of Mention
<u>Preparation Scene</u>		
Residents go (are taken) to their room before going to sleep (P)	1.67	Low (3)
Residents engage in some activity (e.g., reading, writing, letters) (P)	1.04	Low (3)
Aides help residents with personal needs (e.g., washing, hair, powdering) (S)	1.76	High (15)
Residents go to the bathroom before going to bed (P)	1.71	Medium (10)
Aides help residents change into night clothes (S)	1.54	High (12)
<u>Initiation Scene</u>		
Residents fix bed (are helped) (e.g., pillows, covers) (I)	2.00	Medium (8)
Residents get (are helped) bed (S)	1.55	High (11)
Aides pull bed rails up/put on sleeping restraints (I)	2.06	Medium (9)
Aides give residents call lights (I)	1.00	Low (3)
<u>Completion Scene</u>		
Residents go to sleep (S)	1.64	High (14)
<u>Transition Scene</u>		
Aides check in residents during the night	1.33	Low (3)

Note: Only actions mentioned by approximately 20% of people producing this script are included.

Note: Low frequency of mention = 20 to 35%; medium = 36 to 50%; and high = above 50%.

^aNumber in parentheses = number of people out of 17 who mentioned that action.

^bLetters in parentheses stand for Personal (P); Institutional (I); Summary (S)

^cPearson correlation between mean importance and frequency of mention (r) = .54; p = .09; df = 9.

Table 9
Theoretical Restaurant Script

Name: Restaurant	Roles: Customer	Cashier
Props: Table Bill	Waiter	Owner
Menu Money	Cook	
Food Tip		

Entry conditions: Customer has money
Customer Hungry

Results: Owner has more money
Customer has less money
Customer is not hungry

Scene 1: Entering
Customer enters restaurant
Customer looks for table
Customer decides where to sit
Customer goes to table
Customer sits down

Scene 2: Ordering
Customer picks up menu
Customer looks at menu
Customer decides on food
Customer signals waitress
Waitress comes to table
Customer orders food
Waitress goes to cook
Waitress gives food order to cook
Cook prepares food

Scene 3: Eating
Cook gives food to waitress
Waitress brings food to customer
Customer eats food

Scene 4: Exiting
Waitress writes bill
Waitress goes over to customer
Waitress gives bill to customer
Customer gives tip to waitress
Customer goes to cashier
Customer gives money to cashier
Customer leaves restaurant

between those particular scenes and the ones defined in this study concerns the more generalized character of the scenes defined here. The concepts of preparation, initiation, and completion of an activity has been applied to all three resident and staff activities, while events involving ordering and eating are specific to the restaurant situation. This commonality in definition is, primarily, a function of having all the nursing home activities occurring within the same physical and temporal boundaries.

Some actions were more difficult to categorize into a particular scene than others. Particularly troublesome was the event of undressing in the residents' whirlpool script. By definition, the initiation scene is primarily concerned with the physical movement of residents to the place of completion. The categorization problem here involved defining the whirlpool completion scene as beginning with the placement of the resident in the hydraulic lift chair, instead of being brought into the bathroom. Although appearing somewhat arbitrary, the reason for doing this was based on consideration of both temporal and spatial characteristics of this scene. For instance, where a natural break in flow seemed to occur was between the event of undressing and placement of residents in the hydraulic lift; undressing, in this case then was considered part of the initiation of the main goal of the activity. Relatedly, a possible point of confusion involved another aspect of distinction between the initiation and transition scenes. The initiation scene was defined as always beginning in the resident's own room, while the transition scene was defined as always beginning in the place of completion. The problem here is that the transition from activity to activity sometimes

incorporated characteristics of initiation (i.e. transferring of residents from place to place). The important point to remember is that transition, as defined, occurs only after completion while initiation was defined to occur directly after the end of the preparation phase of an activity. There might be some situations in which initiation might not occur in the residents own room (i.e. going from the therapy room to the dining room to eat), but this was infrequent in comparison to the apparent temporal flow of most script activities.

There were other examples where categorization became difficult, and for this reason, definition of script scenes was necessarily arbitrary. In summary, the scene categories defined in this study were attempts at classifying behaviors observed in this particular nursing home. There was some additional concern, however, over the small number of actions in the preparation and transition scenes, especially for residents. Some of this absence might again be explained by the small sample size, and the accompanying number of script actions mentioned. However, another possibility is that all four activities were not completely comparable across all four scenes. Defining a transition scene for the bedroom activity, for example, presented the obvious problem of finding actions which occurred after residents went to sleep. Additionally, the completion scene of the bedroom script was, by definition, limited to a small number of actions (i.e., after residents got into bed).

In methodological terms, the bedroom activity probably does not fit well into the four-scene paradigm. The end result was to have a bedroom transition scene with so few actions that it could

not be used in any statistical analyses. In spite of this, a transition scene was included in the scripts, if not the analyses, since transferring residents from one place to another after completion of an activity is reasonable for most situations.

Now that the scripts have been defined, relationships between script variables can be examined.

Script Action Importance and Frequency of Mention

Overview

The relationship between the importance of individual script actions in relation to how often they are mentioned is crucial to explication of script theory. Bower et al. (1979) state that, "the most frequently mentioned actions also appear to be more centrally important to major goals and subgoals of activity scripts." Based on this, the expectation in this study was to also find evidence of a positive relationship between script action importance and frequency of mention.

Results

The relationship between script action frequency and importance is presented graphically for residents in Figure 1 and for staff members in Figure 2. It is reasonably clear that Figures 1 and 2 do not indicate a linear relationship between ratings of script action importance and frequency of mention. This graphical analysis is supported by an absence of significant correlation between the two variables for each activity within both subject groups (See Tables 3

**THIS BOOK
CONTAINS
NUMEROUS PAGES
WITH DIAGRAMS
THAT ARE CROOKED
COMPARED TO THE
REST OF THE
INFORMATION ON
THE PAGE.**

**THIS IS AS
RECEIVED FROM
CUSTOMER.**

FIGURE 1

COMPARISON OF MEAN IMPORTANCE RATINGS VS. FREQUENCY
OF MENTION FOR ALL THREE SCRIPT ACTIVITIES FOR RESIDENTS

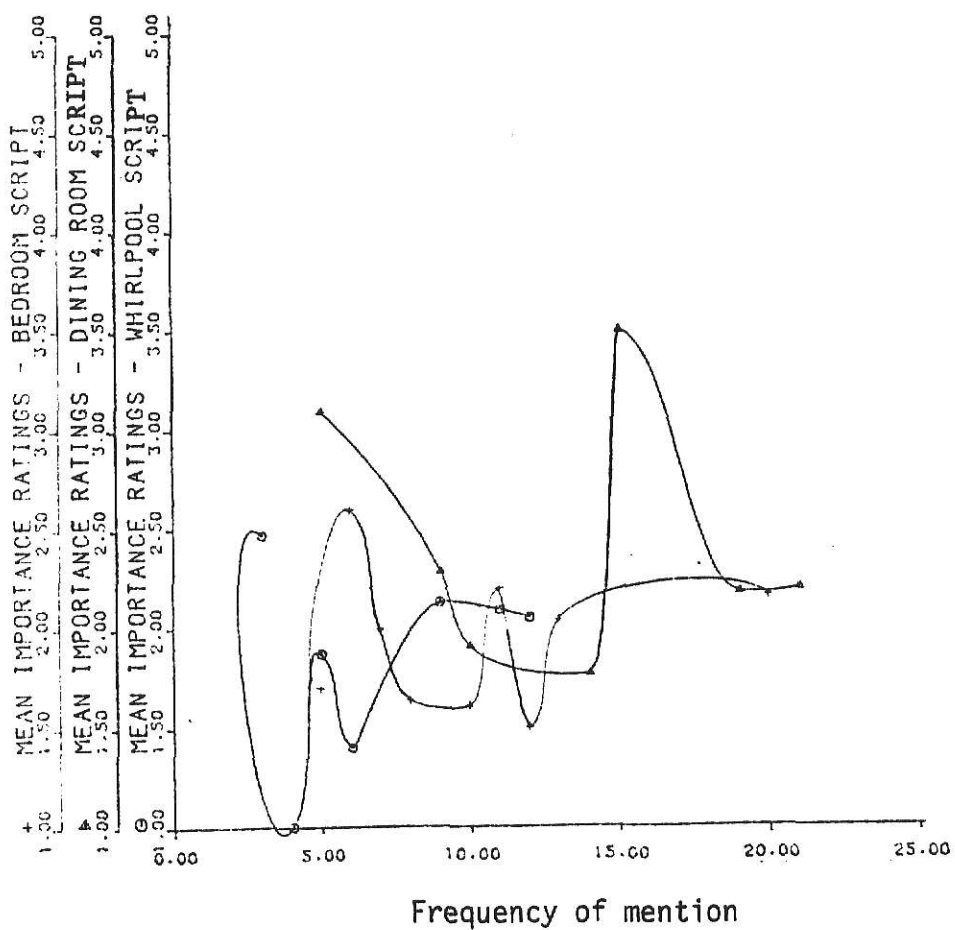
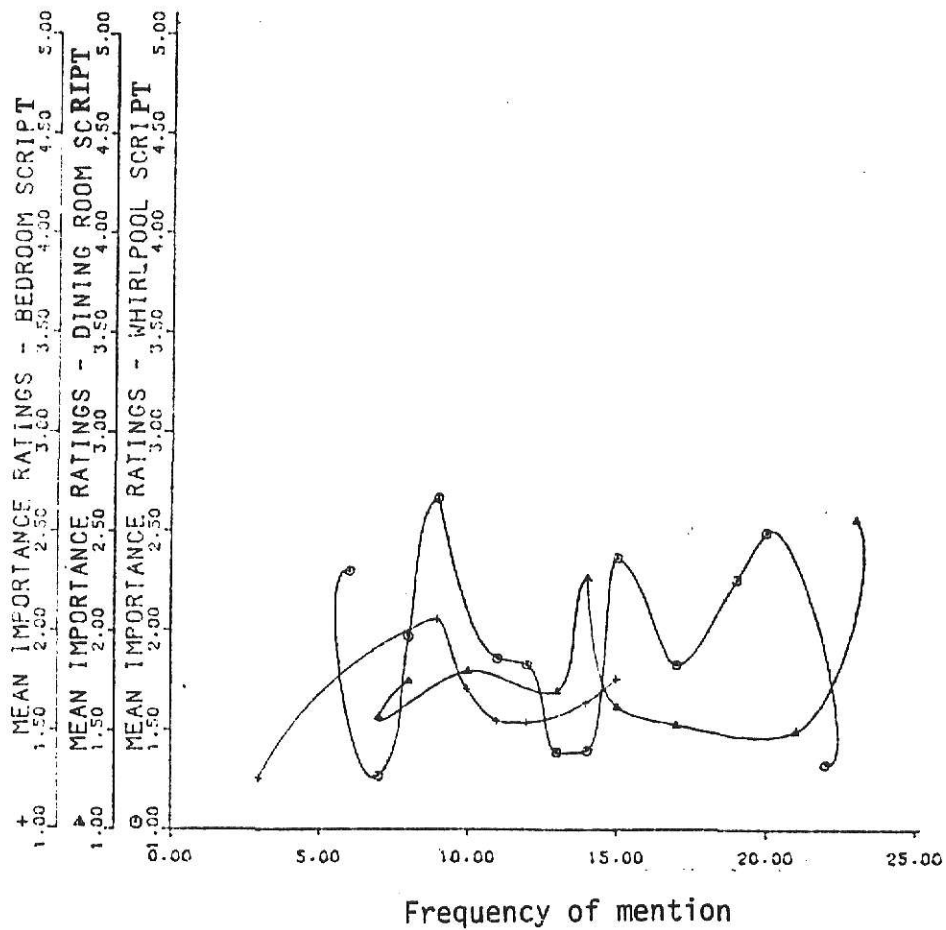


FIGURE 2

COMPARISON OF MEAN IMPORTANCE RATINGS VS. FREQUENCY
OF MENTION FOR ALL THREE SCRIPT ACTIVITIES FOR STAFF



through 8). To look at this relationship in a more general way, ratings for actions from all three activities were combined into one correlational analysis for both subject groups. For residents the results were: $r = .04$; $df = 29$; $p = .17$. For staff the results were: $r = .19$; $df = 42$; $p = .22$.

Discussion

Overview. The prediction of a positive linear relationship between script action frequency and importance was based on an assumption of a general applicability of script theory to a variety of situations. It should be noted that some actions that were mentioned frequently were also rated high in importance. The overall trend, however, was not only non-representative of the positive relationship expected, but correlations in three of six scripts (Tables 3 through 8) actually exhibited slightly negative values. Since a positive relationship was expected within the framework of formal script theory, finding otherwise might necessitate some qualification in its applicability to the nursing home environment.

The question now becomes one of finding factors existing in the nursing home environment which could be directing the relationship between script action importance and frequency of mention.

Three factors possibly influencing this relationship are: (1) personal, individualized experience, (2) institutional demands, and (3) the process of script summarization. After these factors have been examined, a discussion summary will be presented.

Personal individualized actions. In terms of script theory, actions at a low level of frequency of mention (i.e., 20 to 35%)

were considered less prototypical and representative of generic activities than higher frequency actions. They should, therefore, be rated less important than more frequently mentioned actions. Some more personal actions, such as residents visiting with other residents, or residents reading a book, become included in the scripts, but generally, the more individualized and personal the action, the less likely it will be mentioned with enough frequency to be included. Precise specification of actions included in scripts is not the overriding issue. More important, for the present discussion, is that actions with lower frequencies should also have lower levels of importance placed on them.

How personal actions could have both high importance and low frequency might be based on the following. Residents often have unique ways in which they spend their free time, or time between different structured activities. Such unique events might be very important to the personal needs of some residents, while other actions would be representative of different needs of other residents. Some of these actions might be common to enough residents to be included in the generic scripts, while still possessing comparatively low frequencies of mention.

Some actions which seem particularly representative of more personal individualized goals have been labeled (P) in the scripts in Tables 3 through 8. It should be noted and emphasized, that this category, and the two which follow, are considered hypothetical constructions to aid in interpretation. It would be more accurate to represent actions, and their underlying goals, by degree of both personal and situational quality, rather than either one alone. With

this in mind, something might still be gained from examining actions which appear to be especially characteristic of more personal, individual goals.

Institutional demands. Barker (1978) reports that a behavior setting imposes obligations upon occupants "to insure efficient operation and maintenance of the setting." In conjunction with this, Bell (1978) has defined one common characteristic of all confined settings to be a restricted freedom of action. Focusing on this factor, the nursing home environment places limitations on both the type and frequency of actions allowed within its boundaries. In other words, some behaviors of both residents and staff may be a result of institutional demands placed upon them. Additionally, goals underlying these behaviors may not coincide with the individual's own personal goals.

This sometimes obligatory nature of confined settings might affect the frequency-importance relationship in a number of ways. Barker (1978) states that to satisfy the goals of a given setting, occupants must meet together with enough frequency so as to maximize opportunities for goal resolution of that setting. Barker goes on to state that settings exert behavioral claims on individuals which force them to participate in the operation of that environment. As a result, some script actions which are mentioned frequently might not be important to the personal goals of some individual participants. An example of this type of action can be seen in Table 4 where residents wait at the dinner table for the meal to be served. Waiting is a frequent event in the nursing home setting,

but obviously may not be personally important to either residents or staff members alike. Actions which might be representative of this factor have been labeled with an (I) in Tables 3 through 8.

The connection between a setting and its occupants is a major concern of Behavior Setting theory (see Introduction, p.9). That one aspect of this interrelationship (i.e., the notion of optimal functioning mentioned above) might be operating within this nursing home surfaced when importance ratings for all actions were averaged across all three activities (Figure 3). This was done, originally, to see if residents and staff tended to differ in a general way, to the frequency-importance relationship. Frequencies of mention were chosen which were common to both residents and staff as an aid in comparison.

In simple terms, Figure 3 shows an apparent similarity in the "up and down" pattern of the graphs for residents and staff, except for the mean frequency of 15. A t-test comparing mean importance ratings for the two samples was not significant at the .05 level ($t=1.94$; $df=6$), indicating a 95% probability that the two samples, with respect to the importance frequency relationship, did come from a homogenous population. What makes this interesting is that explanation for it may, in part, fall within the frame work of optimal behavior setting functioning mentioned above. Briefly stated, the nursing home setting places demands on residents and staff in terms of where they have to be, and what they have to do at certain times during the day. Some events occur frequently, while some less so. Also, events may be of greater or lesser importance, depending on the type activity and specific situation involved. The point is that the graphs in

FIGURE 3

COMPARISON OF MEAN IMPORTANCE RATINGS VS. FREQUENCY
OF MENTION BETWEEN STAFF AND RESIDENTS USING
COMBINED RATINGS FROM THE THREE ACTIVITIES

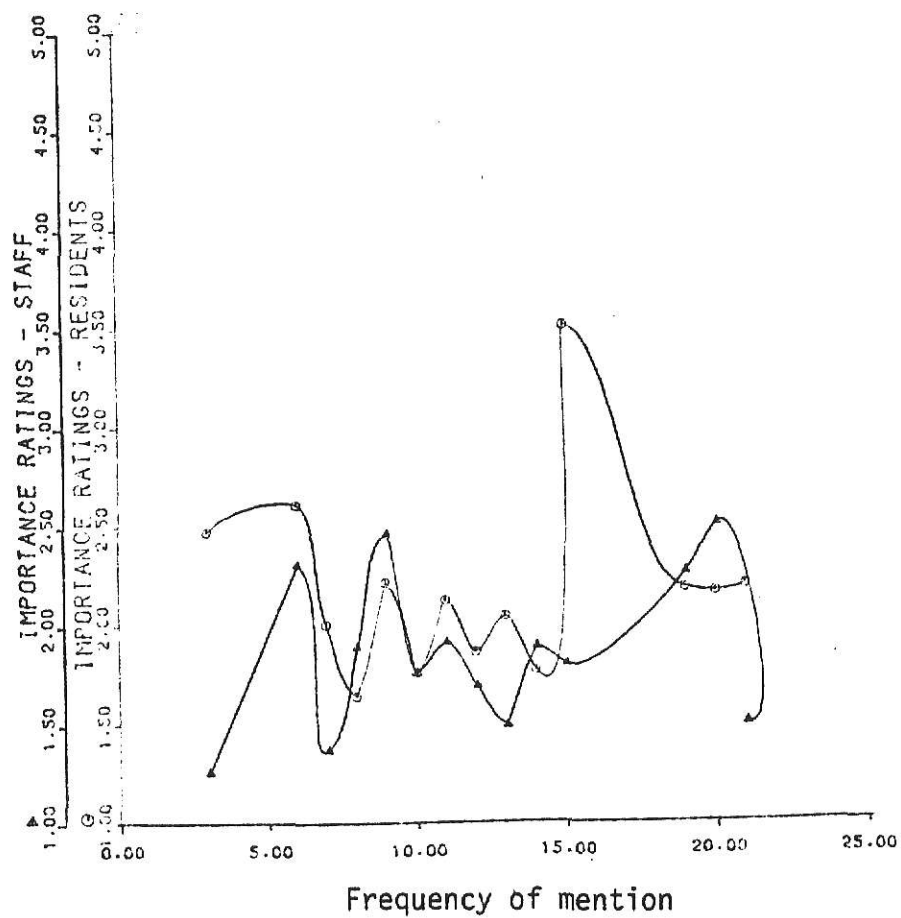


Figure 3 seem to indicate some commonality within the scripts of both residents and staff concerning how often certain actions need to be initiated, and how important these actions might be to the overall script. This relationship along with some of the potential ramifications will be discussed in the general discussion section.

Figures 1 and 2 do portray some actions as representative of a positive frequency-importance relationship (e.g., residents going to the dining room, Table 4). This might be explained, in part, by the script property of summarization.

Process of script summarization. To recapitulate a concept mentioned previously, a summary event is a "main conceptualization which functions in an essential way within a script scene." These actions are considered representative of superordinate script goals on which more peripheral subordinate goals are dependent. These main conceptualizations are also likely to appear in summaries people construct of their activities. For the present purpose, actions from the initiation scene of the staff dining room script will be presented as example. The actions involve residents watching television, and residents waiting to be seated in the dining room. Both of these events occur because a superordinate action has taken place, that is, having residents brought into the dining area.

According to Bower, this superordinate event should be rated more important since it is a major subgoal of the script scene. Actions that appear to fall into this summary category have been labeled, in Tables 3 through 8 with an S.

Mean importance and frequency values for the (P), (I), and (S) actions from each script were combined and grand means were calculated. Since the P, I, and S categories were necessarily somewhat arbitrary, these mean values should be viewed as indicative of potential trends and not absolute measures. With this limitation in mind, two predictions were made:

1. Both personal (P) and summary (S) actions would be rated more important than institutional (I) actions, and this would be especially true of residents. The reasons for this prediction were that first, personal actions would tend to be representative of peoples' own wishes and desires, and second, summary actions would manifest major script goals.

2. Institutional actions and summary actions would tend to be mentioned more frequently than personal actions because their actions would be more representative of common occurrences.

Means for the three categories are presented in Table 10. In general, mean trends for staff members followed the expected pattern. Summary and personal actions tended to be rated more important, while summary and institutional actions exhibited a higher frequency of mention. The trend for residents resembled the expected pattern, except for the low frequency mean for the institutional category. One reason for this could be that some scripts, like the one for the whirlpool activity (Tables 3, 6), are very detailed in nature, and due to differences in physical and mental condition, may be stored in memory in differing degrees of corresponding detail.

Comparisons using t-tests for the personal (P), Institutional (I), and Summary (S) categories within each sample group were not sign-

Table 10

Mean Frequencies of Mention (\bar{X} Freq.) and Mean Importance Ratings (\bar{X} Imp.) for Personal (P), Institutional (I), and Summary (S) Actions Labeled in Tables 3-8

	Personal (P)		Institutional (I)		Summary (S)	
	$\bar{X}_{\text{Freq.}}$	$\bar{X}_{\text{Imp.}}$	$\bar{X}_{\text{Freq.}}$	$\bar{X}_{\text{Imp.}}$	$\bar{X}_{\text{Freq.}}$	$\bar{X}_{\text{Imp.}}$
Residents	8.00	2.04	6.58	2.18	12.18	1.88
Staff	6.40	1.58	10.00	1.90	15.60	1.70

ificant at the .05 level. However, all comparisons between P,I, and S categories for staff for mean frequencies of mention were significant (.05 level), as was the Summary versus Institutional comparison for residents (see Table 10). To summarize, predictions of mean trends for the constructs of Personal, Institutional, and Summary actions were partially supported by the statistical comparisons, and could be representative of meaningful factors functioning within the nursing home population.

Scripts for nursing home activities contain both personal and institutional events. Within peoples' memories for the nursing home environment, these two types of events are probably not independent, but structural gradations of the same memory structures. It is very possible that nursing home scripts are not precisely the same as those normally defined (i.e., Bower, 1979), but are amalgamations of different types of experience. It should be noted that the type of activity used for script elicitation might have had some effect upon the nature of the script action importance-frequency relationship. For example, a less structured activity, such as going to the front lobby (p. 23), might have involved more personalized actions (more freedom) and therefore, a more positive relationship between script action frequency and importance.

Subjects in the Bower study showed significant agreement on where script boundaries (scenes) were located (see Introduction, p. 15). The next set of analyses represent an attempt to see if the scenes defined in this study differed significantly with respect to mean importance ratings.

Comparison of Script Scenes Using Importance Ratings

Introduction

Table 11 presents mean importance ratings for the three activities, along with the number of subjects contributing to each scene. These cell means were compared in the following three ways: (1) comparisons were made between the three scenes separately for each activity, (2) comparisons were made between the three activities for each scene, and (3) comparison of residents and staff on the basis of script scenes.

To compare differences between mean ratings of importance of script scenes, t-tests were employed.¹ Table 12 gives t-values for comparison 1 for residents and staff, and Table 13 gives t-values for comparison 1 and 2 for residents and staff. The first mean value after each variable is the one produced by the analysis. The second value after each variable is the actual variable mean from Table 11. The number of subjects used by each analysis is also listed, and values significant at the .05 level are starred. Results concerning staff will be discussed first, followed by those for residents.

The main issue is whether script scenes, taken as units, significantly influence the script variable of importance. A second issue involves the type of comparisons made. It is important to note that the values being compared are importance ratings averaged across all actions in a particular scene.

¹ Originally, for all comparisons involving importance ratings, F-tests were computed. Due to the extreme amounts of missing data in combination with the type of analysis used (repeated measures), the results were non-sensical and had to be discarded.

Table 11

Script Scene Importance Ratings for the Three
Script Activities^{a, b, c}

	Preparation Scene		Initiation Scene		Completion Scene	
	n	mean	n	mean	n	mean
<u>Residents</u>						
Whirlpool script	7	1.71	11	2.50	13	1.83
Dining Room script	4	2.00	17	1.98	20	2.29
Bedroom script	21	1.94	14	1.67	16	1.91
<u>Staff</u>						
Whirlpool script	19	2.08	21	2.21	15	1.66
Dining Room script	24	1.45	23	2.08	15	1.67
Bedroom script	24	1.66	24	1.80	13	1.83

^aMean importance ratings are computed using all information available (i.e., all actions mentioned by all respondents.

^bThe n for each mean is the total number of people who mentioned actions in that particular scene.

^cImportance ratings were made on a five point scale with 1 = very important and 5 = not very important.

Table 12

Comparison of Script Scenes Within an Activity Based on
Mean Importance Ratings (Residents and Staff)^{a, b, c}

Whirlpool Script--Residents

Preparation 1.71 (1.71) vs. initiation 2.14 (2.50)	7	-0.79
Preparation 1.71 (1.71) vs. completion 1.96 (1.83)	7	-0.39
Initiation 2.50 (2.50) vs. completion 1.83 (1.83)	11	0.20

Dining Room Script--Residents

Preparation vs. initiation (Mean direction reversed in analysis)	-	-
Preparation 2.00 (1.98) vs. completion 2.50 (2.29)	4	0.18
Initiation 1.98 (1.98) vs. completion 2.34 (2.29)	16	-1.26

Bedroom Script--Residents

Preparation 2.05 (1.94) vs. initiation 1.67 (1.67)	14	1.55
Preparation vs. completion (Mean direction reversed in analysis)	-	-
Initiation 1.59 (1.67) vs. completion 1.78 (1.91)	9	-0.81

Whirlpool Script--Staff

Preparation 2.08 (2.08) vs. initiation 2.25 (2.21)	19	-0.70
Preparation 2.08 (2.08) vs. completion 1.77 (1.66)	19	1.07
Initiation 2.21 (2.21) vs. completion 1.66 (1.66)	24	2.69*

Dining Room Script--Staff

Preparation 1.42 (1.45) vs. initiation 2.08 (2.08)	20	-3.64*
Preparation 1.45 (1.45) vs. completion 1.63 (1.67)	21	-2.09*
Initiation 2.08 (2.08) vs. completion 1.61 (1.67)	23	2.75*

Bedroom Script--Staff

Preparation 1.51 (1.66) vs. initiation 1.80 (1.80)	15	-1.26
Preparation 1.59 (1.66) vs. completion 1.81 (1.83)	12	-0.50
Initiation 1.76 (1.80) vs. completion 1.81 (1.83)	12	-0.10

^a n for each comparison is the number of people who mentioned actions from both scenes within an activity.

^b the number outside the parentheses is the mean value produced by a specific comparison

^c the number inside the parentheses is the mean value for a particular script scene

Table 13

Comparison of Script Activities on the Basis of Mean Importance Ratings for Each Script Scene (Residents and Staff)^{a,b,c,d}

<u>Preparation Scene--Residents</u>		
Whirlpool vs. dining room (mean directions reversed by analysis)	-	-
Whirlpool 1.50 (1.71) vs. bedroom 1.65 (1.94)	6	0.70
Dining Room vs. Bedroom (mean direction reversed by analysis)	-	-
<u>Initiation Scene--Residents</u>		
Whirlpool vs. Dining Room (mean direction reversed by analysis)	-	-
Whirlpool 2.50 (2.50) vs. bedroom 1.61 (1.67)	6	1.45
Dining Room 2.19 (1.98) vs. Bedroom 1.58 (1.67)	11	1.86
<u>Completion Scene--Residents</u>		
Whirlpool 1.95 (1.83) vs. Dining Room 2.55 (2.29)	11	-1.26
Whirlpool 1.95 (1.83) vs. bedroom 2.18 (1.91)	11	-0.60
Dining Room 2.33 (2.29) vs. bedroom 1.91 (1.91)	16	1.62

<u>Preparation Scene--Staff</u>		
Whirlpool 2.09 (2.08) vs. dining room 1.51 (1.45)	17	3.11*
Whirlpool 1.94 (2.08) vs. bedroom 1.63 (1.66)	12	0.87
Dining Room 1.26 (1.45) vs. bedroom 1.51 (1.66)	15	-1.24
<u>Initiation Scene--Staff</u>		
Whirlpool 2.22 (2.21) vs. dining room 2.08 (2.08)	23	0.68
Whirlpool 2.02 (2.21) vs. Bedroom 1.80 (1.80)	15	0.59
<u>Completion Scene--Staff</u>		
Whirlpool 1.66 (1.51) vs. Dining Room 1.67 (1.67)	24	-0.03
Whirlpool 1.40 (1.51) vs. Bedroom 1.83 (1.83)	13	-2.14*
Dining Room 1.30 (1.67) vs. Bedroom 1.83 (1.83)	13	-1.64

^a n for each comparison is the number of people who mentioned actions in a scene from both activities.

^b The number outside the parentheses is the mean value produced by a specific comparison.

^c The number inside the parentheses is the mean value for a particular script scene taken from Table 9.

^d* p = .05.

Comparison of the Three Scenes
Within Each Activity--Staff

Results. The results for staff show that for the whirlpool and dining room activities, the completion scene was rated significantly more important than the initiation scene. The dining room preparation scene was also rated significantly more important than either the initiation or completion scenes. It is important to remember that the ensuing discussions are based primarily on trends, and not significant differences. Although making conclusions very tentative, discussion of trends is considered important due to the general absence of cognitive data for this population.

Discussion. The focal point of this section will concern possible reasons why staff tended to rate both the completion and preparation scenes more important than the initiation scenes in each comparison except for the one involving bedroom initiation versus completion. Central to discussion will be the possible influence of the related factors of work roles of staff members, and the institutional demands placed on them. In discussing environments where older people live, Stea (1970) has emphasized the importance of locational (situational) goals in the home range, which are realizable within the scope of individual plans. From extensive observation, this researcher has noted that the role of staff members within the nursing home environment may largely be characterized as serving the needs of residents within the guidelines of their facility.

That this role behavior might be a factor influencing script importance is emphasized in a statement by Gelwicks (1970), saying in effect that people relate to their environment only to the degree in which it contains information relevant to them. The initiation scene was defined earlier as generally incorporating actions which moved from one place to another. Scanning the actions in staff scripts in Tables 6 through 8, the initiation scenes do not provide nearly the service opportunities for staff members as does either the preparation or completion scenes. Specifically, the action schemes involved with moving residents into and down hallways, or from wheelchair to bed, are not as detailed as those contained in the other scenes.

This has been indirectly supported by Ernst (1972), who conducted a thorough examination of the behavioral and attitudinal relationships of staff and residents. He found the major trend characterizing the roles of staff members to be an attitude of humanistic service in conjunction with a desire to manipulate the behavioral patterns of residents. Staff members do, therefore, seem to find relevance in situations they are active in.

In summary, the speculative sequence of this discussion can be presented in the following manner: (1) staff roles are based, at least in part, on services provided to residents, (2) script scenes which provide more opportunity to serve will become more relevant and (3) increased relevance will be translated into higher ratings of importance.

Comparison of the Three Activities for a Separate Script Scene--Staff

Results. Two significant mean differences can be seen in Table 13. The dining room preparation scene was rated as more important than the whirlpool preparation scene, and the whirlpool completion scene was rated more important than the bedroom completion scene.

Discussion.

With only two significant mean differences found, type of activity does not seem to be a general influence upon rated levels of script scene importance. The two significant differences are, nevertheless, interesting because they could help explain the effect staff roles have on ratings of importance.

It was observed in this study that nursing home residents were often very particular about their personal appearance (i.e., clothes, hair). Relatedly, in a previous study examining public versus private space in the nursing home environment (see Brenner & Rohles, 1978), dining room activities were defined to be highly public in character. As is probably true in the wider American culture, more preparation is often needed in going to a public area, like a restaurant, than to a more personal area of one's environment. Comparing the whirlpool and dining room preparation scenes in Tables 7 and 8, not only is the dining room preparation scene two actions longer, but it contains specific references to actions concerned with dressing and fixing of hair. In contrast, the whirlpool

preparation scene does not contain these direct references to personal appearance which might be explained by the more individualized nature of this script scene.

From the perspective of staff members, the dining room preparation scene presents comparatively more service opportunities which has the effect of increasing perceived relevance for that scene. This interpretation can also be applied to the result that the whirlpool completion scene was rated more important than that of the bedroom script. It can be seen from Tables 6 and 7 that the staff were very active during whirlpool completion, but understandably less so during the bedroom completion scene with the expected lowering of importance.

Comparison of the Three Scene Means for
Each Activity; and Comparison of the
Three Activities for Each Scene--
Residents

Overview. For residents, the two sets of mean analyses will be considered together because of the lack of significant comparisons.

Results. Looking at Tables 12 and 13, no significant differences were found between mean importance ratings comparing scenes within a given activity, or comparing activities across a single scene.

Discussion. The absence of significant results may be due, in part, to the comparatively small number of participating residents. However, since the parameters used in these analyses have, as far as known, never been defined for the nursing home population as a whole, it is not clear whether the low N's can be attributed to character-

istics of this sample alone. Accepting this limitation, a number of the mean differences might have been great enough to reach significance if N's had been comparable to those of staff.

Given the results, one obvious interpretation is that residents might have not used the variable of importance to differentiate script activity scenes. There are at least two reasons why this could have occurred in this study.

First, residents might not have been as discriminating with respect to the five-point importance scale as were staff members. There is evidence to suggest age decrements in perceptual functioning (Comalli, 1965), ignoring irrelevant information (Rabbitt, 1965), and set reaction time (Botwinick, 1957). Methodologically, there was some attempt to control for this by asking every subject (resident or staff member) if they understood each phase of the interview. Whether these or other factors significantly influenced discrimination is not known.

Second, there is some evidence that, with age, people tend to become more preoccupied with internal rather than external needs, which is reflected in some degree of disengagement from the environment (see Welford, 1980). A decrease in discrimination could then be expected in some cases. The feeling here is that disengagement did not have a large influence on ratings of importance, a view which will be supported by extrapolations presented in the general discussion section.

So far, discussion has centered on interpreting the absence of significance in the analyses of residents. Leaving the issue of

significance aside, mean patterns in two of the residents' scripts are potentially meaningful in relation to trends already discussed for staff members. Looking at the means in Table 11, the dining room and bedroom initiation scenes have been rated slightly higher than the accompanying preparation and completion scenes. This tendency is interesting in comparison to the staff trend of rating the initiation scene consistently lower in importance. It will be advantageous to discuss this apparent divergence within the scope of the next set of analyses.

Comparison of Script Scene Between Staff and Residents

Overview. The main issue to be examined with these analyses is whether sample type might have an effect on the script variable of importance.

Results. Means, t-values, and n of analyses for comparison of groups are presented in Table 14. One significant difference was found indicating staff rated the dining room completion scene more important than did residents.

Discussion. For purposes of discussion, the one significant value will be discussed within the framework of possible trend differences found within the results.

A summary of mean patterns are as follows: In comparing residents and staff, three potential trends emerge. They are:

1. Staff members consistently rated the completion scene more important than residents.

Table 14

Comparison of Mean Importance Ratings Between Residents
and Staff for Each Scene Within an Activity^{a, b, c}

	Residents		t-value	Staff	
	n	mean		n	mean
<u>Whirlpool Script</u>					
Preparation Scene	7	1.71	-0.91	19	2.08
Initiation Scene	11	2.50	-0.68	24	2.21
Completion Scene	13	1.83	0.52	24	1.66
<u>Dining Room Script</u>					
Preparation Scene	4	2.00	0.77	21	1.45
Initiation Scene	17	1.98	-0.32	23	2.08
Completion Scene	20	2.29	2.28*	24	1.67
<u>Bedroom Script</u>					
Preparation Scene	21	1.94	1.59	15	1.51
Initiation Scene	14	1.67	-0.47	15	1.80
Completion Scene	16	1.91	0.19	13	1.83

^aThe n for each analysis is the total number of people from each group who mentioned an action for a particular scene.

^bImportance ratings were made on a five point scale with 1 = very important and 5 = not very important.

^c* $p \leq .05$

2. Except for the whirlpool script, staff rated the preparation scene more important than residents.

3. With the exception of the whirlpool script, staff rated the initiation scenes less important than residents.

While observing and communicating with nursing home residents, this researcher noted a number of examples in which people expressed concern over their capacity to move safely and effectively through their immediate environment. In relation to this, Miller and Schaie (1980) have reported that visuo-motor flexibility was the only aspect of intelligence to show a general decline with age. Nahemow and Lawton (1976) have conceptualized the competence elderly carry with them in response to the demands of their environment especially in terms of sensory-perceptual capacity and motor skills. Welford (1980) has summarized relevant research on attention changes with age by stating that older people show a greater tendency to monitor their own movements to the exclusion of new signals around them. There is substantial evidence, therefore, to support the observation that residents may selectively direct attention toward their physical mobility. Since the initiation scene is defined primarily in terms of locomotion, it would not be surprising to find residents often placing a large degree of relevance on such experience.

This is made more understandable by placing the physical boundaries of resident movement within the larger framework of environmental paths defined by Lynch (see Introduction, p. 1). If this is done, moving into and down hallways, or transferring from wheelchair to bed becomes a parallel to locomotions in the wider

culture. As an analog anxiety and concern for safety while driving along major thoroughfares are also common experiences in the wider American culture. Cutler (1972), researching the notion that absence of appropriate transportation constricts the life space of any individual, found that older people who had personal transportation available had higher life satisfaction scores than people who did not.

In a very real sense, the hallways for nursing home residents may be viewed as "streets" connecting their personal territory to the larger home range. Stea (1970) has actually defined the home range in terms of patterns of locomotion where elderly often have difficult sensory adjustments to make.

In summary, the initiation scene for some scripts could be more important to residents than staff because it is simply more relevant for them. The question now must center on interpreting the low importance placed by residents on the whirlpool initiation scene. This discussion will be an exception to the conclusion reached earlier that type of activity had only a modest effect on scene importance.

Going to the whirlpool was somewhat unique among the three script activities with respect to comments made by a number of residents. First, the event of being put in the hydraulic lift and raised into the air, occurring in the completion scene, was perceived as both dangerous and exciting to some residents. Second, according to the nursing home head administrator, most of the residents using the whirlpool were not able to bathe themselves effectively. Both

of these factors would be expected to increase the relevance of these events for residents, thereby raising the level of importance for that particular scene. The initiation scene could have therefore become correspondingly less important to residents, by comparison.

How this could happen is based on proposed limitations in the information processing capacity of people in general (see Lachman, Lachman, & Butterfield, 1979). If nursing home elderly are indeed limited in the amount of attention they can allocate to any one portion of their immediate experience, there may also be upper ranges in the amount of relevance that they can be associated with any one situation. This might especially apply to whirlpool participants who were, on the average, less physically competent than other residents.

Script Scene Importance and Demographic Variables

Overview of Results

Correlations between variables for residents are given in Table 15. Since length of stay (i.e., employment) was the only staff variable examined in relation to script variables, it will be discussed in combination with the length-of-stay variable for residents. Results and discussion will be presented separately for each variable. It is important to emphasize that the adaptation scale (5 = very adapted) and the importance rating scale (5 = not very important) were anchored in opposite directions. This means that negative correlations between importance and adaption are reflective of positive relationships.

Table 15

Pearson Correlations Between Script Scene Mean Importance Ratings and Demographic Variables^a, b, c, d, e

	Whirlpool Script		Dining Room Script		Bedroom Script	
	P	I	P	I	P	I
<u>Adaptation^b</u>	.04(7)	.23(11)	.79(4)	-.41*(17)	-.05(21)	-.05(14)
<u>Ambulation^c</u>	.64(7)	.46(11)	.65(4)	-.26(17)	-.04(21)	.23(14)
<u>Age</u>	-.18(7)	-.67*(11)	-.62(4)	.13(17)	-.18(21)	-.42(14)
<u>Length of Stay</u>						
<u>Residents</u>	.44(7)	-.41(11)	.83(4)	.53*(17)	-.05(21)	.11(14)
<u>Staff</u>	-.01(19)	-.09(24)	.49*(21)	.36*(23)	.75*(15)	.58*(15)

^aNumber in parentheses is the n of that analysis.

^bAdaptation scale: 5 - not very well adapted to 1 - very well adapted.

^cAmbulation scale; 5 - walking without help to 1 - bedridden.

^d*p < .05.

^eP, I, and C represent the preparation, initiation, and completion scenes, respectively.

Results and Discussion

Pearson product-moment correlations were computed on all bivariate relationships in question. The findings and discussion are presented below.

Adaptation--Results. The significant negative correlation (positive relationship) found between adaptation and the importance of the dining room initiation scene.

Adaptation-Discussion. The significant positive relationship with the dining room initiation scene fits nicely with conceptualizing that scene as particularly relevant to residents. Commenting on the study of aging in relation to theories of the environment, Kahana (1975) has stated that if personal needs or preferences are congruent with environmental characteristics, then positive outcomes ensue. Further, two factors which influence this "fit" between the person and their environment are motor control and stimulation. These characteristics have previously been associated in this study with the dining room and bedroom initiation scenes, and support the emphasis placed on movement and mobility as influences for script relevance placed on script actions.

Ambulation-Results. No correlations were found significant at the .05 level.

Ambulation-Discussion. In addition to not significantly correlating with script scene importance, ambulation also did not correlate with adaptation ($r = .16$; $p = .24$; $n = 24$). What this

seems to mean is that residents can make a very adaptive response to their environment regardless of the type mobility.

This is not contradictory to the relationship between adaptation and the initiation scene of the residents scripts. It does not seem to matter whether residents are walking or wheeling, so much as it is important for them to see progress in their efforts from one time to another. For example, one female resident was very excited about the long walks she was taking (with help). These walks consisted of her going from the bed to her bathroom and back. Compared to some other residents, this might have represented a lack of mobility, but to this resident, it was progress contributing to her ongoing adaptation to the nursing home environment. This is in line with the model proposed by Lawton (1975) which posits a tendency for every individual experiencing environmental demands (press) to establish an adaptation level based on their competence at a given time.

Age-Results. A significant negative correlation (positive relationship) was found between age and initiation scene importance of the whirlpool script, and the completion scene of the whirlpool script. In addition, there was a near significant negative correlation ($p=.066$) between age and bedroom initiation scene.

Age-Discussion. These results seem to indicate that, where a relationship might be indicated, older residents tended to place more importance on their script activities. Marshall (1975) has found that

older individuals tend to estimate less time available before death than people who are younger. This squares with the observation of this researcher that a number of older residents were very possessive of their time, as well as appreciative of efforts to aid them in their activities.

In summary, older residents may feel more urgency to find relevance and meaning in their day-to-day activities which would be translated into higher importance ratings for script actions. Interestingly, age was not significantly correlated with either adaptation or ambulation.

Stay- Results. For the residents, significant negative relationships were found between length of stay and importance of the dining room initiation and completion scenes. For the staff, significant negative relationships were found between length of stay and importance for the preparation and initiation scenes of both the dining room and bedroom activities.

Stay-Discussion. Gelwinks (1970) has stated that, "Time is one inclusive factor which affects home range, use of space, and the entire spatial behavioral relationship, but has been grossly neglected in research." More experienced residents seemed to rate the dining room script initiation and completion scenes as significantly less important than new residents, while more experienced staff members showed a more general decline in ratings given to script scenes.

For residents, decreased importance of the dining room script scenes might be based on a similar factor involving a decrease in discrimination, and a factor based on the nature of the activity in

question. For instance, one might expect to find the daily act of eating to become less important over time as people learn the nursing home routines. On the other hand, a more specialized, less frequently occurring activity like going to the whirlpool bath might be more resistant to such decreases if not conducive to an increase in importance the longer residents stay in their facility.

According to Barker (1978), if occupants are called on to fill many roles within a behavior setting, three results are possible:

1. They will become less sensitive and evaluative of individual differences.
2. They will come to ignore previously noted differences.
3. There will be an increased tolerance for newly noted differences.

With their busy schedules and varied work experiences, staff members seem to be particularly susceptible to such influences. Over time, they would be expected to become more mechanical and efficient in some of their work routines. According to DeLong (1970), staff members actually relate to residents in personal as well as professional ways, but sometimes find this combination so difficult that involvement with residents is further minimized in order to compensate. The claim being made here is that these factors might tend to decrease discrimination for differences in script action relevance, which is then reflected in lowered importance ratings.

GENERAL DISCUSSION

Overview

This section will be organized into three parts. The first involves the theoretical issue of whether the scripts produced by residents and staff in this study are, by definition, comparable to those constructed by subjects in the Bower et al. (1979) study. In the second subsection, methodological problems encountered while studying the nursing home population will be discussed, with implications for future research. A final section will summarize the major conclusions of this study.

Nursing Home Scripts

Introduction. Three factors (P, S, and I) were presented earlier as possibly influencing the relationship between script action frequency and importance. This discussion will expand on the reasons for positing these influences which could bear upon the general applicability of script theory to all situations.

In reviewing how cognitive theory can be applied to the environment, Howell (1975) stated that a problem exists in the conceptualization of schemas as "purely cognitive dispositions in the absence of behavioral and environmental correlates." This notion, similar to the need proposed by Mischel (1979) for defining situations, calls for the empirical grounding of explanatory frameworks, like script theory, in external behavioral settings. Briefly stated, studying what happens on the inside of people (i.e. cognition) must be responsive to what happens on the outside of

people (i.e. behavior in settings). There is, therefore, a great need to bridge the gap between cognitive and environmental research. As stated in the introduction, scripts applied to the nursing home environment are one attempt to help solve this problem.

Nursing home scripts and script theory. Among the various types of scripts are those labeled situational and those defined as personal. According to Shank and Abelson (1977), two characteristics of situational scripts are that actors or players share an understanding of what is supposed to happen. Personal, individualistic events are explained in terms of personal scripts, which interact with, but are not a part of the situational script proper. The scripts in the Bower et al. study (1979) appear to be largely situational in nature.

Defined in this way, situational scripts can be conceived as abstract memory structures for interpersonal events occurring at a given place. Similarly, behavior settings are said to consist of a variety of interlocking roles (i.e. roles, spaces) which are mutually dependent on each other. Behavior settings were discussed fully in the introduction, but for the present discussion, it is important to note that, by definition, situational scripts appear to be memory representations of behavior settings.

The nursing home environment is also a behavior setting where staff and residents have interlocking roles within a surrounding milieu. But, this is not all that they are. Nursing homes are also places where people live, in contrast to offices, classrooms, and restaurants. The nursing home may, therefore, be

considered both a shared space and a personal space that are related in both a physical way (on the outside), and cognitive way (on the inside) (see Brenner & Rohles, 1978). An extremely important concept bearing on this relationship is that of territoriality.

Louis Gelwicks (1970) defined home range as a series of behavior settings linked together, and oriented toward a locus of activity. Within this home range lies an individual's territory which, when encroached, is defended as one's own possession. Additionally, the home range is conceived as being less individualistic than territory. After years of studying territorial behavior in nursing homes, Sommer (1970) made the following observations:

1. Territories are areas controlled by individuals or groups of individuals whose actions reflect control, or potential control over that area.

2. Areas marked out by residents as territories are understood as such by staff members to the extent that they do not encroach on these areas except when necessary.

From an environmental perspective, territory is seen as part of the home range. Actually, precise specification of how shared settings and personal territories are connected has not, to the knowledge of this researcher, been completely accomplished. Nevertheless, there appear to be gradations of personal and shared space linked together in a functionally meaningful way. (Again see Brenner & Rohles, 1978). According to Sommer, for example, nursing home residents mark certain chairs in the public lobby (a shared setting), as personal territory, and perceive them to be their own possession while using them.

The major point to be emphasized is that if nursing home residents conceptualize their environment in terms of both personal and shared relationships, memories of their environment should reflect this experience. Nursing home scripts of residents, and to some extent staff members, should therefore not be defined in terms of commonly shared activities alone, but as amalgamations perhaps of various types of experience. A tentative conclusion, then, is that the nursing home scripts in this study are not structurally the same as those from the Bower et al. study (1979), in which personal, unshared events are viewed as intrusions into the main body of the scripts. Nursing home scripts are, in terms of the results of this study, defined as both personal and interpersonal in basic structure.

The above discussion was primarily based upon the finding in this study of a non-linear relationship between script action frequency and importance. In that discussion based on Figure 3 (p.55), a high degree of similarity was indicated between residents and staff (combined graphs) with respect to the nature of the frequency-importance relationship.

Before discussing this finding of pattern similarity, the divergence at the mean frequency of 15 needs to be examined. Looking at scripts in Tables 3 through 8, it can be seen that this large difference of mean is, in large measure, attributable to the event of the aides serving food to the residents. It is part of the inherent nature of this event to have staff members very active in a service orientation, while residents, already waiting to eat, must continue to wait until after the meal has been served. With this

functional difference in activity between the two groups, it is not surprising to find such a discrepancy in ratings of importance, especially considering the already discussed role of perceived relevance in the rating of script importance. In summary, this specific event seems to be particularly representative of institutionally oriented actions occurring at relatively high frequencies for all concerned, which may become important to one group, staff members, but not to another, residents.

Returning to the issue of pattern similarity, if residents and staff must indeed, meet together with enough frequency to promote efficient operation of their setting, then the similarity found in the graphs of staff and residents in Figure 3 (p. 55) becomes more understandable. For example, one obvious fact of nursing home life is that residents and staff must come together at various times and places to accomplish certain goals of their facility. It is also reasonable to assume, in terms of the concept of relevance, that both groups would find some of their mutually occurring events comparable in importance. More interesting is the possibility that this frequency-importance pattern might be stored in memory and, for these nursing home participants, might become a structural part of their scripts. This would be in line with the theoretical mating of external setting and internal cognition discussed at the beginning of this section. This also indicates that a straight line relationship between script action frequency and importance may not be as meaningful in describing how scripts work as the specific pattern nature of the relationship in some situations.

In summary, the finding of a similarity of pattern between residents and staff with respect to the frequency and importance relationship could be reflective of the interdependence of setting components which, when stored in memory, could become functional in the workings of peoples' scripts.

As was mentioned previously, the study of this nursing home proved, at times, extremely difficult. Some problems encountered are now described.

Methodological Issues

Introduction. Eliciting scripts from residents and staff members can be accomplished provided adequate time and care are taken. Some difficulties were encountered, however, and are summarized below for each group.

Residents.

1. Establishing rapport: The development of trust between researcher and resident was often time consuming, and was harder to achieve than anticipated. It was not unusual to spend a half an hour talking with an individual before eliciting the scripts. Some reasons for this were:
 - a. An unclear presentation of the purpose of the study to the resident. The best approach turned out to be simply stating the purpose in terms of finding out what residents normally do, and how important their actions are to them.

- b. The organic (physical) condition of some residents made any presentation of purpose confusing and difficult to understand.
2. Loss of rapport. In certain cases, the rapport that had been established was, to some degree, lost between the first and second sessions. Reasons for this included lack of continuity in communication from the researcher, and the physical condition of some residents which sometimes changed day to day. According to the head administrator, residents in a full care facility (and with a mean age of 84) would be expected to exhibit such rapid decrements in certain cases.

To conclude, the two most needed qualities either to bring into or develop in the study of the nursing home population are patience and compassion. If approached too abruptly, most residents will perceive the research experience as an encroachment on their personal space.

Staff members. Three difficulties encountered with staff members included interview time, differing work shifts, and unclear instructions.

1. Interview time: As stated in the methods section, a time limit of about 20 minutes was set by the head administrator on sessions with staff. This understandable limitation had the consequence of not allowing for collection of summary statements, although it was already decided not to collect such statements from residents.

2. Work shifts: Some staff members worked predominantly one shift (either day or night), which made some activities more or less familiar, depending on the situation. Since there was some shifting of schedules, it is difficult to be specific on what effect this had on script construction and ratings of importance, or with respect to the importance they perceived residents to have. The procedures developed for this study were constructed to elicit a resident oriented script from staff, but, asking staff members to give perspectives of residents may have been awkward for two reasons. First, the most natural task for staff members would have been to give their own scripts in terms of their own importance. Second, the interdependent roles of staff and residents precluded complete separation of script roles in the first place. So the procedure would have been difficult in either case. As it turns out, many staff scripts were structured in terms of services provided, anyway, while residents more often centered actions around themselves. Actually, two staff members who mentioned this problem were asked to rate their scripts by both criteria, the end result being almost identical ratings for the various actions.

Scale Reliability and Validity

Introduction. The three scales used in this study, importance, adaptation, and ambulation present differing levels of difficulty when considering the issue of reliability and validity.

Reliability. Reliability, or the tendency toward consistency in repeated measurements (Carmines & Zeller, 1979), was not assessed for any of the scales used in this study. A lack of time precluded further interviews with staff and residents so garnering of repeated scale measures could not be accomplished.

Without objective measures, it is still possible to say something about the relative merits of the individual scales. The ambulation scale, involving objective and measurable anchors, clearly represented the best hope for possessing a high degree of reliability, since less potential ambiguity in scale discrimination would be present. Both the adaptation and importance scales were anchored in a more abstract and less objective manner, and presented potentially serious difficulties in terms of how consistent the scales' values would be when repeated since scale anchors were potentially more ambiguous to subjects. Reliability, as discussed above, is eventually an empirical issue. Validity, on the other hand, is primarily concerned with the theoretical issue of whether something measures what it is intended to (Carmines and Zeller, 1979).

Validity. It was mentioned earlier (p. 31) that the meaning of importance was discussed with both residents and staff. However, it was quite possible that subjects created and used their own definitions of importance, which was not the same as the one discussed. The same criticism could be made for the adaptation scale as well. Again, as with reliability, the ambulation scale presented a much greater chance for possessing a high degree of validity.

Conclusion. If it is true that the importance and adaptation scales might not be reliable or valid, then interpretations based on statistical comparisons using values from these scales are potentially invalid as well.

Research Implications

Following are a number of suggestions which can be made concerning the study of the nursing home environment.

1. To provide for a larger sample, facilities with a bed capacity of more than 100 beds should be studied. In both the pilot study and the main experiment, about 75% of residents contacted were not able to participate in some aspect of the interviews. A larger subject pool, or use of more than one facility, might help eliminate some of the missing data problems which plagued this study at various times.

2. It would prove beneficial to choose the activities used for eliciting scripts carefully, keeping the desired framework for script organization in mind. In this study, for example, the therapy room, and to some extent, the bedroom activities were not entirely workable within the desired statistical and explanatory framework.

3. Part of the explanatory framework of this paper has been defining a distinction between personal and situational goals and events. This notion is now discussed because it could be important for later research.

As previously mentioned, this dichotomy most likely involves a continuum with events such as reading on the most personal end; visiting with other residents, more situational, but still personal; and going to a structural activity (i.e. dining room) as situational to a large degree. One problem with this description is that resolution of situational goals (i.e. eating) often may coincide with goals that are normally personal (i.e. not shared to a large

degree with people in a behavior setting). The important point to remember is that the concepts of personal and situational are defined, in script theory terms, as memory structures, which are hypothetical constructs in themselves.

Before presenting a summary of conclusions, one other aspect of this personal versus situational problem needs clarification. As defined in this study, institutional demands are being placed within the larger context of situational goals and events. This means that some situational goals may not be directly related to the efficient operation of the facility (institutional), but would still be shared by many of the actors within the setting. One example of this might involve residents being helped by staff to walk up and down the hallway (see hallways, p. 27). This event may not occur at any particular time, and its absence would probably not affect setting operation. However, the goals between participants are still shared in common, and resolution of such goals occur with frequency.

Further delineation of how personal and situational goals interact will probably be an important concern for future research.

Summary of Major Conclusions

1. Scripts can be elicited from nursing home residents and staff, provided there is a maintaining of rapport and proper scheduling of interviews. As discussed previously, problems in communication and access were encountered which need to be addressed when studying this population. As the theoretical construct of scripts has never been applied to the nursing home population until now, the application

which has been completed in this study would seem to be a major contribution to bridging the aforementioned gap between peoples' cognition within a specific environment.

2. A linear relationship was not found between script action frequency and importance in this study. On the other hand, some support was found for the contention that certain script action frequency-importance patterns function as components of nursing home scripts. The difference found between the scripts in this study and those from the Bower et al. study are important because they may help explain how nursing home participants cognitively structure their environment. In doing so, these findings accrue meaning within the framework of the increasing importance of Information Processing theory to the field of environmental psychology. (See page 1 of Introduction.)
3. Nursing home scripts appear to have both personal and situational components, in contrast to previously cited research (Bower et al., 1979), where personal events are viewed as intrusions, distinct from the structure of scripts, proper.
4. There is some evidence to support the idea that importance ratings placed on script scenes by both staff and residents are, in part, a function of how relevant both groups feel their actions are within a particular scene.
5. Significant correlations between script scene importance and the demographic variables (including adaptation) point

to the following speculative conclusions:

- a. The dining room initiation scene, being defined as relevant to the ongoing adaptive response of residents, is indicative of the importance to residents of movement and mobility in their environment.
- b. Age appears to be a factor in importance placed on certain script scenes. Older residents are aware of life's finiteness, and often exhibit an urgency in their desire to extract relevance and meaning from their activities.
- c. Regardless of age, residents with more time in the facility showed some inclination (especially in the dining room script) to exhibit lower importance ratings, while staff showed an even greater tendency to rate certain activity script scenes less important over time.

Epilogue

The above points suggest that many factors are probably functioning during the construction and remembering of activity scripts. Physical and temporal aspects of the nursing home setting, both in terms of the environment and the individual, are most certainly incorporated into scripts, in one way or another. The imprecision in specifying how this occurs probably defines one of the forthcoming steps in the integration of diverse, but interdependent branches of psychology. Infused with the structural components of time, change,

and meaning, scripts of peoples' activities could become an important link in the description of how the external world could be stored in memory with such associated emotion, so much detail, and with such power to influence the present and the future of individuals.

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APPENDIX A

ADAPTATION SCALE

Nursing home residents' adaptation to their facility may be described as the process by which residents become more accepting of themselves and their facility, and, within their capabilities, are able to communicate and express themselves in a meaningful way. After each name below, please rate each resident on how well adapted you feel that resident is. The scale ranges from 1 (not very well adapted), to 5 (very well adapted) with 3 indicating a person who is reasonably well adapted, and 2 and 4 representing intermediate values. If a particular resident is not familiar to you, leave the scale by their name blank.

C.P.	1	2	3	4	5	F.Z.	1	2	3	4	5
M.W.	1	2	3	4	5	B.K.	1	2	3	4	5
T.B.	1	2	3	4	5	G.J.	1	2	3	4	5
E.S.	1	2	3	4	5	A.M.	1	2	3	4	5
E.P.	1	2	3	4	5	C.H.	1	2	3	4	5
G.H.	1	2	3	4	5	V.M.	1	2	3	4	5
W.S.	1	2	3	4	5	R.L.	1	2	3	4	5
O.M.	1	2	3	4	5	A.S.	1	2	3	4	5
E.W.	1	2	3	4	5	M.H.	1	2	3	4	5
L.B.	1	2	3	4	5	A.Z.	1	2	3	4	5
E.I.	1	2	3	4	5	R.C.	1	2	3	4	5
C.P.	1	2	3	4	5	G.B.	1	2	3	4	5

APPENDIX B

AMBULATION SCALE

1. WALKING WITHOUT AID
2. WALKING WITH AID (CANE, WALKER)
3. WHEELCHAIR BOUND WITHOUT AID (NOT IN NEED OF STAFF MEMBER)
4. WHEELCHAIR BOUND WITH AID (IN NEED OF STAFF MEMBER)
5. BEDRIDDEN

THE NURSING HOME ENVIRONMENT: AN INFORMATION
PROCESSING APPROACH

by

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B.A., Kansas University, 1975

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Psychology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1983

How nursing home residents and staff members process information about their immediate environment is examined using script theory (Shank & Abelson, 1977; Bower, Black, & Turner, 1979). In the pilot experiment, seventeen nursing home residents at one professional nursing center were asked to construct a hypothetical tour of their facility, describing each tour stop along the way. Four popular stops (the whirlpool, the therapy room, the dining room, and the bedroom) were chosen as the basis for activities with which to elicit scripts.

Approximately one year after completion of the pilot study, 25 residents (13 repeats) and 24 staff members from the same nursing facility were asked to produce scripts based on the following routine activities: going to the whirlpool bath; going to the therapy room; going to eat in the dining room; and going to sleep in the resident's own room. The therapy room activity was later excluded from statistical analyses because it involved too much missing data. After production of the activity scripts (on a cassette tape recorder), subjects were revisited and rated each script action (read from a written copy) in terms of importance using a five-point scale.

The main research questions concerned the relationship between script action importance and script action frequency of mention, a comparison of script scenes using mean importance ratings, and the relationship between script action importance and the demographic variables of age, adaptation, ambulation, and length of stay for residents and length of work service for staff members.

The results, somewhat tenuous due to small sample size and missing data, (1) did not indicate a positive linear relationship between script action frequency and importance (contrary to previous research), (2) pointed to mean importance of script scenes as relating to relevance based on resident and staff roles, and (3) suggested that age (positively) and length of time and service (negatively) were related to script scene importance. With some qualifications, script theory appears to be applicable to the nursing home environment.