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"ASKING DIRECTIONS" AND PEDESTRIAN WAYFINDING

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0.0 ABSTRACT

This paper reports a study of the social ecology and systemic aspects of "asking for directions" in an urban area. Interviews were conducted with 100 randomly selected pedestrians at spatially stratified locations representing a variety of urban environments in Lincoln, Nebraska. The interviewer, posing as a "lost" pedestrian, asked respondents to give directions to local landmarks and then unobtrusively recorded their responses on a concealed tape recorder. Respondents generally provided accurate, distance-conserving directions with low levels of spatial complexity. Responses were friendly and often tailored to the unique environmental attributes characterizing each location. An outline of the process whereby a pedestrian asks for and receives directions is developed. The process is characterized as a system, here called a Pedestrian-to-Pedestrian Asking/Receiving Directions Sequence, with five essential elements: informants, origin/destination knowledge, route construction, information transfer, and user implementation. Several unanswered questions about these sequences are presented as a stimulus to future investigations.

1.0 INTRODUCTION

The pedestrian experience in urban areas is fundamentally social in character. This fact is central when researching, planning, and evaluating solutions to pedestrian orientation and wayfinding information needs. Previous work emphasizes wayfinding needs within buildings (Best, 1970; Garling, 1975; Braaksma and Cook, 1980) and highly technological transportation systems such as subways (Beck, 1983; Bronzaft, Dobrow, and O'Hanlon, 1976) while a few others outline more general approaches in non-urban environments (Kaplan, 1976) and direction-giving based on cartographic information sources (Ward, Newcombe, and Overton, 1986). The present study suggests that relatively reliable navigation information is available from fellow pedestrians when a person on foot becomes lost or disoriented on city-wide street/sidewalk systems. That is to say, provision of engineering solutions, hardware, or cartographic aids need not be seen as the only available means for alleviating wayfinding problems in many everyday settings. A socially-based, reasonably accurate wayfinding information system is already in place and ready for continuing use.

The study reported in this paper is based on "interviews" with pedestrians who were asked to give directions for walking from one place to another. As such, it is hoped that this research contributes additional insights to the growing literature on pedestrian behavior and experience (Garbrecht, 1971a; Hill, 1976; Hill, 1984a; Hill, 1984b). This study demonstrates that there is a great deal to be learned about pedestrians by simply talking to them and working creatively with their responses (Hill, 1982a, 1985; Crandell and Hill, 1981). Within the general framework imposed by this study, conversations with pedestrians in the street reveal that navigational assistance is readily and expertly offered when requested.

Locating pedestrians and asking them for directions to a destination inaugurates a social process which is structured, responsive, and individually tailored. The structure of this process is built on five essential elements: informant frequency, origin/destination knowledge, route construction, information transfer, and user implementation. In this paper, this fundamentally complex system is referenced by the shorthand rubric: Pedestrian-to-Pedestrian Asking/Receiving Directions Sequence (A/RDS). The conceptualization and articulation of multiple-element human-environment systems of this type are discussed elsewhere in detail (Hill, 1979b), where it is also argued that explicating articulated theoretical systems is the goal of pragmatic environmental design research.

The A/RD Sequences reported in this paper have several distinguishing characteristics. For the most part, the wayfinding directions received from a sample of real-life pedestrians were accurate, distance conserving, low in spatial complexity, offered in a helpful and friendly manner, personalized, and tailored to the attributes of a variety of environmental settings and circumstances. The effectiveness of the A/RD Sequences reported here sets a high performance standard for other orientation and wayfinding aids. The following sections further develop the concept of A/RD Sequences; outline the methodology employed in this study; summarize the empirical findings; and briefly pose a set of unanswered questions for future research.

2.0 PEDESTRIAN-TO-PEDESTRIAN ASKING/RECEIVING DIRECTIONS SEQUENCES

The process whereby a "lost" pedestrian asks an "informant" for navigational guidance is called, in this paper, an Asking/Receiving Directions Sequence (A/RDS). All A/RD Sequences in this paper are assumed to be pedestrian-to-pedestrian although others (for example, pedestrian-to-vehicle driver, pedestrian-to-telephone operator) are certainly possible and warrant separate investigation. There are several components or stages in this process. The A/RD Sequence is generally not effective if any element is missing or incomplete. For purposes of outline, this system contains five major elements:

2.1 Sufficient Informant Frequency

If a person needs navigational information, there must be other pedestrians present who can be asked for direction-giving assistance. This is a basic and obvious requirement. Previous study suggests that the frequency of pedestrians declines as a function of distance from city center, suburban areas having relatively fewer pedestrians at a given daytime hour than Central Busi-

ness District areas (Hill, 1982b). City-wide variations in pedestrian frequencies during evening and late night hours are not known. Indeed, there has been little research on pedestrian needs at night or during adverse weather conditions (Hill, 1979a; Hill and Crandell, 1981). An accounting of pedestrian frequencies in other than the optimal daylight conditions so often represented in proposed urban design illustrations and architectural renderings remains an important task for future research.

From a "user need" perspective, there are more potential "information givers" where they are more likely to be needed on a strictly frequency basis: in or near Central Business Districts. From a "pragmatic" point of view, however, if pedestrians require orientation in a sparsely travelled suburban tract, they may have to search around a bit to find a knowledgeable neighborhood guide. Completing effective A/RDS may be difficult in settings (major tourist attractions, for example) where potentially "lost" pedestrians greatly outnumber the number of knowledgeable informants. It is, of course, still an open question as to how many (and under what conditions) pedestrians actually become seriously lost or disoriented in various settings.

2.2 Origin/Destination Knowledge

The direction-giver must know the "lost" pedestrian's current location and intended destination. This does not require knowing which way is "north" or "south" unless the "lost" pedestrian is trying to orient a cartographic aid or follow a set of compass directions (for example, "Go to the stoplight and then walk five blocks north").

"Lost" pedestrians may not know their specific destinations in a geographic or street address sense. They may have functionally-defined goals. For example, "I need to find a public telephone" or "Where's the nearest grocery store?" Some destinations may be only partially known. For example, "I'm supposed to meet my brother at the restaurant with the big plastic chicken on the roof. Do you know where that is?" In such cases, the informants are not only called upon for orientation and navigation assistance, they also become resources in environmental search processes. Various search strategies are more fully developed by Schneider (1975).

The density of potential destinations within a particular setting may complicate the A/RD Sequence. A person ignorant of the name or address but looking for a particular drug store (for example) in a large CBD presents quite a challenge to an informant. The best one can do is guide the "lost" pedestrian to a general area "where there is a chance of finding it" rather than to a specific destination.

2.3 Route Construction

Given that the helpful informants know the relevant origin/destination information, they must also be able to construct a route between these two points. Several models of pedestrian route-selection have already been proposed (Hill, 1978a, 1982, 1984c, 1986; Garbrecht, 1969, 1971b, 1973). The complexity and pattern of the street/sidewalk network may make route construction more problematic in some environments than others. An urban neighborhood characterized by diagonal streets, winding boulevards, mid-block pedestrian crossings, and pedestrian skyways, for example, increases the amount of environmental detail which must be mastered before effective wayfinding directions can be offered.

2.4 Information Transfer

Informants must convert their environmental knowledge into accurate, understandable verbal instructions (or graphics, if they take the unusual step of drawing sketch maps for "lost" pedestrians). Language and cultural barriers can, potentially, confuse rather than orient at this stage of the A/RD Sequence. Persons not accustomed to "giving directions" may become flustered, even though they know an appropriate route to recommend. Such problems might be partially remedied by extending the emphasis on "how to give directions" exercises presently incorporated in Boy Scout and Girl Scout programs to other youth organizations as well as the schools .

2.5 User Implementation

Finally, "lost" pedestrians must comprehend, remember, and follow the "directions" to their destinations. While this study does not address this question, previous work demonstrates that most pedestrians have highly adequate spatial skills, presumably sufficient to follow a route of moderate complexity and length (Hill, 1984d).

2.6 Summary of A/RD System Sequences

In summary, there are several elements in an effective pedestrian-to-pedestrian A/RD Sequence. The sequence described above is only a general outline, however. It can be broken down into a much finer series of interconnected cognitive skills and social processes. Such fine-grained theoretical development, however, may not be necessary from a pragmatic point of view. This study, as will be detailed below, demonstrates that the probability of successfully completing an effective A/RD Sequence is quite high, at least within the study site chosen for investigation. One clear and very practical result of this study is the realization that elaborate theoretical models are not required to understand that pedestrian-to-pedestrian A/RD Sequences can be effective orientation and wayfinding aids. This point should be emphasized and should be seriously considered before overly elaborate studies of orientation and wayfinding are undertaken.

3.0 STUDY SITE AND METHODOLOGY

3.1 Study Site

Data were collected in Lincoln, Nebraska, a city which provides a diverse urban environment of moderate size (approximately 180,000 population). The study area was defined as the contiguous, built-up area of the city. This definition insured the inclusion of a wide range of environmental settings and street patterns.

3.2 Sampling Design

The goal of the sampling design was to provide interviews with 100 randomly selected respondents from representative urban settings within the study site. Twenty random, spatially stratified quadrants were identified. Five interview points were randomly selected from the street intersections within each quadrant. The result

was a sample of 100 random, spatially stratified, clustered interview points.

3.3 Data Collection

Data collection resulted in 100 records of pedestrians' descriptions of "how to get from here to there." Data were obtained by asking five randomly selected pedestrians in each quadrant for directions to a neighborhood "landmark" in or near the quadrant. The researcher-selected landmark was the nearest public elementary school, since it was expected that the majority of residents in an area would have some familiarity with the location of such a physically large, institutionally important public structure.

During interviews with respondents, the researcher was disguised as a "photographer." This legitimated carrying a "camera bag" in which a tape recorder was concealed. The recorder was connected to a tiny microphone unobtrusively inserted in the shoulder strap of the "camera bag."

At pre-selected, random times and street intersections, the researcher approached unaccompanied pedestrians and said, "Excuse me, I have an appointment at the Hartly Elementary School (for example) to take some pictures and I guess my friend dropped me off on the wrong corner. Could you please tell me how to get there from here?" The repondent's "answer" was unobtrusively recorded. Well out of the respondent's earshot, supplementary information was added: respondent's gender; time of day; and any other information such as street names or geographic directions needed later to map and make sense of the respondent's "answer".

4.0 RESULTS

4.1 Sample Characteristics

One hundred randomly selected respondents were asked by a disguised interviewer to provide directions for walking to a nearby landmark. Males (65%) are more frequently represented in this sample than are women (44%). Previous work, however, shows that during weekdays, women are more likely to be present on residential sidewalks (Hill, 1982b). Since all interviews were conducted during daylight hours on summer weekends, it is possible that males, who are underrepresented "on the streets" Monday through Friday, were encountered more frequently on neighborhood streets than would be the case on weekdays. Following typical weekday patterns, males predominated in commercial districts as expected, however.

4.2 Accuracy of Respondents' "Directions"

Not all respondents provided "directions" leading to the target destination. "Accuracy" was determined by mapping each respondent's "answer" on a base map (1:8,000) to verify if the suggested route actually led to the target landmark. Whereas 78 respondents gave accurate replies, seven gave inaccurate directions and fifteen said they "Didn't know" the location of the target. Because respondents who "don't know" the directions to a landmark often state this fact to inquiring pedestrians, this warns the pedestrian to look for a more knowledgeable informant. Thus, if the "Didn't know" category is deducted from the total, then the researcher posing as a "lost" photographer stood a 92% chance of receiving accurate, helpful directions from knowledgeable, anonymous pedestrians in this study. This is a relatively impressive error-free rate.

4.2.1 Accuracy Not a Function of Gender

Pinpointing the "cause"of "error" in giving directions is hampered in this study by the small number of inaccurate responses. For purposes of analysis, however, the categories "Inaccurate response" and "Didn't know" can be combined to obtain expected cell frequencies required for the non-parametric chi-square test. These combined categories are referenced as "Not Accurate" in Table 1. Inspection of the table indicates that males gave slightly more accurate responses (82%) than did females (73%), but this difference is not statistically significant at the .01 level. Without more exhaustive data, it is tentatively concluded that there is no difference in the ability of male and female pedestrians to give accurate wayfinding directions to a "lost" walker.

TABLE 1: GENDER AND RESPONSE ACCURACY

Gender	Accurate	Not Accurate	Total
Males	46 (82%)		
Females	32 (73%)		
Total	78 (78%)	22	100

Note: In this table, the category "Not Accurate" includes "Didn't know" plus "Inaccurate" Responses. See text for discussion.

4.2.2 Accuracy as a Function of Distance from Target

If it is assumed that spatial knowledge deteriorates in comprehensiveness given ever larger regions for which one is expected to be knowledgeable or experienced, it is possible to hypothesize that increased distance to a landmark should be associated with increased errors in giving directions to the landmark. Distances to target landmarks ranged, in this study, from a minimum of .13 mile to a maximum of .87 mile. The mean and median for this distribution were identical (.48 mile). Mean target distance of "Inaccurate" and "Didn't know" categories combined was .56 mile whereas the mean distance for accurate replies was .47 mile. Thus, the data reveal a slight tendency for more errors and/or less spatial knowledge with increasing distance from the landmark. This difference, however, is not statistically significant at the .01 level. This result suggests that accurate spatial knowledge of nearby landmarks is not much affected over distance within a .87 mile range. Significant differences might have appeared if more distant targets had been included in the study. Neighborhood elementary schools were chosen here as landmark targets precisely because it was expected that residents would know their location and attempt to offer a suggested walking route. It is cautioned that accuracy might well vary as a function of landmark type. This is a question awaiting future investigation.

4.3 The Good Samaritan Norm

Impressive levels of friendliness and cooperation were exhibited by the great majority of respondents interviewed. Not once did the researcher meet with a rude informant or an outright refusal of navigational aid. In one case, the researcher had to decline a respondent's

persistent offer to get a car and drive the researcher to the target school six blocks away because the respondent protested that six blocks was "too far to walk." In two other cases, respondents ran back to their homes to get telephone books in order to look up the address of a target school.

The high degree of friendliness may be due in part to the fact that many of the interviews took place in residential neighborhoods rather than solely in busy commercial districts, the typical location of most pedestrian-oriented research. Further, the moderate urban size and relative ethnic homogeneity of the study site may have been additional factors. The physical appearance of the researcher, a white male, was "neat and clean cut" and this may have improved the level of helpfulness received. Variations in response and helpfulness as a function of gender, age, race, and status differences between "lost" pedestrians and "informants" are certainly possible. Willingness to admit "being lost" may also vary as a function of these and other factors. Hill and Deegan (1982), for example, point to the objective and subjective aspects of vulnerability experienced by women in male-dominated landscapes. Whether these variations would be of large magnitude or significance when asking for directions, however, remains open for investigation.

Nonetheless, theoretical and observational research by Goffman (1971), Ryave and Sheinkein (1974), Wolff (1973), and Wagner (1981) strongly suggests that normative cooperation may be a far more fundamental dimension of the pedestrian experience than the "sensory overload" and experimental "bystander apathy" research would lead one to hypothesize. The world of the pedestrian may have many more good Samaritans than we sometimes think.

4.4 Knowledgeability Norms

Fifteen respondents said they "Didn't know" where the "target" landmark was located. Most respondents added that because they "Didn't know" the location of the landmark, they could not therefore give directions to it. Appending this obvious and logical consequence of "not knowing" was apparently important to the respondents. It may have been a way to say they would like to help, but were not knowledgeable. All those who admitted not knowing the location of a target were apologetic (some profusely so) for their lack of spatial knowledge. It appears to be a widespread norm that pedestrians should be both helpful and knowledgeable.

In almost all cases where respondents gave inaccurate directions, it was obvious (through various cues such as extensive head scratching, hemming and hawing, and generally muddled behavior) that the respondent was unable to provide accurate directions to the intended target. It is probable that such respondents felt that they should be able to respond and they often spent several minutes trying to figure out a route. The "lost" pedestrian who is socially alert to the cues which advertise "this person is giving me the wrong directions" has little difficulty identifying informants who "want to help" but obviously are not knowledgeable or skilled enough to do so. The interpersonal ability to discriminate between knowledgeable and unknowledgeable informants greatly increases the already high probability of eventually securing accurate directions.

4.5 Spatial Configuration of Proffered Routes

An important characteristic of "directions" is whether they outline a short, direct route to the desired destination. Of those respondents who provided accurate directions to local landmarks in this study, 100% (N=78) gave directions for the shortest possible routes. None of the knowledgeable informants "sent" the researcher on an unnecessarily long trip.

Frequently, due to the geometry of street networks, respondents were faced with the task of recommending one of several shortest distance paths to the target landmark. This occurred in 60% (N=47) of the cases where respondents offered accurate directions. In these 47 instances, the mean distance from origin to target landmarks was .55 mile. Faced with the opportunity to suggest a path which zig-zagged its way to the target landmark, 85% (N=40) chose instead to recommend a spatially more simple route, one with fewer turns or changes of direction in it. Such routes are no doubt easier to remember and it is hypothesized that the respondents took this into account when they offered directions to target landmarks. It should be noted that the suggested routes were, in fact, much less spatially complex than the routes adopted by people who are actually walking from one point to another in urban environments (Hill, 1982b, 1986).

4.6 Linguistic Content of A/RD Sequences

Several conversational ploys characterize responses to route-finding inquiries. The first four categories discussed below are transformationally similar to those found in many cartographic schemes while the remaining categories are more tailored and personalized. These latter conventions not only suggest items which cartographers and engineers might profitably take into account when designing wayfinding aids, they also suggest why pedestrian-to-pedestrian A/RD Sequences are potentially so effective.

4.6.1 Geometrizations and Spatial Relations

Almost all direction-givers employ at least a few concepts from this linguistic category. They verbally convey the properties and relationships that maps attempt to show graphically (Hill,1978b; Robinson and Petchenik, 1976). Frequently used vocabulary included: straight, jogs, curves around, diagonal, across, angle, corner, up, down, bottom, top, left, right, back, front, between, over, etc. Sometimes these terms are used colloquially, as when in a neighborhood with perfectly level topography an address is said to be at the "top" of the street while another is characterized as at the "bottom". Many respondents instructed the researcher to go "up" the street even though the topography was quite level.

4.6.2 Compass Directions

The cardinal compass points (north, south, east, and west) are frequently employed in giving directions, as they are on most maps (at least for orientation). Some respondents spoke in terms of "objective" compass directions while others described their environment in much more personal or "relativistic" terms such as "left", "right", "front", and "back". Many direction-givers easily switch between these two general styles of environmental organization, especially when they sense that the "lost" pedestrian is more comfortable with one system than the other.

4.6.3 Distance Units

Providing information similar to that of the "distance scale" on a map, many information-givers report "how far" it is from origin to destination or between landmarks which may be found along a route. Generally, the most common "unit" is the "block". For example, "It's a couple of blocks from here". Unlike a standard metric, "blocks" are often of variable length, sometimes "short" or "long". This is rarely an obstacle to accurate direction-giving. Respondents utilized standardized metrics infrequently (for example, "I think it's about half a mile up the road"). It may be that route-givers think within a loose topological framework rather than one characterized by rigid metrics.

4.6.4 Place Names

Direction-givers use street names and other place names, although street names are by far the most frequently employed. A route from one place to another can, of course, be described without the use of street names, simply by using spatial relationships and distance units. For example, "Go straight ahead four blocks, then left two and a half blocks." Tendencies to use street names or spatial relationships to describe routes probably represent variations in cognitive styles. Nonetheless, both are effective. Most respondents, however, use combinations of these two styles. For example, "Take Elmwood north for four blocks and then turn left for three blocks on 24th Street."

4.6.5 Route Character and Landmarks

In this category, one sees greater divergence between the information a map can offer, on the one hand, and the detail possible in an effective pedestrian-to-pedestrian A/RD Sequence. Lynch asserted that many people apparently conceptualize urban environments in terms of paths, nodes, districts, edges, and landmarks (Lynch, 1960). Review of Lynch's empirical and interpretive methodology leads this researcher to conclude that Lynch overstated his case, imposing preconceived categories rather than allowing them to emerge from the data. In this study, most of the elements in Lynch's system are lumped together as landmarks and descriptions of route character. What specially characterizes and sets apart the route character and landmark specifications employed by pedestrian direction-givers is the large amount of small-scale detail. This characteristic likely results in part from the slow rates of travel which characterize pedestrian trips (Rapoport and Hawkes, 1970; Rapoport, 1981). Vocabulary in this category included: tennis court, park bench, stop sign, traffic signal, parking lot, grocery store, drug store, mailbox, big fence, the blue house, etc. Many of these environmental markers are much too small or unique to be identified on maps intended for general use, even at a neighborhood scale. Each A/RD Sequence route description is keyed to the special and particular characteristics of each neighborhood and circumstance. Many of the descriptors and markers recorded in this study were fairly specific and unique, as in: "Go on by the stone house with the funny curved windows and the kids in the yard". Unlike a map, the enormous array of descriptors available in a pedestrian-to-pedestrian A/RD Sequence can be used to refer easily to temporal and transitory conditions. For example, "It's a pretty busy street this time of day," "There's a construction site there now," "You'll know it 'cause you'll see a lot of people up there," "I don't think it's there any more, they knocked the building down last month."

4.6.6 Personalizations

Personalizations such as, "My kids go to school there", are not directly important for pedestrian navigation. On the other hand, they serve an important function, linking the informant and the "lost" pedestrian together in a wider social universe that transcends mere geography. Such comments also link the informant to the neighborhood in which the information is dispensed. They help legitimate the informant's position as a knowledgeable informant. Personalizations may help orient the "lost" pedestrian emotionally, drawing him/her out of an anonymous world into a normatively-structured community. This is especially true when the informant offers additional advice or information which enhances, eases, or makes safer the "lost" pedestrian's impending journey. For example, "My favorite coffee shop is on the way about three blocks up, you might want to stop in," "It's so pretty here, it really is a good place to go walking, isn't it?", "That's a pretty rough neighborhood, I'd keep my eyes open," or simply, "Have a nice walk, you have a beautiful day for it." Sometimes needed sympathy is provided, "Murder, that's a long way to walk!"

4.6.7 Non-verbal Communication

Several respondents combined verbal and non-verbal cues. For example, while instructing "Go to this corner," an informant pointed directly to the intended place. Combining verbal with non-verbal cues not only reduces the potential necessity for long-winded verbal descriptions, it also strengthens and makes informational content redundant by using more than one communication channel.

4.7 Summary

The above outlines the major characteristics of the directions received in pedestrian-to-pedestrian A/RD Sequences: accuracy, helpfulness and knowledgeability norms, distance conservation, spatial simplicity, and linguistic adaptability tailored to individual needs and specific environmental settings. In some ways, the directions received are similar to the information that could be gained from consulting a map. In many other ways, however, the information received is much more detailed and specific. The directions can be "tailored" to each pedestrian and each environmental situation. Informants sometimes interrogate "lost" pedestrians during the A/RD Sequence to verify if disoriented persons really know where they want to go (sometimes they are genuinely fuzzy about their destinations). Informants sometimes check to see if "lost" pedestrians actually comprehend the informant's directions. Few, if any, cartographic aids are this responsive. In addition, informants can, if need be, make use of additional resources. Respondents in this study, for example, sometimes supplemented their own information by consulting telephone books or by themselves asking questions of other passersby.

5.0 DISCUSSION

The pedestrian-to-pedestrian Asking/Receiving Directions Sequence provides a straightforward solution to orientation and wayfinding information needs: "Just Ask!" This solution may not be fully applicable in all environmental settings, but it certainly has wide-spread

relevance. The ability of pedestrians to provide accurate, highly tailored and personalized navigational information to other pedestrians sets a performance standard that engineers and cartographic designers would be hard pressed to equal, let alone surpass.

Hopefully, this introductory analysis of pedestrian-to-pedestrian A/RD Sequences will remind planners and policy makers to weigh the feasibility of distinctively social solutions to transportation problems. Such solutions are generally much less expensive than technological schemes and have the added benefit of increasing and reinforcing community bonds. On the neighborhood level, for example, provision of wayfinding assistance might well be incorporated into existing "Neighborhood Watch" and "Block Home" programs. Several homes in each residential neighborhood could be identified with a simple symbol designating them as sources of wayfinding information. On the community level, especially at times when communities are temporarily innundated with large numbers of visitors attending conventions, festivals, sporting events, etc., service and youth organization could be encouraged to provide sidewalk "information booths" in heavily frequented districts. With a little work and even less expense, actually helping people find their way from place to place could become an unacknowledged and widespread urban norm.

5.1 Unanswered Questions

This study reveals several issues warranting additional investigation before pedestrian-to-pedestrian A/RD Sequences can be fully validated as a general purpose solution to pedestrian navigation and wayfinding needs.

(1) In general, are the findings of this study generalizable to urban settings with greater environmental and social diversity?

(2) In areas with low pedestrian frequency rates, how long will a "lost" pedestrian typically have to wait before encountering a knowledgeable informant?

(3) What are the typical, city-wide diurnal and seasonal variations in pedestrian frequency?

(4) What ratio of "lost" pedestrians to "informants" must be sustained for a high proportion of A/RD Sequences to be successfully completed?

(5) How often do pedestrians become "lost" or "disoriented"?

(6) Are typical "lost" pedestrians more in need of navigational assistance or environmental search assistance?

(7) To what extent are pedestrians presently engaging in A/RD Sequences?

(8) To what degree, if any, does environmental complexity and/or density and diversity of destinations frustrate effective A/RD Sequences compared with cartographic wayfinding aids?

(9) What percentage of the general population lacks skill in giving, receiving, and following directions? Can lack of skill be easily remedied through public education efforts?

(10) Do pedestrians feel "vulnerable" or "apprehensive" if they admit to a stranger that they have lost their way? Is such concern objectively defensible?

(11) Does A/RD Sequence effectiveness vary significantly according to destination type (for example, commercial enterprises, public buildings, churches, parks, residences, street addresses, etc.)?

(12) Does helpfulness vary significantly as a function of gender, age, race, and status differences between "informant" and "lost" pedestrian?

(13) Should wider use of pedestrian-to-pedestrian A/RD Sequences be encouraged and fostered as a matter of public policy? How might such policies be designed and implemented?

5.2 Summary

The questions above demonstrate that while the A/RD Sequence is a straightforward process, there are many aspects which deserve additional investigation. No doubt many of these questions could be inexpensively explored in graduate-level seminars and research projects. It should become standard policy to consider and investigate promoting wider reliance on pedestrian-to-pedestrian A/RD Sequences before implementing costly hardware or cartographic solutions to documented or potential pedestrian wayfinding needs. It is this researcher's expectation that additional investigation of pedestrian-to-pedestrian A/RD Sequences will increasingly reveal more detail and information about the inherently social character of pedestrianism. At this point, there is a great deal to be learned by using subjective and phenomenological techniques in place of narrowly framed questionnaire or observation studies. Rich understanding of the social nature of walking may well encourage a major shift in attitudes toward pedestrian-oriented design and, subsequently, pedestrianism per se. In a recent and widely-read book, Lofland (1973) concluded that when we leave our front door and walk down the sidewalk, we enter what she called "a world of strangers". This is a technical half-truth. Less alienated sociological investigation reveals that when we walk down the sidewalk, we also enter a normatively-structured community in which large numbers of people stand ready to lend assistance when asked. As transportation researchers, pedestrian advocates, and agency representatives, we should explore all avenues which hold significant promise for expanding and strengthening the bonds of human community and social interdependence. This researcher believes that searching for a better understanding of how and under what conditions pedestrians ask for and receive wayfinding directions from each other is one such opportunity.

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