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Developing Information Systems for the Driving Tourist: A Literature Review

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February 1996

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Introduction

The world is a book, and those who do not travel, read only a page.

-St. Augustine

Whether one has read just one or many pages of the world, nearly everyone is affected by tourism. Bringing in about six percent of the gross national product in the United States (U.S.), the tourist industry is an indispensable part of the U.S. economy, and many other countries' economies. Tourism has even been credited with both enhancing and detracting from intercultural harmony. Because it provides the opportunity for both education and vitality, some form of tourism is engaged in by most people.

Throughout our history, technology has been applied to many aspects of our lives as a way to improve well-being, with varying levels of success. Tourism is no exception. Today, information about tourist destinations can be gleaned from *Internet*, a worldwide computer network, hotel bills can be seen on in-room television sets, and reservations can be made electronically. In the field of automotive transportation, there have been significant developments in communication and electronic technology (collectively called Intelligent Transportation Systems or ITS). These systems include automated highways, automatic traveler distress assistance, vision enhancement, and in-vehicle navigation and information systems. However, little of this technology has been tailored specifically for tourist use.

The purpose of this paper is to review the field of tourism in order to provide a background for the development of transportation technology, such as in-vehicle information systems designed specifically for the tourists who drive. Because the field of tourism is complex and multifaceted, this review covers a wide range of areas that are relevant to the driving tourist. We start with an overview of tourism that includes a discussion of tourism and how it has been affected by the introduction of the automobile, a review of tourism statistics,

a description of the older driving tourist, and a brief mention of the trends that are likely to affect tourism in the future. We then discuss the field of tourism research, the roles that people assume when traveling, and how these roles relate to the development of in-vehicle information systems. Next, we present a review of travel motivation and factors that influence tourist preferences, such as expectations, potential health problems, and sociodemographic factors. Because one potential effect of in-vehicle navigation systems is the increase of tourist travel to a certain area, we have included a discussion of the social and cultural impacts of tourism and suggestions on how the negative impacts might be diminished. We also include a discussion of tourist health and how in-vehicle systems could provide information to lessen or prevent ill health. We then summarize the literature related to tourist information use and preferences, covering the areas of route choice, spatial behavior, map use and wayfinding, need for traffic information, likelihood to divert from a route, and the implications of all of this for in-vehicle information systems for tourists who drive. Also included in this section is a review of some recent data on traveler use and acceptance of advanced technology. Finally, we conclude our review with a brief discussion of the scenic byways system.

General Overview of Tourism

What singular emotions fill their bosoms
who have been induced to roam?

-Lord Byron

History and development

Tourism has been described as the loosely interrelated amalgam of industries that arise from the movement of people, and their stay in various destinations outside of their home area (Pearce, 1982). While the formal study of tourism is a recent phenomenon, there is a large body of humanistic literature on this topic dating back to early civilizations in the Middle East, Asia, and the Mediterranean that speaks to the art and psychology of travel, strangers and their manners, languages, religions, gift giving, lodging, and hospitality (Graburn and Jafari, 1991).

Modern tourism, or what is often called mass tourism, can be traced to Thomas Cook, an English Methodist reformer, who organized a steam train to carry 540 people to a religious convention in 1841 (Kelly and Godbey, 1992). Building on the success of this endeavor, and the apparent need for such efforts, Cook eventually became a tour operator and is credited with inventing traveler's checks. He is also credited with establishing the modern tourist industry characterized by travel agencies, reserved seats, guidebooks, and other services that enabled people to travel more safely, predictably, and affordably.

Theilmann (1987) has noted that there are important similarities between modern tourism and the earliest religious pilgrimages. He pointed out that while pilgrimages represented a religious activity and tourism a secular activity, early pilgrims enjoyed seeing the sights while also fulfilling a spiritual need, and today's tourists claim educational and spiritual benefits from their travels. Pilgrimages provided a socially acceptable means for

mobility in a closed society, and like modern tourism, helped break down social barriers by exposing travelers to new people and places. Thus, although pilgrimages were a religious activity concerned with the spiritual improvement of society, they provided the origins for modern tourism.

Modern tourism differs from earlier tourism not so much in the motivations for travel but in how such travel was perceived and sanctioned by society (Smith, 1992). In the 18th century, some religious pilgrimages began to be renamed voyages of discovery in recognition that people were traveling partially for non-religious purposes. Youthful travelers, for example, were often considered honored guests in a town or city where they traveled to study the humanities if they were wealthy or to gain work experience if they were not. By the mid 18th century, travel by wealthy northern Europeans to health spas in their own countries, centers of learning, and to the ruins of the great classic civilizations of southern Europe had become commonplace--so much so that this circuit became known as the "tour" (Grayburn and Jafari, 1991). In fact, the word tour was derived from the Latin "tornare" and the Greek "tornos" meaning the movement or transportation around a central point or to circle. Thus, transportation is intimately linked with tourism.

Because of this link, many changes in tourism have occurred as a result of developments in transportation. The arrival of the railway to European coastal areas in the mid 19th century brought about the growth of the seaside resort (Wong, 1993) and the expansion of overseas travel was boosted by the introduction of jet travel in 1952 (Grayburn and Jafari, 1991). However, the biggest development in tourism was made possible by the invention of the automobile at end of the 19th century¹, enabling tourists to drive. Between 1900 and 1910, motor vehicle registrations in the U.S. climbed from about 8,000 to 458,500 (Wren, 1993). By 1920, eight million motor vehicles were registered in the U.S. and annual car sales had increased to two million from 4,000 in 1900 (Krebs, 1993).

¹ While the beginning of the automobile age is generally considered to be in the 1890s, some attempts to develop an automobile were undertaken in the U.S. as early as 1805 (Scharzburg, 1993).

The effects of the automobile on tourism were quickly realized. Automobile tours organized by newly created automobile clubs gave motor vehicles early public exposure, such as the first AAA Glidden tour from New York to New Hampshire in 1905 (Jenkins, 1967). However, few of the nation's roads were suitable for motor vehicle travel. Of the two million miles of road in 1900, 15,000 miles were gravel, 141 miles were paved, and the rest were dirt (Borth, 1969; Krebs, 1993). Consequently, automobile travel remained largely an urban phenomenon and only the most adventurous automobile drivers ventured out of the city. Finally, responding to pressure from the League of American Wheelmen (a bicyclist group), in 1912 Congress approved \$500,000 for construction of 425 miles of new paved rural roads and four years later allocated \$75 million over five years for rural road building (Wren, Kollins, Wagner, and Yanik, 1989; Jenkins, 1967). Today, there are about 58 million miles of paved roads and 41 million miles of unpaved roads in the U.S. (Federal Highway Administration, 1995).

Early automobile travel was also constrained by a lack of service stations and the high prices of the automobiles themselves which put them out of reach of most Americans. The development of the *Ford Model T*, with its low price and dependability, revolutionized the American auto industry and made automobile travel accessible and desirable to large segments of the population. Wren et al. (1989), described U.S. automobile travel as it was shaped by this and other developments in the travel industry. They noted that “the automobile bonanza of the 1920s saw a tremendous boom as closed cars stimulated all-weather travel on new highways throughout the country. Tourists hit the highways in record numbers. Gasoline was cheap, plentiful, and available as new filling stations began dotting the countryside. Complementing the stations were motor cabins, hot dog and root beer stands, fried chicken emporiums, farmers' produce stands and advertising signs by the hundreds and thousands” (Wren, et al., 1989, page 23).

Along with these developments in driving tourism, one phenomenon emerged in the early 1900s and continues today--touring by recreational vehicle (RV). In his chronicle of RV travel, Bohn (1993) noted that Americans embraced the RV concept in the early 1900s, with

commercially manufactured campers appearing in 1910 and motor homes in 1915. Bohn reported an estimate made by *The New York Times* in 1922 that there were 15 million RVs on the road--half of all cars in existence at that time. The *Model T*, introduced in 1908, served as an affordable platform for auto camping for the middle class and transformed auto camping from a phenomenon reserved solely for the wealthy. Recreational camping remained popular throughout the Depression and although WWII brought a halt to the trailer manufacturing industry, trailers regained popularity in the late 1940s, and truck campers were also introduced. In the 1950s, a new type of RV was developed by Volkswagen that eventually led to the van camper, the van conversion, and finally the minivan. Today, according to Bohn, one of every ten households owns some type of RV, from \$2,500 pop-up tent campers to \$250,000 motor homes.

Descriptive statistics

Tourism by automobile drivers, as well as tourism in general, has grown consistently. Evidence of this growth in the U.S. can be seen in travel statistics compiled by the U.S. Travel Data Center (1995). The U.S. Travel Data Center is a clearinghouse for information on the travel industry administered by the Travel Industry Association of America, an organization that seeks to stimulate growth of domestic and international travel to the U.S. (Fischer and Schwartz, 1995). The center has conducted monthly, national telephone surveys since 1979 to provide information on major trends in U.S. travel activity, using national probability samples of 1,500 adult residents of the contiguous U.S.

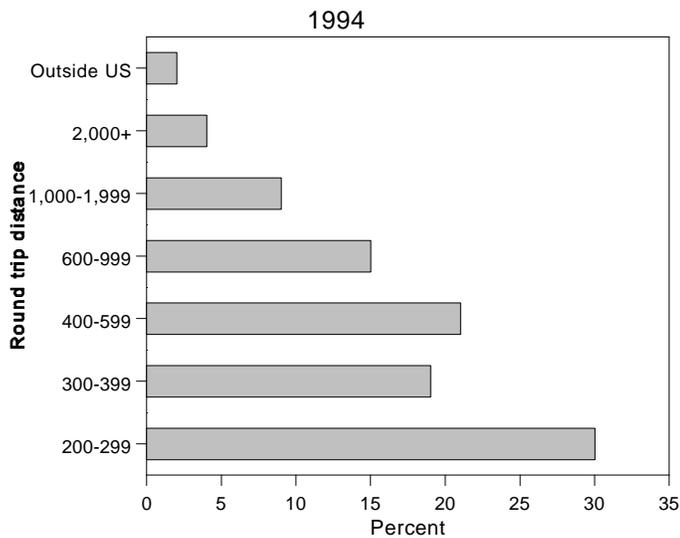
Holecek and Herbowicz (1995) cautioned that because of the center's emphasis on overall travel volumes, statistics from the center are most helpful in assessing travel at the national level. The authors noted the limited availability of other travel statistics, particularly from the U.S. Federal Government, which focuses its attention on travel imports rather than travel within the U.S. Thus, data from the Travel Data Center represents one of the most accessible sources of nonproprietary information on U.S. travel activity.

According to the U.S. Travel Data Center (1995), trips by automobile (i.e., round trips of 200 miles or more away from home made by a household) among U.S. residents increased 45 percent between 1984 and 1994, from 335.8 million to 487.0 million trips. (Note that automobile trips are defined as trips by automobile or truck without camping equipment, automobile or truck with camper trailer or camping equipment, or self-contained recreational vehicle such as a live-in camper or RV.) Person-trips (i.e., trips by each member of the household) by automobile increased 46 percent, from 590.0 million to 863.5 million during the same ten-year period. This upward trend in automobile travel was indicative of increased U.S. travel in general, regardless of type of transportation mode.

Findings from the U.S. Travel Data Center's surveys also provide information about the nature of automobile travel by U.S. residents. Figures 1-5 present characteristics of person-trips by automobile in 1994, based on findings from the 1994 U.S. Travel Data Center survey. Figure 1 shows the percentage of automobile person-trips as a function of the round trip distance for trips 200 miles or longer (i.e., trips that are likely to be for tourist purposes). As can be seen in this figure, automobile trips outside the U.S. constituted only two percent of all person-trips by U.S. residents. About 40 percent of all long person-trips by automobile had a round-trip distance between 300 and 600 miles, with the average domestic trips being 610 miles long.

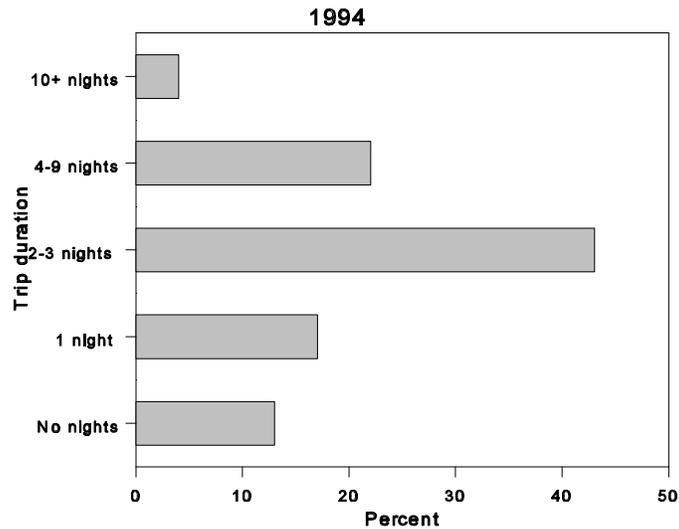
Not only are people frequently taking lengthy trips, the trips seem to be lasting a long time. Figure 2 shows the percentage of person-trips as a function of trip duration (defined as the number of nights stay), again for trips over 200 miles. This figure indicates that the majority of person-trips by automobile (about 60 percent) involved an overnight stay of one to three nights, while about 25 percent involved a stay of four or more nights. Only 13 percent of person-trips by automobile involved no overnight stay; that is, in 87 percent of all person-trips, overnight accommodations were necessary.

Fig. 1. Percent of Person-Trips by Round Trip Distance



Where are people spending the night when they travel? Figure 3 shows the percentage of person-trips by type of accommodation utilized. As shown in this figure, the

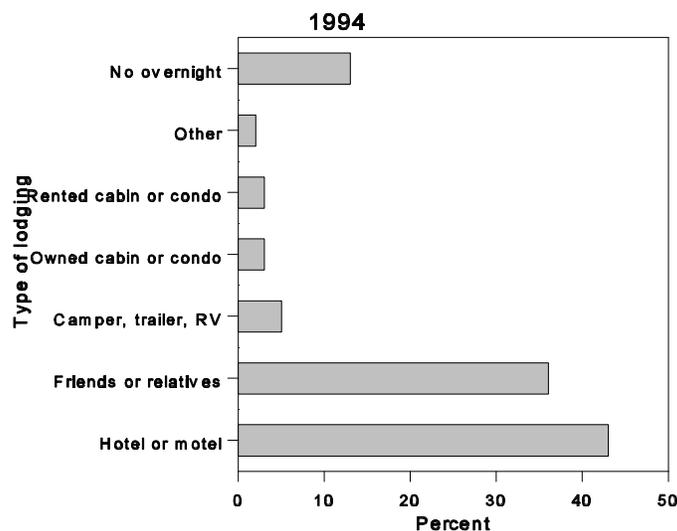
Fig. 2. Percent of Person-Trips by Trip Duration



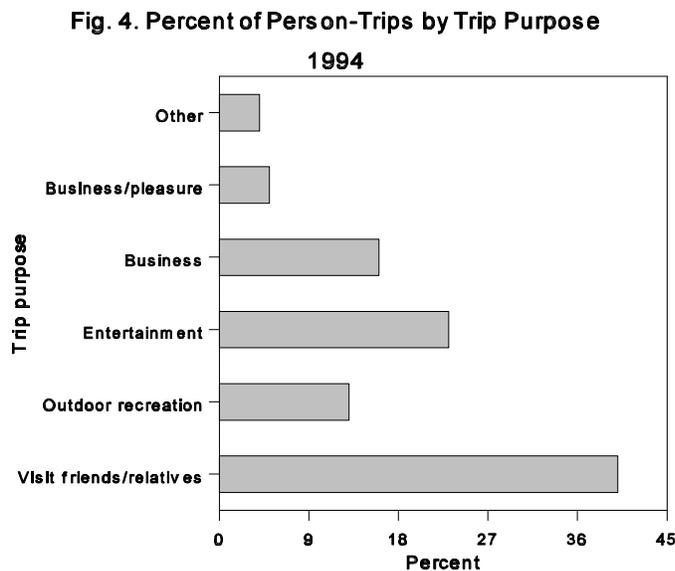
most common types of lodging used by automobile travelers were hotels or motels (43 percent) and the homes of friends or relatives (36 percent). Five percent of person-trips by automobile involved camping overnight in a camper, trailer, or RV.

The previous figures have shown that a majority of person-trips by automobile are long in distance and duration and that people tend to stay at hotels or with friends or relatives. Why

Fig. 3. Percent of Person-Trips by Type of Lodging

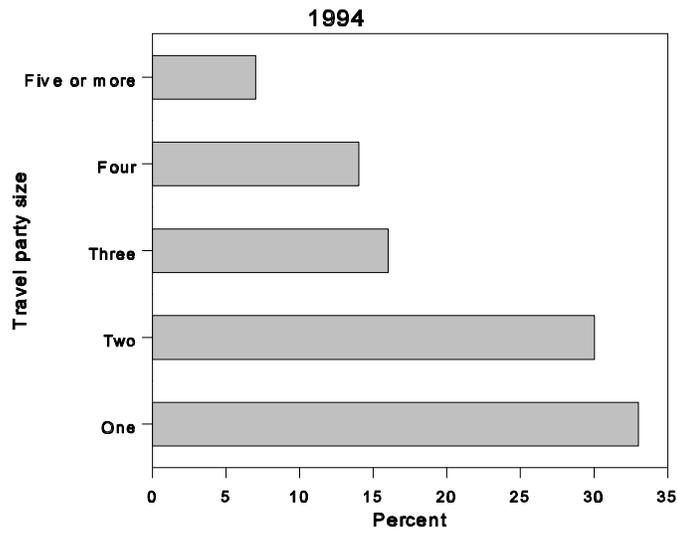


are these people traveling? Figure 4 shows the percentage of person-trips by trip purpose. This figure indicates that trips taken solely for pleasure (defined by the U.S. Travel Data Center as including entertainment, outdoor recreation, and visiting friends or relatives) accounted for 75 percent of all person-trips by automobile. Thus, the vast majority of trips over 200 miles long are for tourist purposes. In addition to the categories included in Figure 4, automobile trips taken by survey respondents were characterized as vacation travel by 61 percent of the sample and as overnight weekend travel by 54 percent of the sample. These latter categories are not mutually exclusive of categories in Figure 4, however. Collectively, these data show the prevalence of the driving tourist in the U.S..



While most of the people surveyed indicated they were traveling for tourist purposes, how often did they travel with other people? Figure 5 indicates that two-thirds of all person-trips by automobile involved at least two people, traveling together. More than one-third of person-trips by automobile involved three or more travelers, while less than one-quarter traveled by themselves. Clearly, most long trips are taken with others in the automobile.

Fig. 5. Percent of Person-Trips by Travel Party Size



According to data from the U.S. Travel Data Center, travel by automobile represents the largest component of all travel in the U.S., with automobile travel comprising 76 percent of all travel in 1994. When looking at specific kinds of travel, automobile travel accounted for the following proportions in 1994: 55 percent of business travel, 82 percent of pleasure travel, 72 percent of vacation travel, 84 percent of weekend travel, and 61 percent of hotel/motel trips.

Descriptive statistics on personal travel in the U.S. are also available from the Nationwide Personal Transportation Survey (NPTS). Although they generally support the findings from the U.S. Travel Data Center, they are not directly comparable. The NPTS is a national survey, conducted at approximately seven-year intervals, intended to provide information on the use of various modes of travel, as well as on characteristics of travelers and trips (Liss, 1991). The most recent NPTS, completed as a telephone survey in 1990, was sponsored by five U.S. Department of Transportation agencies: The Federal Highway Administration, The Urban Mass Transportation Administration, The National Highway Traffic Safety Administration, The Office of the Secretary of Transportation, and The Federal Railroad Administration. The survey collected information on household members age five and older.

A special section of the 1990 NPTS asked respondents about “longer trips” taken during a 14-day recall period. Longer trips were defined as trips that were 75 miles or longer one way and trips for which the respondent returned home during the 14-day travel period. Characteristics of longer trips were reported by Hu and Young (1993). The authors cautioned that results from the NPTS and the U.S. Travel Data Center survey are not directly comparable because of differences in how trips are defined (e.g., differences in trip length and whether outgoing and return trips are considered one or two trips). In addition, the NPTS includes journeys to work and trips taken by students to and from school, while the U.S. Travel Data Center survey does not. Finally, the trip-purpose categories in the two surveys are not identical.

Hu and Young (1993) found that travel by private vehicle (defined by the NPTS as including travel by automobile, passenger van, pickup truck, RV or motor home, motorcycle, and other) comprised 93.1 percent of all person-trips and 70.5 percent of all person-miles reported in the 1990 NPTS. Characteristics of travel by private vehicle, as reported in the NPTS, are summarized in Figures 6-10. Figure 6 indicates that trips of 200 miles or less, one-way, accounted for over two-thirds of all person-trips by private vehicle. As one would expect, trips of this length comprised a substantially smaller proportion of all person-miles (36.3 percent). Person-trips of more than 1,000 miles comprised about two percent of all private vehicle person-trips but 17.4 percent of all private vehicle person-miles.

Fig. 6. Percent of Person-Trips and Person-Miles by Trip Distance (1990)

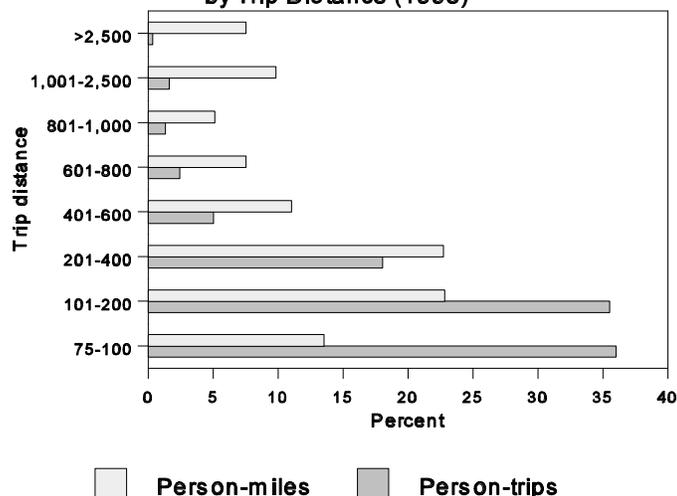


Figure 7 presents information on the purpose of travel by private vehicle. The NPTS considers the categories “vacation”, “visiting friends or relatives”, “pleasure driving”, and “other social or recreational” as all having a social or recreational trip purpose. Figure 7 indicates that travel for a social or recreational purpose is the most common purpose of travel by private vehicle (accounting for 70.6 percent of person-trips and 76.9 percent of person-miles). Visiting friends or relatives is the largest single component of both social or recreational travel and travel by private vehicle overall. Vacations comprised about 12 percent of all person-trips by private vehicle but 21 percent of all person-miles by private vehicle.

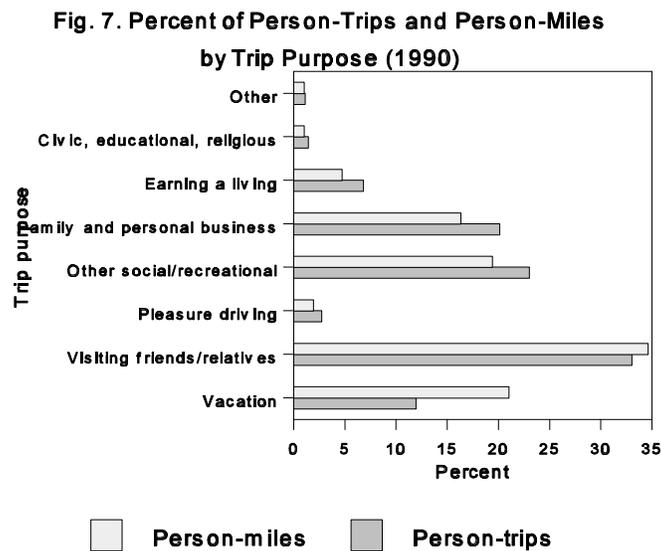
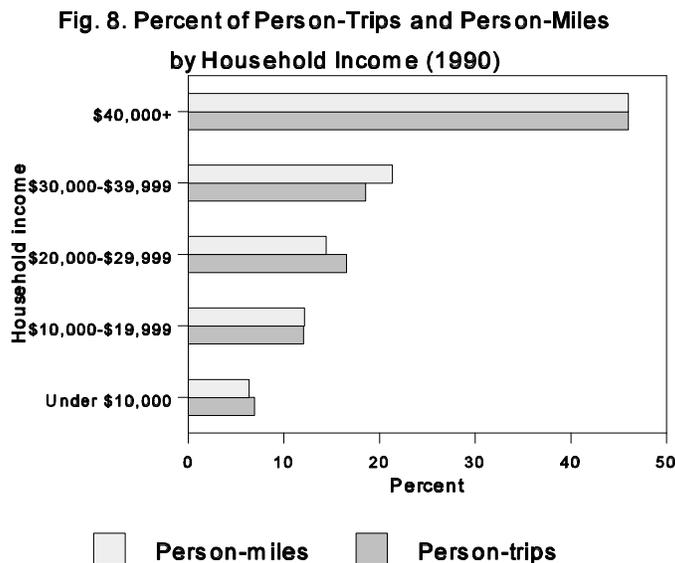
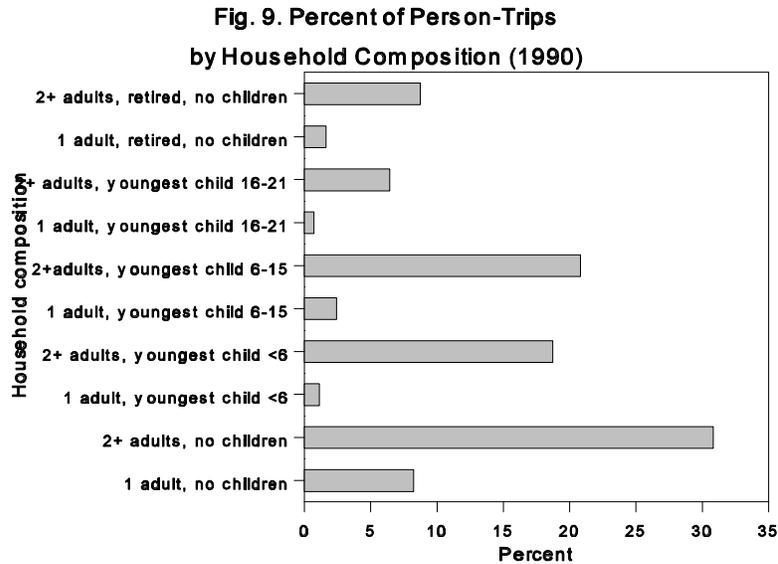


Figure 8 indicates that, for travel by private vehicle, households with incomes of \$40,000 or more accounted for almost half of all person-trips and person-miles (where household income was reported). Thus, those that are likely traveling for tourist purposes tend to be in the middle income or higher category. The proportions of person-trips and person-miles were similar by household income levels.

Figure 9 indicates that travel by two adults with no children accounted for the largest proportion of person-trips by private vehicle (30.8 percent). However, households comprised of two or more adults and a youngest child under age six or age six to fifteen accounted for 18.7 percent and 20.8 percent, respectively.



Collectively, these studies show the following characteristics of U.S. automobile travelers:



U 68 percent of long trips have a round trip distance of more than 300 miles.

U The most frequently reported trip duration is two to three nights.

U During these trips, more people report staying in hotels or motels than in any other single type of lodging.

U Most of these trips are classified as vacations or trips in which people visit friends or relatives.

U On two-thirds of reported trips, there are at least two people traveling together, most frequently two adults without children.

U Nearly one-half of travelers taking these trips have an annual household income of \$40,000 or more.

Older driving tourist

A significant area of growth within the travel and tourist market has been the older segment of the population--those age 55 and older (Javalgi, Thomas, and Rao, 1992). The 55 and older age group possesses a relatively large share of all discretionary dollars and evidence suggests that this population accounts for about 80 percent of all vacation dollars spent in the U.S., with members traveling more often, traveling longer distances, and staying away longer than any other age group (Shoemaker 1989).

Javalgi, Thomas, and Rao (1992) investigated the travel behavior of senior (age 55-64 and age 65 and older) and nonsenior (under age 55) pleasure travelers through analysis of data collected in a research project sponsored by Tourism Canada. The study focused on preferences, perceptions, and travel planning behavior of 9,000 U.S. pleasure travelers and was based on personal interviews conducted in 1985. The authors found a relationship between age and type of trip. In general, travelers under age 55 were more likely than other travelers to have taken a pleasure trip close to home, a city trip, an outdoor vacation, a resort vacation, and a trip to a theme park. Seniors were more likely to have taken a trip to visit friends and /or relatives, a touring vacation, or a cruise. The most popular means of transportation for all age groups was the automobile. However, preference for automobile travel decreased somewhat as age increased (73.7 percent of those under age 55, 65.4 percent of those age 55-64, and 58.3 percent of those age 65 and older reported traveling by automobile). Travel by either truck, van, or recreational vehicle was similar across the three age groups (9 percent, 10.6 percent, and 9.3 percent respectively). Collectively, these results suggest that senior tourists make an excellent target population for use of in-vehicle information devices.

Trends affecting tourism development

The travel and tourism market has been influenced by a number of societal trends. Goeldner (1992) described technological, environmental, demographic, global, lifestyle, health and safety, and congestion trends. These included: 1) explosive technological change resulting in increased linkages between the movement of people, information, and services

to telecommunications and transportation (e.g., central reservation systems, computer databases, advanced computer and communications systems, credit card technology, cellular phones); 2) increasing concern for the environment resulting in the proliferation of alternative approaches to mass tourism that seek to use tourism to preserve cultural practices and traditions rather than to exploit them; 3) continued presence of the babyboomer generation as the largest consumer group in the U.S. for another 20 to 30 years. Babyboomers accounted for 41.2 percent of all U.S. households and 48 percent of all trips in 1987, grew up traveling with their families, have fewer children at home and higher incomes than their parents, are familiar and comfortable with computer technology, and like to travel; 4) aging of the population resulting in a greater proportion of the population in retirement status and a tourism population comprised of a greater proportion of mature, physically active, healthy individuals seeking a greater level of adventure and physical challenge than in the past. At the same time, the needs of travelers who do suffer from physical debilities of aging (e.g., arthritis) will have to be accommodated; 5) increased buying power of foreign currency and rising affluence around the world leading to increased international visits, especially to the U.S., and an increasing global economy resulting in increased tourism; 6) move away from conformity toward individuality with positive effects on adventure tourism, nature tourism, and recreation participation activities; 7) continued desire by tourists to travel safely and comfortably; and 8) a trend toward more taxes and charging fees.

The U.S. Travel Data Center (1995) identified a number of positive economic developments in the U.S. that helped create favorable conditions for the travel industry in 1994. Among these were an increase in the Real Gross Domestic Product (after adjusting for inflation) increases in personal income and disposable income, and declines in the unemployment rate and the rate of inflation. At the same time, the cost of travel increased at a slower pace than did consumer prices overall. Results from the center's 1994 survey suggested that the travel industry benefited from this positive economic growth, with domestic travel expenditures increasing 4.9 percent from the previous year.

Smith (1992) sounded a more cautionary note in regard to the growth of international tourism. Citing an April 1992 *WTO News*, she noted that sustained growth will require the

opening of new markets in central and eastern Europe, more families with double incomes, an increase in earning power among babyboomers, and increased tourism from newly industrialized countries. On the other hand, a slowdown in growth may result from deepening economic recession among key generating nations including the U.S., continuing Persian Gulf and Middle East crises, and political disruptions. Smith concluded that there will probably be an increase in tourism into the U.S. from Asia (as Korea, Taiwan, Hong Kong, Singapore continue their industrial upswing), with some persons traveling for business or education, others to visit relatives, and quite a number as sightseers. Thus, while tourism may change and possibly decline on the international level, there will likely be increased domestic tourism both within the U.S. and Europe.

Tourism and the Tourist Role

I dislike feeling at home when I am abroad.
-George Bernard Shaw

Definitions of the tourist

A clean and precise definition of the tourist has not yet emerged from the literature on tourism (Pearce, 1982). A common starting point for defining the tourist has often been the dictionary (e.g., see Mathieson and Wall, 1982; Murphy, 1985). Websters International Dictionary defines tour as “a journey from which one returns to the starting point; a circular trip usually for business, pleasure, or education during which various places are visited and for which an itinerary is planned.” When tour is added to “ist” (tourist), the focus shifts to the one who is performing the action or undertaking the journey (Theobald, 1994). Accordingly, the Oxford English Dictionary defines tourist as “one who makes a tour or tours; especially one who does this for recreation; one who travels for pleasure or culture, one who visits a number of places for their objectives of interest, scenery, or the like.”

With the growth of tourism research, dictionary definitions have been expanded and have become more complex. Holecek and Herbowicz (1995) attributed the large number of definitions of tourism and the tourist not only to the multifaceted nature of the concepts, but also to measurement issues. They argued that when a theoretical definition conflicts with the realities of quantifying it, an alternative definition is developed to bring the definition and measurement into congruence. However, they noted that most definitions are still based on travel experience outside of one’s daily routine whose purpose is for pleasure. Theobald (1994) argued that two broad types of tourism definitions are generally recognized, each with its own rationale and intended use. Conceptual definitions are intended to provide a theoretical framework that identify the essential characteristics of tourism and what distinguishes it from similar, sometimes related, but different activities. Technical definitions provide tourism information for statistical or legislative purposes.

The definition of the tourist most widely recognized and used is from the 1963 United Nations Conference on Travel and Tourism that was adopted by the International Union of Official Travel Organizations in 1968 (Murphy, 1985). Conference participants recommended that the word visitor be adopted, with visitor defined as “any person visiting a country other than that in which he has his usual place of residence, for any reason other than following an occupation remunerated from within the country visited.” Two types of visitors were identified--tourists (temporary visitors staying at least 24 hours in the destination visited) and excursionists (temporary visitors staying less than 24 hours in the destination visited and not staying overnight). The definition was adapted to domestic travel by substituting region for country. The excursionist was viewed as a special tourist, who visited a destination for a day or spent some time there while passing through as part of a tour. In both cases, the excursionist was seen as a visitor, spending time and money while utilizing space and facilities in the destination area.

This definition was expanded as a result of an International Conference on Travel and Tourism Statistics held in 1991 to agree on approaches to standardize tourism terminology and industrial classifications as well as indicators of market growth, economic impact and overall industry development (Theobald, 1994). A key recommendation of conference participants was that tourism be defined as “the activities of a person traveling to a place outside his or her usual environment for less than a specified period of time and whose main purpose of travel is other than the exercise of an activity remunerated from within the place visited.” Tourism was further defined as “the activities of people traveling for leisure, business and other purposes to places outside their usual environment and staying for no more than one consecutive year.” These recommendations were accepted by the United Nations in 1993.

While most nations accept the definitions proposed in 1963 and later refined in 1991, the definitions are not always used in the actual measurement of tourism. In the U.S., definitions used by the federal government describe tourism data as part of trade statistics (Edgell, 1993). For example, tourism is included in the U.S. trade account as “business services”. Under “type of business services in international trade,” there is a separate

category referred to as “travel and transportation” with travel defined as services provided to U.S. citizens traveling abroad (U.S. imports) and international visitors to the U.S. (U.S. exports). Passenger transportation is defined as transportation provided by foreign carriers to U.S. residents for transportation abroad (U.S. imports) and by U.S. carriers to foreign residents (U.S. exports). Such classifications make inferences about tourist behavior difficult and provide little insight into domestic tourism.

Source	Term	Definition
1963 United Nations Conference on Travel and Tourism (adopted by the International Union of Official Travel Organizations)	Visitor	Any person visiting a country other than that in which he has his usual residence, for any reason other than following an occupation remunerated with the country visited.
	Tourist	Temporary visitor staying at least 24 hours in the destination visited.
	Excursionist	Temporary visitor staying less than 24 hours in the destination visited and not staying overnight.
1991 International Conference on Travel and Tourism Statistics (adopted by the United Nations in 1993)	Tourism	The activities of a person traveling to a place outside his or her usual environment for less than a specified period of time and whose main purpose of travel is other than the exercise of an activity remunerated from with the place visited. The activities of people traveling for leisure, business, and other purposes to places outside their usual environment and staying for no more than one consecutive year.
U.S. Trade Account (from Edgell, 1993)	Travel	Services provided to U.S. citizens traveling abroad and international visitors to the U.S..
	Passenger Transportation	Transportation provided by foreign carriers to U.S. residents for transportation abroad and by U.S. carriers to foreign residents.

Relationship between tourism, leisure, and recreation

Tourism has sometimes been viewed within the broader framework of leisure and recreation. Although distinctions between tourism, leisure, and recreation have often led to the development of separate strands of research, there is an increasing awareness of the linkages between the three phenomena (Shaw and Williams, 1994). Mathieson and Wall

(1982) described leisure as a measure of time--the discretionary time remaining after work, sleep, and necessary personal and household chores. Recreation, on the other hand, embraces the wide variety of activities that are undertaken during leisure. The authors viewed tourism as only one of a range of choices or styles of recreation expressed through travel. To them, tourism represents an evolutionary development in the use of leisure that provides an expanded opportunity for the exercise of choice in the selection of recreational activities.

Mathieson and Wall's (1982) conceptualization of the relationship between leisure, recreation, and tourism is shown in Figure 10. This model, however, seems too restrictive to cover all forms of tourism. For example, many people travel for educational or health reasons. Neither motive fits easily into leisure time, and therefore, cannot be considered tourism.

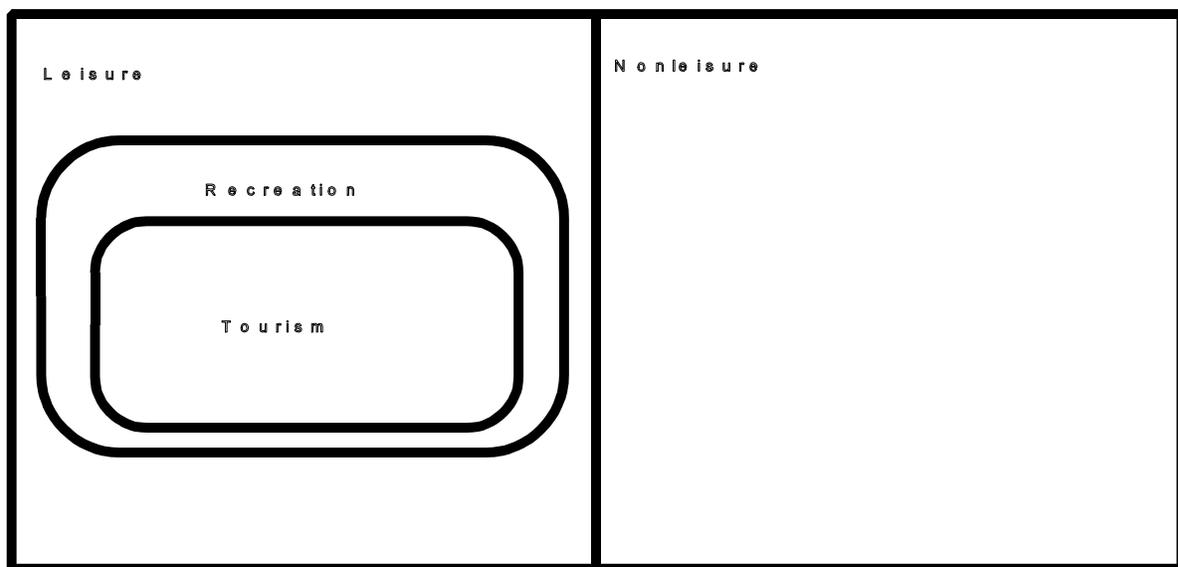


Figure 10

Murphy (1985) described the relationship between leisure, recreation, and tourism in a more encompassing way.

Murphy (1985) observed that because tourism involves travel, it requires greater blocks of discretionary time than much recreation activity, with tourism often occurring on weekends and during family vacations. He viewed recreation as falling entirely within the realm of leisure since it is an experience during free or discretionary time that leads to some form of

revitalization of the body and mind. In his view, the boundaries of tourism extend beyond recreation to encompass business trips and family reunions and extend beyond leisure itself into the personal and business motives for travel such as health and professional development.

Based upon Murphy's (1985) ideas about leisure, recreation, and tourism, we present a more general conceptualization of these concepts in Figure 11. As shown in this figure, the trip taken strictly for health purposes can be a tourist trip that occurs during leisure time but is not a recreational activity. Conversely, the business trip that occurs during nonleisure time can also be a tourist trip. This conceptualization is useful to consider when developing information systems for the tourist because business travelers and those who travel for non-recreational

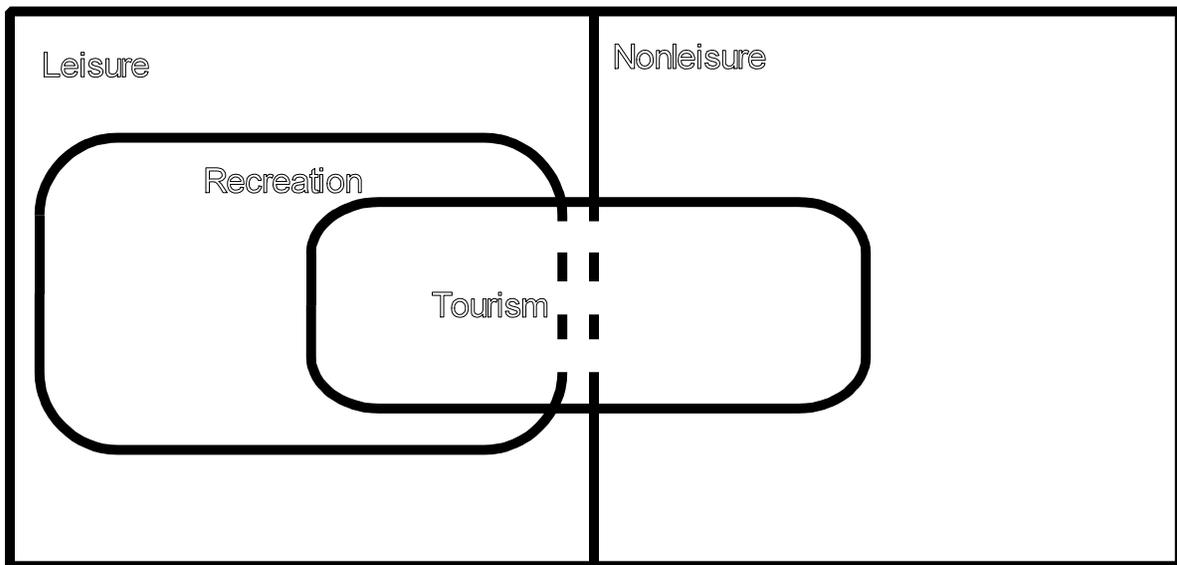


Figure 11

purposes utilize similar tourist facilities and have similar information needs as other tourists.

Recreation and tourism have been influenced by a number of leisure-related trends. Among these are a general increase in the amount of leisure time available since WWII (due to a decrease in the work week from 60 hours to 48 hours and then to 40 hours), the lengthening of paid vacations to two, three, four, or more weeks (due to personal preferences

and union demands), the increased availability of three-day holidays (due to a shift in the days of observance of several national holidays to Mondays), and the creation of a generation of youthful senior citizens for whom tourism is an important and recurring activity (due to early retirement and increased longevity; Smith, 1989). All of these trends have served to encourage tourist activity.

Relationship between disciplines that study tourism

Because of the multifaceted nature of tourism, as well as its links to leisure and recreation, the study of the tourist extends beyond the province of any single discipline. Theobald (1994) summarized the interests of a number of fields of study as they relate to tourism. He concluded that economists are concerned with tourism's contributions to the economy and economic development of a destination area, and focus on supply and demand, foreign exchange and balance of payments, and employment and other monetary factors. Sociologists and cultural anthropologists study the travel behavior of individuals and groups, and focus on the customs, habits, traditions, and lifestyles of both hosts and guests. Geographers are concerned with the spatial aspects of tourism, and study travel flows and locations, development dispersion, land use, and changes in the physical environment. Psychologists are concerned with the information needs, spatial and wayfinding abilities, and motivations of tourists. In addition to the fields identified by Theobald, there are also transportation researchers, concerned with the safe and efficient mobility of tourists.

Nash and Smith (1991) observed that while there is overlap between anthropology and other social science disciplines in the study of tourism, anthropology has a distinctive point of view. Anthropologists see tourism as an element of human culture and focus their study on the forces that generate tourists and tourism, the transactions between cultures or subcultures that are intrinsic parts of all tourism, and the consequences for cultures and their members. Because anthropologists view the world comparatively, their study of tourism is characterized by statements that permit comparisons between cultures at all levels of social complexity.

Graburn and Jafari (1991), in reviewing the development of tourism scholarship, noted its recency, with most studies on tourism having been undertaken since 1970 and perhaps half of them since 1980. They suggested that as the social sciences became fragmented, the study of tourism became more difficult, with most studies analyzing narrow aspects of tourism such as economic impacts, spatial movements, or psychological motivations. However, they identified two topics of continuing interest to most social science disciplines--the study of tourism impacts and related policy formation, and the study of representations in and of tourism, such as in advertising, photos and diaries, brochures, film, TV, and souvenirs. They also pointed out that, while marketing has remained focused on selling, promotion, and market segments, it is increasingly concerned with advertising and the psychology of motivation, topics also studied in sociology, anthropology, psychology, and leisure.

Tourism and the tourist are, from a research perspective, separate entities and the differing focuses across disciplines sometimes reflect this distinction. For example, Pearce (1982) noted that many economic studies focus on the economic well being of travel related industries, total tourist expenditures, the overall benefit of tourism, and tourist's financial capabilities, without focusing on tourists themselves. In contrast, sociologists attempt to explain reasons for tourist travel and the nature of tourists' travel experiences through development of conceptual frameworks and theoretical models.

Different approaches to the study of tourism are also found within a single discipline. For example, within sociology, there is consensus that the sociology of tourism must be understood within wider applied domains, yet discussion continues on whether it should be viewed from the perspective of the sociology of migration, the sociology of leisure, or travel (Dann and Cohen, 1991). Within many disciplines, the focus of tourism study has evolved over time. Within psychology, three distinct stages of psychological research have been suggested, including a demonstration phase showing that psychological studies of tourism are possible, a second phase consisting of studies to extend psychological knowledge and to understand tourist response and satisfaction, and a consultancy phase to change environment and social organization of tourist settings to enhance people's leisure and travel experiences (Pearce, 1987).

In reviewing the literature on tourism, it is important to understand the broader perspectives of the disciplines that have given rise to the conceptual and empirical work under study. At the same time, recognizing these differences helps to explain the broad array of definitions of tourism that have emerged--each intended in part to relate the concept of the tourist back to the field that initiated its study in order to address the particular concerns of that field.

Conceptualizations of tourism

Given the multidisciplinary nature of the study of tourism, as well as the complexity and dynamic nature of tourism itself, it is understandable that no single, universally accepted conceptualization of tourism has emerged in the literature. A detailed accounting of every conceptualization of tourism found in the literature is beyond the scope of this review; however, there are some common themes underlying many of the conceptualizations that can be explored.

Authenticity: One theme or concept that has been widely used to frame an understanding of tourism and the tourist role is that of authenticity. The first use of this concept in the tourist literature is generally attributed to MacCannell (e.g., 1973, 1976). He argued that all tourists seek authenticity, that is, the genuine, worthwhile and spontaneous experience of travel. However, in his view, the arrangements of tourist settings largely prevent tourists from achieving their authenticity goals. MacCannell examined the concept of authenticity within the framework of a theatrical performance, a perspective developed by Goffman (1959) to study social life. Goffman's perspective included notions of a front- stage, which MacCannell likened to inauthenticity, and a backstage, which he likened to authenticity.

MacCannell's concept of authenticity has since been expanded upon by a number of people. Cohen (1979a) added to MacCannell's approach a new emphasis on tourists' impressions of the scene. Cohen characterized situations by both the nature of the scene (real or staged) and the nature of tourists' impressions of the scene (real or staged). Based on this approach, a four-fold table of tourist situations was developed that includes, authentic

and recognized as such, failure to recognize contrived tourist space, suspicion of staging, and authenticity questioned and recognized as contrived tourist space.

In a later work, Cohen (1988) argued that authenticity is a socially constructed concept and its social connotation is therefore not given but negotiable. He concluded that tourists appear to seek authenticity in varying degrees of intensity depending on the importance they place on this concept; that is, individuals who are less concerned with the authenticity of their tourist experiences will be more willing to accept as authentic a cultural product or attraction that tourists more concerned with authenticity (and applying stricter criteria) will reject as contrived.

Pearce and Moscardo (1986) argued that neither MacCannell nor Cohen addressed the possibility that tourists can achieve authentic experiences through their relationships with the people in tourist settings (referred to as actors). In their view, authenticity can be achieved through environmental experiences, people-based experiences, or a combination of the two experiences. Thus, both the authenticity of the actors and their setting need to be defined when appraising a tourist scene. The authors classified tourist scenes into four types-- authentic people in an authentic environment (backstage people in backstage environment); authentic people in an inauthentic environment (backstage people in frontstage environment); inauthentic people in an inauthentic environment (frontstage people in frontstage environment); and inauthentic people in an authentic environment (frontstage people in backstage environment).

In a related work, Pearce and Moscardo (1985) used the concepts of authenticity and travel careers to explain tourists' experiences and behavior. The idea of travel careers suggests that there are different levels of tourist experience, with many individuals proceeding through lower levels of travel experiences before reaching higher levels of travel experience. Classification of travel career levels follows the five-level motivation scheme of Maslow (1954) and includes (from low to high), physiological needs, safety needs, belongingness and love needs, self-esteem needs, and self-actualization needs. The authors found that study subjects of higher career levels were more satisfied with holidays involving either authentic

environments, people, or both of these features than travelers of lower career levels. In addition, travelers at lower career levels did not differentiate holidays in terms of interdependence in the same way as did higher career level travelers who tended to find holidays involving staging to be less independent as well as less satisfying.

These findings suggest that the concept of authenticity should be considered in the development of in-vehicle information systems for the driving tourist. It is important for at least two reasons. First, because use of such a system becomes part of the tourist's actual travel experience, care must be taken so that the system is not perceived as providing inauthentic information. Such a perception would deter from a person's vacation experience and their likelihood of using the system on subsequent trips. Second, a properly designed system can facilitate the achievement of authenticity goals that tourists seem to want. Much research is still needed in order to determine how to provide information that will be perceived as authentic. Some examples might be having a native speaker as an electronic tour guide or providing recorded sounds of local fauna or festivals.

Change from routine/novelty: Another theme underlying attempts to understand tourism is that tourism represents a change from routine, something novel and extraordinary (Cohen, 1974). For example, Hummon (1988) conceptualized tourism as a social ritual that renews meaning and person through a structured, periodic break from everyday life. He argued that in contemporary American culture, tourist advertising serves as the cultural text that symbolically transforms ordinary places and times into extraordinary tourist worlds, by presenting tourist worlds as places of plenitude, nature, leisure, history, and paradise. He documented this symbolic presentation through a qualitative and quantitative analysis of verbal and visual imagery in the promotional literature of the 50 United States. Hummon's characterization of tourism as "a ritual break from ordinary reality marking out an extraordinary time and place that inverts the reality of everyday life," suggests a need by tourists to get away or escape from their everyday lives and society. In fact, one motivation for travel commonly cited in the literature is escape from an anomic society (Gitelson and Kerstetter, 1990).

The concept of the “tourist gaze” by Urry (1990, 1992) provides another example of the theme of tourism as a novel and extraordinary experience. To Urry, the tourist experience is characterized by gazing at or viewing the environment, hence the term the tourist gaze. In trying to bring out the visual nature of the tourist experience, Urry argued that it was the unique or unusual nature of visual sensations that placed other activities within a different frame. That is, it was the distinctiveness of the visual that gives to all sorts of activities a special or unique character. He emphasized that there has to be something distinctive to be gazed upon, something visually extraordinary. He outlined five distinct forms of the tourist gaze including romantic (solitary, sustained immersion involving vision, awe, aura), collective (communal activity, series of shared encounters, gazing at the familiar), spectatorial (communal activity, series of brief encounters, glancing and collecting different signs), environmental (collective organization, sustained and didactic, scanning to surveil and inspect), and anthropological (solitary, sustained immersion, scanning and active interpretation). Finally, he identified characteristics of the environment that make it unsuitable for visual consumption including visual contamination because matter is out of place, physical or social danger, lack of visual distinction, and historic inauthenticity.

This concept also has important implications for the development of in-vehicle information systems for the driving tourist. People want to see visually extraordinary things. This suggests that tourist information systems should have the capacity for high-quality, visual displays, capable of showing high-resolution photographs (or video) of the local area that highlight, for example, the five forms of tourist gaze suggested by Urry (1992).

Need fulfillment. Some conceptualizations of tourism represent the integration of several broader theories of human motivation and decision making. For example, Pearce (1982) argued that while no single prevailing theory of motivation can fully explain tourist behavior, a combination of Maslow’s hierarchical model and some features of attribution theory and achievement motivation, taken together, can facilitate an understanding of tourist motivation. Maslow’s model views human needs within a hierarchical framework based on the immediacy of the needs (Maslow, 1954). Five types of needs are identified by the model,

with the satisfaction of each successive need leading to the emergence and satisfaction of the next higher-level need. In order of fulfillment these needs are: physiological, safety, belongingness and love, self-esteem, and self-actualization. Pearce emphasized the need to integrate Maslow's approach with the recognition that both actor-observer differences (a feature of attribution theory) and long-term goals (a feature of achievement motivation) play important roles in explaining tourist behavior.

Classifications of tourist and travel roles

While conceptualizations of tourism provide a necessary framework for understanding tourist behavior, there is also a need to delineate the tourist role from related roles (Pearce, 1982). A number of classification schemes for travel and tourist roles have been advanced in the tourism literature. One difference among these classification schemes is the extent to which they are based on broader conceptual frameworks and what those frameworks are.

Cohen's five roles: Cohen (1979b) identified five types of tourist experiences based on the place and significance of the tourist experience in one's total world-view, the relationship of the experience to one's perceived spiritual center, and the location of that center in relation to the tourist's own society. Cohen described spiritual center as the center that symbolizes ultimate meaning for the individual (whether it be religious or cultural). He argued that modern mass tourism is characterized by an awakening of interest in the culture, social life, and natural environment of others, and thus represents a movement away from the spiritual center of one's own world toward the centers of other cultures and societies.

Cohen distinguished five main types or modes of tourist experience including recreational, diversionary, experiential, experimental, and existential. In his view, the recreational tourist experience is a form of entertainment, a means of getting away to restore physical and mental powers. Recreational tourists are similar to people attending a performance or participating in a game-their enjoyment of the trip is contingent on their willingness to accept the make believe or half seriously delude themselves. The diversionary tourist experience represents mere escape from boredom and the meaningless of routine and

everyday existence. It is similar to the recreational tourist experience except that it is not meaningful in any sense. The experiential tourist experience is characterized by tourists' search for meaning and authenticity outside of their own society. It is based on a view of modern man as alienated from his own society. Travelers in this mode are satisfied to observe the authenticity of others without engaging in it. In the experimental tourist experience, tourists are engaged in the authentic life of others outside of their society, but not to the point of becoming fully committed to it. In the existential tourist experience, travelers are fully committed to a spiritual center outside of their native society and culture, yet are unwilling or unable to move to that elective center, choosing instead to live in two worlds. Cohen argued that tourists may experience several modes on a single trip or change from one mode to another during their travel career.

The partial tourist. Cohen (1974) also explored the idea of partial tourist roles. He argued that, in addition to full-fledged tourism, there are many traveler roles that possess a tourist component. He tried to isolate this tourist component from a variety of traveler roles, using a "fuzzy set" approach, which allows estimates of the degree of membership of a role. He started by identifying six dimensions of the tourist role: 1) the tourist is a temporary traveler; 2) the tourist is a voluntary traveler; 3) the tourist is a traveler on a tour, a round trip, so that his point of departure is also his final destination; 4) the tourist is on a relatively long journey and not merely on a short trip or excursion, 5) the tourist is on a non-recurrent trip; and 6) the tourist is a traveler on a trip that is an end in itself rather than a means to another end. The central purpose of the tourist trip, and the aspect of the tourist role that delineates it from other travel roles, was, in Cohen's view, the expectation of pleasure from novelty or change. Building on these dimensions of the tourist role, the author identified several partial tourist roles including thermalists (people who take the waters at the spa), students, pilgrims, old-country visitors, conventioners, business travelers, tourist employees, and official sightseers.

The full-fledged tourist. Cohen (1974) observed that even the category of full-fledged tourism is not a homogeneous one. He made a distinction between two types of full-fledged tourists—"sightseers" and "vacationers," with the primary difference between them being that

sightseers seek novelty and vacationers only seek change, regardless of whether it leads to novelty.² This difference leads to differences in travel patterns. Sightseers are tourists in the more literal sense of the expression “making a tour,” in that they generally visit a variety of places on a single trip. Vacationers, on the other hand, generally visit only one destination on a single trip. Sightseers travel primarily to visit attractions (i.e., unique features of an area and the sights or experiences that are gratifying to visitors such as towns, natural sites, artistic treasures, and archeological sites). Vacationers are more oriented toward facilities and amenities such as good accommodations and food, pleasant beaches, mountain air, and opportunities for sports and amusement. Although sightseers and vacationers differ along several of Cohen’s tourist dimensions, he considered both to be full-fledged tourist roles.

Cohen’s classification scheme received the most favorable assessment of several tourist role classification schemes evaluated by Pearce (1982), based on criteria related to range of roles, role separation, index of role relatedness, and use of social/experiential criteria in separating roles. Pearce (1985) subsequently built on Cohen’s approach to tourist role definition, assessing 15 travel-related roles along 20 dimensions or constructs. The roles included tourist, traveler, holiday-maker, jet-setter, businessman, migrant, conservationist, explorer, missionary, overseas student, anthropologist, hippie, international athlete, overseas journalist, and religious pilgrim. Development of the dimensions was guided by a review of previous literature on socially and experientially based attributes of travel-related behaviors such as taking photos, having language problems, and contributing to the economy. For the tourist role, the five best defining criteria were found to be taking photos, buying souvenirs, going to famous places, staying briefly in one place, and not understanding the local people. Pearce also identified the five most applicable travel roles for each of the 20 dimensions. The tourist role was associated with the following role-related behaviors-taking photos, going to famous places, not understanding the local people, never really belonging, not taking physical risks, staying briefly in one place, having language problems, experimenting with local food, and buying souvenirs.

² Cohen emphasized that these are ideal types and that actual tourists often combine, to various degrees, the characteristics of both types.

Smith's five tourist roles: Some tourist-role classification schemes relate more to qualities of the activities being undertaken rather than characteristics of tourists. Smith (1989) identified five different types of tourism, defined in terms of the kinds of leisure travel undertaken. These included: 1) ethnic tourism (marketed to public in terms of the “quaint” customs of indigenous and often exotic peoples); 2) cultural tourism (including the “picturesque” or “local color”, a vestige of a vanishing lifestyle) ; 3) historical tourism (stressing the glories of the past); 4) environmental tourism (often ancillary to ethnic tourism for tourist to experience truly alien scene, primarily geographic); and 5) recreational tourism (often related to sand, sea, or sex).

Ecotourism: Another category of tourism based on tourist activities and styles of travel is ecotourism, also called green tourism, nature tourism, environmentally responsible travel, adventure tourism, sustained tourism, soft tourism, or low-impact tourism (Smith, 1992). Ecotourism provides an opportunity for travelers to learn about and appreciate the environment (Edgell, 1993). Holecek and Herbowicz (1995) noted that ecotourism has become a recent theme across travel and tourism’s marketing and professional literature. While the popularity of the ecotourism theme suggests that changes are occurring in the tourism market, the nature and implications of these changes are unclear, according to the authors. They concluded from recent supply and demand data that ecotourism has not yet produced significant shifts in either consumer tastes or product offerings and that it is unclear whether ecotourism is really something new or simply a relabeling of products traditionally referred to as natural-resources based tourism or outdoor recreation. In their view, ecotourism is likely rooted in increased global environmental awareness, and although it is now more of a literary construct, it may be the precursor of significant change for the travel and tourism industry in the future.

Cultural and heritage tourism: Hall and Zeppel (1990) explored the topic of cultural and heritage tourism as a source of alternative and sustained tourism development. They described cultural tourism as experiential tourism characterized by involvement in and stimulation by the performing arts, visual arts, and festivals. In their view, heritage tourism

(whether in the form of visiting preferred landscapes, historical sites, buildings, or monuments), is also experiential tourism in the sense that one seeks an encounter with nature or seeks the feeling of being part of the history of a place. They pointed to a growing trend in cultural tourism that includes not only ecomuseums but also an increasing emphasis on the provision of information and interpretation rather than just sites.

One criticism of tourist classifications based on types of activities is the assumption that tourists travel to destinations for a narrow range of specific reasons. Mathieson and Wall (1982), for example, pointed out that tourists may choose a destination for more than one reason and their behavior may not entirely reflect their initial travel motivations. They preferred Cohen's 1974 classification scheme, which in their view, recognizes that tourist experiences combine various degrees of novelty with the element of the familiar and the excitement of change, mixed with the security of accustomed habits. Thus it takes into account the importance of individual motivations and also recognizes that the extent to which familiarity and novelty is experienced is influenced by tourist preferences and the institutional setting of the trip.

Tourist roles and in-vehicle information systems: As the preceding discussion undoubtedly showed, there is little agreement about the number and types of tourist roles. There is, however, a clear indication that tourist roles are varied. This suggests that an in-vehicle information system for the driving tourist should be flexible enough or detailed enough to cover the various roles of the tourists who are likely to use the system; that is, the one-size-fits-all formula will likely be unsuccessful. For example, information systems might provide a listing of points-of-interest that people could scroll through and select from to find out more about particular places. The system should have points-of-interest that would appeal to the ecotourist, the cultural/heritage tourist, the recreational tourist, the diversionary tourist, the experiential tourist, the educational tourist, the existential tourist, and so on. In order to include information that would appeal to this wide variety of interests, the system would require a reasonably large storage capacity such as access to a CD-ROM.

Travel Motivation and Tourist Preferences

For my part, I travel not to go anywhere, but to go. I travel for travel sake. The great affair is to move.

-Robert Louis Stevenson

Tourists who are motivated to travel must make choices about where to go, how to get there, and what to do when they arrive. Thus, the study of tourist behavior encompasses at a minimum, travel motivation and tourist preferences about destination choice and destination activities, services, and other location features. Pearce (1982) examined travel motivation within a broader theoretical framework that combines Maslow's need hierarchy (discussed previously) with elements of attribution theory and achievement motivation. He used this framework in several ways. First, he reviewed historical accounts of tourists' reasons for travel, relating the primary motivations for travel identified in the review (i.e., travel for health, education, spiritual values, and self-indulgence) to his framework. In his view, travel for health corresponds to concerns with emotional and physical security, education travel corresponds to self-esteem needs, the quest for spiritual values has close links with self-actualization, and self-indulgent travel motives may be linked to the satisfaction of physiological needs and some love and belongingness needs. He also noted that motives such as self-esteem and achievement may not only be linked to rewards of the present activity and future outcomes but may be related specifically to perceived images of the past.

Second, he used his framework as the basis for evaluating selected market research studies on travel motivation and tourist preferences. He concluded that although the studies provide some insights into the behavior of tourists, they generally focus on attractions or features of travel destinations rather than the longer-term motivations of travelers (described as psychological, personal needs). Thus they serve essentially as profiles of perceived destination attractiveness. Given these limitations, he noted some study findings such as the

importance of visiting friends or relatives, finding a relaxing atmosphere, and seeking a good climate with beautiful scenery, as reasons for destination choice.

Pearce also conducted his own study of travel motivation, collecting information on 400 travel experiences from 200 tourists in the U.S., Europe, Canada, and the United Kingdom. A two-pronged sample, consisting of an experienced group of travelers from the American Travel Research Association and a less experienced travel group from a small class of Australian arts and social sciences students, was surveyed about its travel experiences, using an open-ended, written questionnaire format. Travel motivations were assessed indirectly by coding travel experiences into five categories corresponding to Maslow's hierarchy of needs. Pearce found that motivation for travel had properties of an approach-avoidance paradigm. Tourists were attracted to holiday destinations because of the possibility of fulfilling self-actualization, love and belongingness, and physiological needs (in that order). On the avoidance side, concern with safety was the predominant feature, with additional emphasis on failure to satisfy psychological needs, love and belongingness needs, and self-esteem needs. He also found that self-actualization incidents constituted a different category or type of tourist experience--one that is highly valued when it occurs, but one that cannot be directly manipulated by external factors.

The author also found relationships between the demographic characteristics of travelers and their motivation categories. He concluded that while tourists apparently find satisfaction in a range of settings and motivational categories, more experienced, older tourists place greater emphasis on self-actualization experiences. He suggested a link between self-actualization experiences and the authenticity approach to tourist environments. The differential effect of age should be considered when designing information systems for tourists.

Findings from a study of the reasons for pleasure travel (described as benefits sought) and their impact on subsequent trip behavior provide additional insight into travel motivation and tourist preferences (see Gitelson and Kerstetter, 1990). The study involved a written survey of individuals who had requested a 1984 travel information packet from the state of

North Carolina. Respondents were asked to rate the importance of 28 benefits of travel (identified through review of the literature and unstructured personal interviews). Factor analysis of the data resulted in four major benefit scales including, in order of importance, a relaxation scale (e.g., relax, experience solitude, get away from it all, get recharged, be able to do nothing, release tension, have privacy, escape from the routine, not have to rush), an explorer scale (e.g., learn new things, see interesting sights, explore new places, view scenery), a social scale (e.g., visit friends, share a familiar place with others, return to a favorite vacation site, do something with the family), and an excitement scale (e.g., do exciting things, be entertained, do a specific activity, experience luxury, be in control).

The authors found that the type of activities engaged in during respondents' travel to North Carolina was related to the benefits sought from travel. For example, individuals who fished, camped, or hiked rated the relaxation and social dimensions higher than those who did not engage in these activities. For the excitement dimension, only those who fished or visited an amusement park rated this dimension higher than other respondents. Individuals who played golf in the state during their visit rated the explorer dimension as less important than nongolfers, while respondents who visited a museum, camped, or went hiking during their visit rated the explorer dimension as more important than individuals who did not participate in these activities.

A relationship was also found between age and benefits sought from travel. For each dimension except the explorer dimension, the older the age group, the lower the rating given to the benefit dimension. The explorer dimension was the only one rated as important by older groups (and all groups). Females rated each dimension higher than males with all differences being statistically significant except for the excitement dimension. There were significant differences by composition of traveling party. Couples traveling alone rated the excitement and social dimensions lower than couples with children, or friends, and rated the explorer dimension lower than couples traveling with children. Ratings for the relaxation and social dimensions were higher among travelers who had stayed seven days or more on their vacation or who had vacationed previously in the state. Relaxation, excitement, and social

dimensions were also related to section of state visited (people visiting mountains rated relaxation and social high, while people visiting coastal areas rated excitement high).

The authors concluded that although sociodemographic variables have not been considered the most important segmentation variable in the consumer behavior literature, results of the study suggest a relationship between some of these variables and benefits sought from travel. Also, contrary to other literature, the authors did not find a linear relationship between age and the propensity to seek relaxing, familiar places. Instead, they found that travelers age 60-69 were the least likely to seek relaxation while travelers under age 30 were the most likely. Thus, a good target population for in-vehicle information devices would be the older driver. These findings also provide further evidence that designers of in-vehicle information systems should be sensitive to three important demographic variables: age, gender, and family size. Since all three variables have been shown to influence the types of benefits sought (and other elements of tourist satisfaction), information systems for the driving tourist might be set up so that users can get different types of information based upon user-supplied demographics.

Yuan and McDonald (1990) examined travel motivation and destination choice, using the concept of push and pull factors. They described push factors as those socio-psychological motives that predispose the individual to travel, and pull factors as those that attract the individual to a specific destination, once the decision to travel has been made. Push factors are internal to the individual, while pull factors result from attractions at the destination. The authors examined push and pull factors across four countries--France, Japan, West Germany, and UK, using personal interview data from a larger study conducted by the U.S. Travel and Tourism Administration and Tourism Canada in 1986. Five push factors were identified including escape, novelty, prestige, enhancement of kinship relationships, and relaxation/hobbies. Pull items included budget, culture and history, wilderness, ease of travel, cosmopolitan environment, facilities, and hunting. Differences found among the four countries were culturally defined. The authors concluded that although individuals may travel for similar reasons, reasons for choosing particular destinations and the level of importance attached to each factor may differ.

Um and Crompton (1992) focused on the process of destination choice by tourists. Their work built on earlier work by Crompton (1977) that the authors described as a two-stage model of tourist's destination choice, based on interaction between perceived situational variables (e.g., constraints such as time, money, availability) and destination image. Um and Crompton conceptualized destination choice as a three-stage sequential decision process, with the first and second stages resulting in the increasing reduction of an initial set of potential travel destinations that tourists believe they have the ability to visit within some defined time frame (e.g., one year). The final stage represents the selection of a single travel destination from the "short list" of destinations that resulted from the first two stages. They surveyed a convenience sample of 359 graduate students (using a self-administered questionnaire) to explore the role of perceived facilitators and inhibitors in destination choice. Facilitators were defined as destination attributes that help to satisfy tourist motives and inhibitors were defined as attributes that are not congruent with tourist motives.

Results of the study indicated that perceived facilitators play a significant role in predicting which destinations from the first stage will evolve to the second stage. However, in the final stage, it was the magnitude of perceived inhibitors that was the significant indicator of destination selection. Facilitators included a lot of fun, attractive natural environment, relaxation, and a wide variety of things to do. Inhibitors included high monetary cost, long time to get there, not absolutely safe, potential health problems, physically accessible only at certain times, and a vacation place where everybody goes. While the authors cautioned about generalizing results from such a small and nonrandom sample, they noted two implications suggested by the results. First, the results supported their conceptualization of destination choice as sequential. Second, the results were consistent with the idea that choice is a satisfying behavior that is constraint-driven rather than an optimizing behavior that is attribute driven.

Effects of trip characteristics on destination preferences

Many recent tourism studies have focused on how tourist perceptions about destination attractiveness and preferences for destination features are influenced by specific traveler and

trip characteristics. Hu and Ritchie (1993), for example, examined the effects of trip context on the overall attractiveness of a given travel destination. In their view, a tourist destination represents a package of facilities and services comprised of several multidimensional attributes that all contribute to its attractiveness to a particular individual in a given choice situation. The attractiveness of a travel destination reflects the perceptions travelers have about the destination's ability to satisfy their special vacation needs.

Hu and Ritchie explored how these perceptions differed across two choice contexts or purposes for travel: a recreational vacation and an educational vacation. A recreational vacation experience was described as one in which an individual is mainly interested in the opportunities and activities of physical and mental rest and refreshment. An educational vacation experience was described as one in which an individual is primarily interested in the opportunities and activities of learning about and experiencing a destination's local culture and the people's way of life. The authors surveyed 400 individuals in a large metropolitan area in western Canada (via telephone). The study used four destinations (Hawaii, Australia, France, and China) and 16 tourist attributes, chosen based on review of previous studies of destination attractiveness.

Findings indicated that the importance of most destination attributes varied significantly with the context of the vacation experience sought. For recreational vacations, scenery, climate, availability and quality of accommodations, and local people's attitudes were the attributes rated as most important to destination attractiveness. Shopping, festivals and special events, communication difficulty due to language barriers, and museums and cultural attractions were rated as the least important. For educational vacations, uniqueness of the local people's way of life, historical attractions, scenery, and local people's attitude toward tourists were rated as most important. The least important tourist attributes were shopping, sports and recreational opportunities, entertainment, and festivals and special events. The authors also found that the relative importance of most attributes was evaluated differentially across the two different types of vacation experiences. Finally, and quite importantly, the results confirmed other research findings that familiarity with a destination influences perceptions of destination attractiveness, in that people generally have more positive

impressions about destinations they have visited previously. An in-vehicle information system for the driving tourist could enhance the attractiveness of a destination by familiarizing travelers with an area prior to their visit.

Rao, Thomas, and Javalgi (1992) examined how tourist preferences for destination activities, services, and other features differed across six types of trips, through analysis of survey data collected by Tourism Canada. The survey was based on personal interviews with 9,000 American pleasure travelers considering travel to Canada, Mexico, the Caribbean Islands, and Europe. The survey defined six trip types including: 1) touring trip (a trip by car, bus, or train through areas of scenic beauty and cultural and general interest); 2) city trip (a journey to a city to shop, visit museums, enjoy entertainment, dine, attend plays or concerts, or just stroll around and enjoy the city); 3) outdoor trip (a trip to a natural area to engage in activities such as camping, hunting, fishing, hiking, or rafting); 4) resort trip (a journey to a resort or resort area where a wide variety of recreational activities, amenities, and facilities are available nearby or on the premises); 5) cruise (a trip on a cruise ship where one enjoys all on-board activities and planned stops at points of interest along the way); and 6) theme park/special event trip (a trip taken primarily for the purpose of visiting a major theme park, exhibition, or special event such a super bowl, world's fair, or Olympic Games). Survey respondents rated for each trip type the importance of several destination activities, services, and locational factors. Results indicated that preferences differed across trip type and destination; however, having predictable weather was the most important planning factor across all situations and eating was an important activity on most types of pleasure trips.

In a more narrowly focused study of the effects of trip characteristics, Mings and McHugh (1992) examined how spatial configurations of visitor routes to and from Yellowstone National Park were related to trip attributes and socioeconomic characteristics of travelers. A survey of 600 visitors to the park in August of 1986 identified four distinct patterns of visitor travel including a direct route, a partial orbit, a full orbit, and a fly-or-drive route. Direct routes accounted for 9.5 percent of all routes and included travelers who follow routes that are as nearly direct as highway availability will allow, with routes using the shortest distance possible and travelers tending to take no side trips. Partial orbits accounted for 11.2 percent of routes

and included visitors who travel a portion of their trip over a direct route until they reach the perimeter of the scenic mountain west, then orbit the region on a route that links them with an assortment of other scenic attractions. Full orbits accounted for 45.2 percent of routes and represented a completely circular route (with people exiting their hometown in one direction and returning via another) with a very wide array of scenic attractions being visited in their grand tour of the American West. Fly-or-drive routes accounted for 22.5 percent of routes and somewhat resembled partial orbits except that the direct leg of this trip type was flown in an airplane rather than driven over a highway. Thus, of the 600 visitors surveyed, over 90 percent spent a significant portion of their trip “looking around;” that is, touring and sightseeing.

Survey findings indicated that the most common trip purpose for all four types of travel routes was family vacation. Differences in educational attainment were found across route types with travelers using a fly-or-drive route having the highest levels of educational attainment and income. A total of 81.3 percent of all visitors surveyed indicated they were visiting other national parks in addition to Yellowstone; even among the direct route group, 61.4 percent had visited other parks. The authors concluded that few travel to Yellowstone exclusively, but instead combine a trip to Yellowstone with a tour of other western landmarks. These findings suggest there may be interest in in-vehicle information systems that provide “tours” for driving tourists, with information about theme-related sites within a defined geographic area.

Effects of traveler characteristics on destination preferences

Several studies have examined the effects of traveler characteristics on destination preferences. The effect of personal value systems on the importance ratings of vacation activities was the focus of a study by Madrigal and Kahle (1994). In their view, personal value systems serve to maintain consistent behavior when one or more values may be in conflict and therefore, reveal more about tourist preferences than individual values. The authors surveyed 394 English-speaking tourists visiting Scandinavia, using a self-administered questionnaire. Four mutually exclusive value systems were identified. The first was characterized by an external locus of control and included values related to sense of belonging, being well-

respected, and security. The second reflected an enjoyment or excitement domain that was personal in that it did not necessarily involve other people and included values related to fun, enjoyment, and excitement. The third represented an achievement domain that included values related to accomplishment and self-fulfillment. The fourth represented an egocentrism domain and included values related to self-respect and a lack of regard for warm relationships with others.

Survey results indicated differences between value systems and vacation activity preferences. For example, people who valued personal achievement and enjoyment or excitement also appeared to value outdoor activities. Individuals who valued personal achievement were less likely to define themselves ancestrally and therefore de-emphasized that aspect of travel behavior. The authors also found that although demographic differences existed across segments, personal value systems were generally better predictors of activity preferences.

The effects of race on perceptions of tourist destination attractiveness were examined by Philipp (1993), through in-person interviews with a stratified sample of 400 households in a middle-sized coastal metropolitan area. Subjects ranked three sets of photographs representing different types of destinations, interests, and cultural resources, from most attractive to least attractive. Black and white subjects were similar in terms of gender, age, income, and trips taken in the last year, but differed in terms of education and household size, with blacks having less education and larger household sizes than whites.

Overall, blacks and whites showed strong similarity in their rankings of tourist destinations, interests, and cultural resources, with a few significant differences. While natural-resource-based designations (i.e., rivers, beaches, mountains, lakes and farms) were ranked in the top five choices by both races, blacks were likely to rank photographs associated with wildlife recreation areas (i.e., mountains) significantly lower than whites. Blacks and whites shared most of the same tourism interests with one notable exception--historic villages were rated significantly lower by blacks than whites. Rankings of cultural resource attractions showed the most difference between races; however, the author noted

that differences in ratings of tribal costumes and historical music/dance might be attributable to the fact that subjects in the photographs were black.

Floyd, Shiner, McGuire, and Noe (1994) also studied race, but in relation to broader leisure preferences rather than tourist destination preferences, and within the context of class awareness (subjective class). Based on analysis of data from a telephone survey of a national probability sample of 1,607 U.S. adults, the authors found similarities in leisure preferences between blacks and whites who defined themselves as middle class. However, patterns of leisure preferences diverged among blacks and whites who defined themselves as poor or working class. The authors attributed this divergence, in part, to differences between black and white females of the poor or working class. While the focus of this study differed from Phillips (1993), the conclusions were similar, with Floyd, et. al. asserting that, overall, race does not appear to be strongly related to leisure preferences.

Tourist satisfaction

Hughes (1991) conceptualized tourist satisfaction as the degree of fit between tourists and their environment. In her view, optimal fit between tourists and their environment occurs when the attributes of the environment are congruent with tourists' beliefs, attitudes, and values. As the degree of fit increases, tourist satisfaction also increases. The author noted that, although most definitions of travel satisfaction refer to travel experience as a whole, recent studies suggest satisfaction is comprised of several dimensions including cost, quality of facilities, extent of commercialization, naturalness, and social relationships, relaxation, and customer service. In her view, assessing tourist satisfaction for separate aspects of travel experience is not only supported by the literature, but makes sense because travel experiences generally involve several independent components (e.g., actual travel, site visits, refreshment stops).

Hughes assessed travel satisfaction of a sample of 220 tourists on one-day guided tours of an aboriginal and islander community in North Queensland, using a two-part, self-administered questionnaire, with open-ended items. The first part was given before travel occurred to assess motives and expectations for travel. The second part was completed on

the return journey to assess satisfaction with the tour. Results of the survey suggested that the greater the disparity between expectations and actual travel experience, the greater the likelihood of dissatisfaction. The author found that tour guides' performance had considerable impact on tourists' evaluations of the guided tour; the ability of guides to effectively interact with the group, provide a commentary of interest, and ensure the smooth running of the tour emerged as vitally important components of the guiding role.

Pearce (1981) provided some insights into tourist satisfaction by looking at factors influencing day-to-day mood patterns of tourists visiting tropical islands in North Queensland. Based on entries in daily diaries kept by the tourists, he concluded that mood patterns of tourists may be attributable to shifts in activity patterns and health problems caused by environmental shock. Specifically, he found that negative moods were more frequent on the second and third days of tourist visits. He argued that this was due to environmental shock experienced by tourists (and manifesting itself through health problems documented in the study). Tourists appeared to increase the number of self-initiated activities over the course of their visit, corresponding to a recovery from their mood dips.

Tourist Health

Do not drink the water...

-Anonymous

Symptoms/pathology

Frequently travelers vacation for the health benefits vacations provide. However, vacations may sometimes have the opposite effect. Do travelers experience ill-health? This question has been investigated in several studies and collectively they report that the most common symptoms are general fatigue or weakness, motion sickness, headaches, fever, diarrhea, rashes, depression, and anxiety (e.g., Couch, 1990; Pruitt, 1987; Ruff, 1994; Tajima, Uematsu, Asukata, Yumamoto, Sasaki, and Hokari, 1991; Wright, Vogel, Sampson, Knapik, and Daniels, 1983). Many of these symptoms are widespread. Bryant et al. (1991) noted that 57.3 percent of their sample reported experiencing diarrhea during their trip, and that other typical symptoms were fever, rashes, and flu-like symptoms, heat-related complaints, malaria, and trauma. There are also reports that indicate some travelers experience more serious health problems during their trips. For example, Couch (1990) investigated autopsies over an 11-year period on the Hawaiian Island of Kauai and found that tourists were as much as nine times more likely to experience sudden cardiac death than were residents. While the total number of cases were low, these results suggest, as Couch (1990) points out, that the overrepresentation may be related to the stress of touring (such as that caused by disruption of circadian rhythms).

Onset/treatment

People clearly get sick on vacation. Interestingly, people report that they typically experience illness during the start of their trip rather than at the end. For example, in their study of travel across several time zones, Wright et al. (1983) reported that the majority of the eighty-one males studied experienced weakness, fatigue, headaches, and irritability within the first five days of the trip. Further, Beller and Schloss (1994) observed that 54.1 percent

of people in their study had some type of illness within two to six days of arrival at their destination, while 24.3 percent were sick within two days of their arrival. Many travelers who become ill utilize medical facilities. Bryant et al. (1991) reported that, of the nearly 300 tourists in their study, 57.3 percent experienced diarrhea with 11.9 percent of these travelers seeking medical diagnoses of the symptoms during their trip. An additional 51.8 percent required some self-treatment of the problem. In a recent report, Ruff (1994) stated that “tens of thousands” of travelers annually are likely to seek medical attention in Australia.

Information systems and health

It is possible that in-vehicle information systems may be able to lessen the risks of becoming ill and the potential effects of ill-health during a vacation. The prevalence of travel-related illness suggests that information about health service availability and the activities that may influence health at a specific destination is likely to be important to travelers. In fact, Bryant et al. (1991) suggested that the high rate of travel-related illness indicates a need for specific travel advice. In-vehicle information systems could provide information to tourists to help them find hospitals, pharmacies, and other local medical care facilities. In addition, such systems could provide information about business hours, costs, language-aid availability, and local health risks (e.g., purchasing meals from street-vendors), while being flexible enough to accommodate special populations such as the elderly or disabled travelers. Patterson, Patterson, Bia and Barry (1989) have found that elderly travelers need specialized information while traveling, including information about insurance coverage in other countries and techniques for avoiding contaminated food and water.

Collectively, these results show that in-vehicle information for the driving tourist could improve tourist health by helping travelers avoid unhealthful behaviors and situations and giving them better access to health care if they do become ill. At the very least, an in-vehicle information system should include health care information since many tourists seek this advice. While research needs to be conducted to determine if potential health problems negatively influence destination choice, it is possible that access to region-specific health information could improve the desirability of a region.

Social and Cultural Impacts of Tourism

To travel is to discover that everyone is
wrong about other countries.

-Aldous Huxley

Studies of the social and cultural impacts of tourism tend to focus on the negative consequences of tourist-host encounters. Many of the conditions that give rise to these negative consequences are inherent in the nature of tourist-host encounters, including transitory contact, opportunity for exploitation, and considerable cultural differences between tourists and their hosts (Pearce, 1982). Sutton (1967) identified those socio-cultural attributes of tourists and hosts that foster understanding and those that lead to friction and mistrust. In his view, positive encounters can be facilitated by tourists' needs for information, guidance, and help, by host's competence in providing these things, and by tolerance from both parties. Negative encounters, on the other hand, are associated with the desire for immediate gratification by both tourists and hosts, and development of suspicion and mistrust from cultural misunderstandings and misplaced attributions from one group to the other.

Much of the research on the social interactions between tourists and hosts has focused on the implications of such interactions for the host community. For example, Jafari, Pizam, and Przeclaeski (1990) summarized major findings from a comprehensive international research project initiated in 1982 to investigate the sociocultural influences of tourism on host communities, with support from the Vienna Centre, an affiliated agency for the United Nations. Seven countries including Bulgaria, Hungary, Poland, Spain, United Kingdom, U.S., and Yugoslavia participated in the study, with each country conducting its own national survey.

Findings related to tourism impacts indicated that, overall, respondents were supportive of their tourism industries, with Americans being the most supportive. This support, however, did not translate into support for increasing the numbers of tourists. All countries except Yugoslavia preferred the tourist populations to remain at current levels. Tourism was

perceived to have positive impacts on employment opportunities, income, and standard of living. In terms of social factors, tourism was perceived to have neither positive or negative impacts. Most respondents perceived some differences between themselves and tourists and although they did not perceive tourist jobs to have a lot of status, a majority expressed willingness to work in the tourist industry.

Findings also indicated that respondents shared the view that some social phenomena and relationships within their communities were changing. They perceived some positive values such as honesty, friendliness, sincerity, and confidence to be decreasing, while other phenomena such as theft, alcoholism, and openness to sexual behavior were increasing. However, such changes were not perceived to be as great in the U.S. as in some other countries. In all countries, there was a clear awareness of the need to preserve customs and traditions.

One of the most basic yet widely used frameworks for describing the impacts of tourists on the host community is Doxey's "index of irritation" (Shaw and Williams, 1994). This index represents the changing attitudes of the host community based on a linear sequence of increasing irritation as tourist numbers grow, with hosts passing through stages of euphoria, apathy, irritation, antagonism, and loss in the face of tourist development. The progression through this sequence is determined by how compatible tourists and hosts are in terms of culture, economic status, race and nationality, as well as by the sheer numbers of tourists (Turner and Ash, 1975).

Pearce, Moscardo, and Ross (1991) reviewed another stage or step model developed by Smith (1989) that describes the development of tourism in terms of seven distinct waves of tourist types, with each successive wave having greater community impact. The seven types include (from lowest to highest impact) the explorer, the elite, the off-beat, the unusual, the incipient mass, the mass, and the charter tourist. The authors noted that criticism of stage or step models, in general, centers on the poor differentiation between stages or steps, and unresolved questions about whether more than one stage can exist simultaneously, whether the order of the stages can vary, whether speed of progression through the stages affects the

outcome, and whether the process is inevitable, leaving community members powerless to confront the forces of economic change and gain.

They also reviewed what they called segmentation approaches used to study tourism's social impact that emerged in the 1980s and are characterized by detailed descriptions of resident reactions to impacts of tourism. In these approaches, lists of critical social impacts are constructed, factor analyzed, employed in different countries, and related to the demographic characteristics of respondents. Findings common to many of these studies are that older residents are more affected by tourism impacts than younger residents; those working in the tourist industry have more positive attitudes, and those living closer to tourist zones have more negative attitudes towards tourism, as do those individuals with higher daily contact with tourists.

The authors advanced a new model for understanding social impacts of tourism they refer to as a joint equity-social representational view of tourism. In their approach, resident reactions to tourism development depend largely on a cost-benefit style accounting of the effects of tourism, as experienced by the residents. Residents experiencing only the costs of tourism (the negative impacts) will be predisposed to see tourism as an "environment destroyer," "just for the rich," or "taking over our town." Where costs and benefits are more balanced for residents, they will be predisposed to see tourism as "dangerous, needs managing" or "okay, if controlled." For residents whose personal gains outweigh costs, tourism will be seen as "our future," "town savior," or "tomorrow's industry." The authors tested this model through an interview survey of residents of Cairns, Queensland, in Australia. They found support for the proposed relationship between perceived equity in terms of tourism costs and benefits and reactions to tourist development.

Shaw and Williams (1994) noted that social and cultural impacts of tourism are not always easy to separate from other modernizing influences but appear to be centered in several broad areas including social change, language, health, religion, moral behavior, nonmaterial customs, and physical products. While research on some of these impacts has been limited (e.g., language), the authors found considerable and growing attention to the

moral changes attributed to tourism, particularly increases in crime, gambling, and prostitution (e.g., Pizam and Pokela, 1988; Walmsley, Boslovic, and Pigram, 1983).

Relatively few studies have examined tourist-host encounters from the perspective of the tourist. However, on a popular level, there is a vast literature of guidebooks concerned with how travelers should behave in, think about, and interpret other cultures (Pearce, 1982). Most of these guidebooks recommend behavioral conformity by tourists when they are confronted with new cultural norms. Pearce (1982) noted that, in practical terms this often means that tourists may have to change their clothing style, eating habits, sleeping times and even topics of conversation so as not offend their hosts. There are also attempts to introduce guide book users to new ways of thinking about and interpreting other cultures. The author argued that better quality detailed popular information concerning cross culture differences is needed especially because it is often small incidents of impolite and inappropriate behavior that heighten tourist-host friction. Thus, an in-vehicle information system that contained information about local customs and norms could reduce the negative impacts of tourism by providing the driving tourist with timely and appropriate, culture-specific information.

Tourist Information Use and Preferences

So it is in traveling, a man must carry
knowledge with him if he would bring home
knowledge.

-Boswell

The travel behavior of tourists, particular driving tourists, extends far beyond making choices about travel destinations. For the driving tourist, traveling to and from destinations, once those destinations are chosen, requires active and continued engagement. The process “of figuring out how to get from one place to another, of remaining oriented while driving to a goal” is referred to as wayfinding and is an integral component of driving for tourist purposes (Petchenik, 1989). What allows us to wayfind in a reasonable and sure fashion is our spatial knowledge combined with our ability to make use of external sources of spatial information (Wallace and Streff, 1993a). This movement constitutes our travel behavior and represents an important aspect of our overall spatial behavior. Other important aspects of spatial behavior include maintaining our bearings and the acquisition and mental manipulation of spatial information.

In an effort by the University of Michigan Transportation Research Institute (UMTRI) to improve the knowledge base concerning travel behavior, particularly driver information use and preferences, an in-depth review of the literature was conducted on spatial behavior, route choice, and the use of traveler information. This review resulted in two reports, one published by Streff, Wallace, and Underwood (1992), the other unpublished. As another part of this effort, a mail survey of drivers throughout Michigan was also conducted in order to gather data on travel behavior. Survey respondents were chosen at random from the list of drivers insured by AAA Michigan, the state’s largest automobile insurer. The survey was completed and returned by 2,764 respondents. The remainder of this section focuses on findings from the literature review and survey, as they relate to information use and preferences of drivers, especially driving tourists.

Route choice

An important finding from the review of the literature on route choice was that although travel time is an important criterion for route choice across all types of driving trips, other considerations come into play as well, especially for trips characterized by tourism-related purposes (e.g., recreational trips; Molnar, 1992). For such trips, factors like enjoyment of scenery, safety, and personal convenience also appear to affect route choice decisions. Route choice is not only determined by drivers' choice criteria, but also by drivers' ability to measure route characteristics. That is, even when drivers' share the same route choice criteria, they may be unable to accurately measure route characteristics (e.g., distance), resulting in different route choices. This finding points to the important role that route information can play in enabling travelers to choose routes that best satisfy their travel objectives.

These findings are important in the development of in-vehicle information systems for the driving tourist that provide navigation assistance. Typically, in-vehicle navigation systems direct a driver to a desired destination via a shortest-path route; that is, a route that either minimizes the distance traveled or travel time. These so-called optimal routes may not be optimal for the driving tourist who may wish to view scenic or historic areas, avoid a dangerous section of a city, or stay off of an interstate. Further research on preferred routes for tourist trips is needed.

Spatial behavior

Route choice is just one element of the much broader area of spatial behavior. Review of the literature on spatial behavior suggests that individuals vary greatly in their spatial abilities and preferences, and that different spatial tasks are aided most by task-specific styles of information provision (Streff, Wallace, and Underwood, 1992). The literature provides insights into what forms of information provision are best in real circumstances. For example, it appears that some spatial tasks such as route following (i.e., getting from point A to point B) may be best accomplished through linear, verbal means rather than pictorial means. However, for non-navigational spatial tasks (i.e., determining where one is in relation

to the overall geography of a city), the pictorial provision of information appears to be best. At the same time, differences in individual preferences suggest that even information designed to support a specific task probably should be available in different formats, even when one format appears to be superior for a certain function. This suggests that in-vehicle information systems would best serve the driving tourist if they included information in both verbal and pictorial formats. Another important finding in the literature is that some spatial learning tasks require effortful processing (i.e., they are not triggered automatically but require substantial capacity and intent).

Map use and wayfinding

Maps are the traditional supplement to our internal spatial knowledge and often serve to assist spatial behavior especially when driving on vacation (Streff, Wallace, and Underwood, 1992). Findings from the UMTRI survey concerning map use and wayfinding were reported by Streff and Wallace (1993), within the context of the literature review on spatial behavior. Although the overall survey actually consisted of three related surveys, each concerned with a different type of driving trip (a commuting trip, a noncommuting trip in a familiar environment, and a trip in an unfamiliar environment), the findings reported were based on questions that, with few exceptions, were the same on all surveys.

Survey findings indicated infrequent use of standard road maps by drivers, consistent with findings from the literature review. More than 75 percent of respondents reported using a road map once or less every two to six months. Most respondents found road maps either very or somewhat easy to use. Nonetheless, when asked what problems they experienced using maps, the majority mentioned at least one. Respondents expressed a clear preference for using more than just a road map when driving to an unfamiliar area, with respondents preferring to have available some combination of maps, verbal instructions, and written instructions. Respondents reported confidence in finding desired destinations, but expressed greater confidence in finding destinations in familiar areas than unfamiliar areas.

Again, these findings have clear implications for the development of in-vehicle information systems for the driving tourist. People report that they use maps in unfamiliar areas (such as those areas that they might visit on vacation), many people report difficulty with map use, and people prefer combinations of information types. This implies that an in-vehicle navigation system might have a higher likelihood of user acceptance and commercial success if it provided both a map and verbal instructions.

Traffic information

Several survey items focused on current use of traffic information sources by drivers, particularly broadcast sources such as commercial radio. Findings indicated that respondents consult a wide variety of information sources, that many use more than one source, and that less than one percent do not use any of the sources identified in the survey. Respondents had a relatively good impression of current trip and traffic information sources-- such sources were found to be helpful, convenient, and accurate. Nonetheless, several perceived drawbacks in current sources were revealed. First, nearly 20 percent (30 percent when asked specifically about broadcast traffic information) of respondents expressed the opinion that current sources do not provide timely information. Second, while revealing few differences by trip type, the survey did indicate that drivers in unfamiliar areas may not know where to turn for traffic information and, due to a lack of knowledge of the area, may be unable to apply the information even when it is available and accessed. Thus, a potentially useful and needed type of information for the driving tourist is traffic information.

Route diversion

Survey findings related to drivers' preferences for traveler information in support of route diversion decisions were reported by Wallace and Streff (1993b). Respondents were asked to rate the importance of 33 considerations, or information "bits" in their diversion decisions. Ratings were done on a scale of one to five, with one being "not at all important," two being "not very important," three being "important," four being "very important," and five being "extremely important." The authors noted that most of the information bits could readily be included in an in-vehicle information system designed to provide travelers with timely and

accurate information about relevant travel conditions. Findings indicated that a major difference between trips in unfamiliar areas and other types of trips was the importance given to the information bit “availability of directions for the alternate route,” suggesting that, for drivers in an unfamiliar area, information items such as congestion levels and travel times are not sufficient for making diversion decisions. Lacking adequate directions for traveling to and along an alternate route, drivers in unfamiliar areas may choose to remain on the current congested route.

Implications for in-vehicle information systems

One focus of UMTRI’s research program was to provide insights into what drivers may find attractive about information systems, such as Advanced Traveler Information Systems (ATIS) and what these systems may need to offer in order to attract users. Several implications for the development of ATIS were identified as a result of the literature review on spatial behavior by Streff, Wallace, and Underwood (1992). First, because of the wide range of spatial abilities, knowledge, and behaviors of the general population, no single technological approach for ATIS development is likely to satisfy the needs and wants of everyone. Rather, as mentioned previously, systems with multiple options for providing traveler information appear to have an edge over systems designed with only one information source (e.g., electronic map display). Second, because the best way to provide spatial information depends to a large extent on the spatial task for which it is intended, the most useful ATIS must be flexible enough to offer information in a variety of formats, enabling users to choose the preferred format at any given time. Third, because some spatial learning tasks require effortful processing, design of ATIS must address potential safety concerns. Finally, despite a broad array of studies investigating map use and map learning, the authors pointed out that the average person rarely consults a map. Thus it is unclear how much drivers would be willing to pay for a map-based navigational system.

Streff and Wallace (1993) identified several implications for the design and deployment of ATIS, based on survey findings related to map use and wayfinding, and traffic information. First, to attract customers, ATIS must provide functionality above and beyond that provided

by standard road maps. Second, maps, paper, or electronic display are not the public's preferred means of receiving route-guidance information. ATIS that includes text or voice supplements appear to be more attractive options for this function. Third, when traveling in unfamiliar areas, many drivers do not know where to turn for traffic or trip information, and, even if such information were available, they may not possess sufficient spatial information of the area to act on it. Fourth, individual and group differences abound regarding the use and preferences for traveler information. Both public and private entities are ill-advised to narrow prematurely their conceptions of who ATIS users will be.

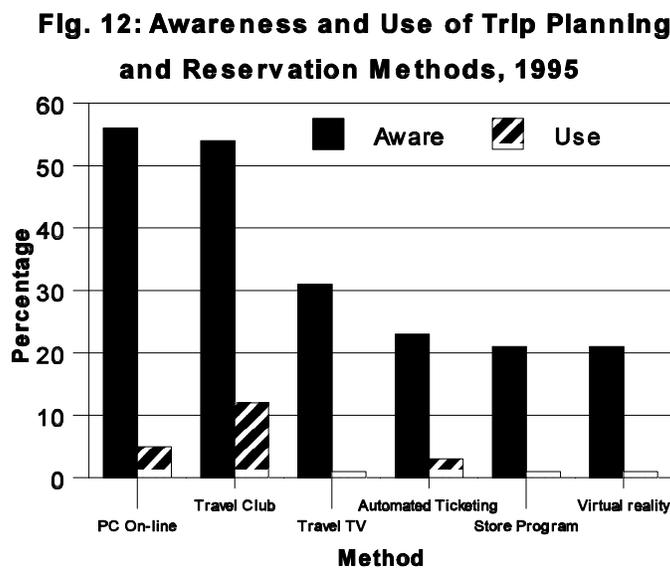
Wallace and Streff (1993b) also identified implications for the development and deployment of ATIS, based on survey findings related to drivers' preferences for traveler information in support of route diversion decisions. In unfamiliar areas, drivers have a pressing need for route-guidance information, while for other types of trips, information about route characteristics may be sufficient. Drivers in unfamiliar areas, while having need of the most information, are also the slowest to react to a delay situation. Because of the wide range of information required by different users, the authors argue that the utility of ATIS products will be maximized to the extent that users can customize their systems (e. g., through interaction between the user and the system).

Use of technology for travel

The success of any new technology for consumer use rests largely on whether people use the system. As with much technology, including the personal computer, a person's use of technology is based upon their perception of its utility and its ease of operation. An in-vehicle tourist information system is, for all intents and purposes, an onboard computer. How comfortable are travelers with various travel technologies and how frequently do they use them?

This question was investigated as part of the National Travel Survey conducted by the U.S. Travel Data Center (reported in Cook, 1995) . In this survey, 1,500 U.S. adults from the general population were asked about their awareness of and use of various ways to plan trips

and make vacation reservations. As shown in Figure 12, the highest percentage of respondents (56 percent) knew that travel plans could be made through on-line computer sources (such as America On-Line, CompuServe, and similar Internet and on-line providers). Twenty-one percent were aware that plans could be made through a virtual reality system. This is surprising, because the application of virtual reality to trip planning is relatively new (e.g., see Hobson & Williams, 1995) and those surveyed were not necessarily frequent travelers. Figure 12 also shows that only a small percentage of respondents actually have

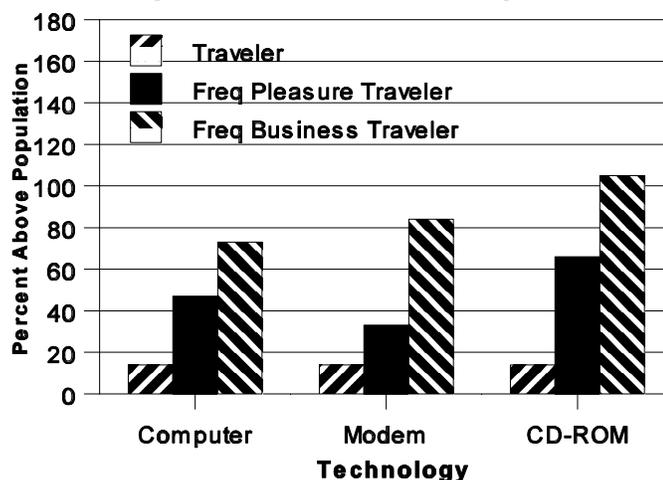


used the various trip-planning methods, with 12 percent using travel clubs and 5 percent using on-line services. These use results, however, may not be so bleak. Respondents were also asked about the chances for using these various trip-

planning and reservation methods in the future and 23 percent indicated that they might use on-line services and 19 percent indicated they might use virtual reality.

In the same survey, respondents were asked about their ownership of various electronic technologies. Cook (1995) separated out the results by whether a person takes one to four trips a year (traveler), five or more business trips a year (frequent business traveler), or five or more pleasure trips a year (frequent pleasure traveler). It is not clear how those who take both five or more business *and* pleasure trips a year were classified. Cook compared these results to the general population by calculating the percentage difference of each category from the general population. These results are shown in Figure 13. As can be seen in this Figure, all types of travelers more frequently own computer equipment than do the general population. For example, 14 percent more travelers, 47 percent more frequent pleasure travelers, and 73 percent more frequent business travelers own personal computers than do the general population. The results and trends are even more impressive for ownership of modems and CD-ROMs. Clearly, travelers of all types are more familiar with computer equipment than the general population. Cook (1995) also investigated the demographics of those travelers who reported owning computer technology and found that about 71 percent were married, 32 percent were between age 18 and 34, 54 percent were between ages 35 and 54, 14 percent were age 55 or older, and 34 percent had an annual income greater than \$74,999.

Fig. 13: Traveler Ownership of Technology Compared to the General Population



The results from the U.S. Travel Data Center show that travelers are interested in new

ways to plan trips and are already more familiar with electronic technology than non-travelers.

These findings suggest that in-vehicle information systems for tourists will have a high likelihood for success since the target market is already comfortable with and using this type of technology. In fact, based upon these results, Cook concluded that, "It is clear that travelers--especially frequent pleasure or frequent business travelers--are a very important segment for computer-related hardware and services. If I were selling these things, this is certainly a group I would target." (Cook, 1995, pg. 9).

Scenic Byways

Whenever you can make your journey by
land, do not make it by sea.

-Apostolus

As the name implies, the driving tourist utilizes roadways. Scattered across the U.S. is a set of roadways that are particularly appropriate for travel by those using an in-vehicle information device for tourist purposes--the Scenic Byway System. Both the Federal Highway Administration (FHWA) and the American Automobile Association (AAA) have designated several roadway segments as Scenic Byways. According to the AAA designation scheme, these byways are tourist destinations because they contain either *quintessential scenery* (i.e., best of the characteristic features or scenery of a region or state), *natural beauty* (i.e., striking scenic natural features such as canyons, rivers, or forests), *cultural beauty* (i.e., significant architectural, historical, or economic activities such as farming, fishing or ranching), or *uniqueness* (i.e., an interesting feature that can be found only in that corridor). The FHWA, through the National Scenic Byways Program, allows states to set the criteria for designation.

In 1990, there was a total of 34,757 miles of National Scenic Byway (with another 16,761 miles under consideration) and 30,340 miles of AAA Scenic Byway (FHWA, 1991). Collectively, these byways account for roughly 1.5 percent of all public roadways in the United States. Considering only the designated National Scenic Byway system, approximately 17 percent feature water, 19 percent feature vegetation, 17 percent feature topography, 12 percent feature urban scenes, 17 percent feature culture, and 17 percent feature wildlife (FHWA, 1990). About 95 percent of these scenic byways are either two or four lane roads, about 93 percent are paved, and approximately 87 percent have no vehicle or seasonal restrictions. These same byways are well equipped for supporting tourism. Approximately 20,000 miles offer rest-stops, pullouts, signing, camping, lodging, restaurants, and gas stations, 13,000 miles offer hiking trails, and 8,000 miles offer biking trails (FHWA, 1990).

Scenic byways are excellent locations for the implementation and testing of in-vehicle information systems for the driving tourist for several reasons. First, they can be found in nearly every state and are quite extensive in length. Second, by designation, they are tourist locations in which driving is of primary importance. Third, because they are limited to single corridors, the evaluation of an information system to be used in an area can be easily isolated to the corridor. Fourth, scenic byways may be particularly amenable to certain types of systems, such as an in-vehicle device that could be rented from a AAA office or local establishment with a CD-ROM containing the information for a specific scenic byway.

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