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INDEPENDENT BICYCLE TOURISM: 
A WHOLE TOURISM SYSTEMS PERSPECTIVE

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Leiper’s model of whole tourism systems is a useful conceptual framework for generic research into tourism. However, several limitations can be identified regarding its capacity to describe elements that comprise whole tourism systems involving independent bicycle tourism. This article draws on a combination of empirical evidence, existing literature, and critical analysis to demonstrate how two geographic elements of whole tourism systems, transit routes and tourist destination regions, can be reconceptualized to better reflect tourist flows associated with independent bicycle tourism. It is suggested that for independent bicycle tourists, the concept of a destination is multidimensional. Furthermore, two distinct transit routes used by such tourists are identified. An adapted model of whole tourism systems specific to independent bicycle tourism is proposed and implications for theory and practice are discussed as are avenues for future research.

Key words: Bicycle tourism; Whole tourism systems; Special interest tourism

Introduction

Although it has been frequently cited since being first proposed in the late 1970s, no previous studies have considered the applicability of Neil Leiper’s (2004) model of whole tourism systems when it is applied to less conventional forms of travel, such as bicycle tourism. Two geographic elements of Leiper’s (2004) model in light of independent bicycle tourism are considered here: transit routes, and tourist destination regions. This article firstly aims to highlight limitations of Leiper’s model of whole tourism systems in articulating the tourist flows, and roles served by tourist destination regions and transit routes when applied to independent bicycle tourism. Secondly, the article proposes an adapted model of whole tourism systems specific to independent bicycle tourism and in doing so discusses the implications of the adapted model for the planning and management of initiatives aimed at attracting independent bicycle tourists to a region.

Background

A common means of studying tourism is a systems approach. Scholars began applying systems
theory to tourism in the 1970s, resulting in the emergence of several tourism models underpinned by systems theory. Systems “thinking” refers to the practice of looking at complex phenomena in a holistic and cohesive manner. Using a systems approach, consideration is given to how the elements making up a complex phenomenon function together as a system. Meanwhile, systems “theory” formalizes systems thinking into a discipline aimed at facilitating a coherent body of knowledge regarding the study of systems (Leiper, 2000b).

Systems theory emerged during the 1930s as a successor to the “mechanist” approach to understanding complex phenomena (Flood & Jackson, 1991; Leiper, 2004). The mechanist approach became recognized as problematic because it analyzes elements in isolation. Systems theory overcame this limitation by advocating the analysis of connectivity between elements in complex phenomena (Hall, 2000). Furthermore, systems theory distinguishes between open and closed systems. An open system interacts with the environment(s) in which it exists (Skyttnner, 2001). Closed systems exist in a state of constant equilibrium due to the absence of material flows in and out of the system (Bertalanffy, 1972).

Models relating to the study of tourism can be categorized as process models or theoretical models (Getz, 1986). Process models articulate planning and management processes for various facets of tourism. Conversely, theoretical models “seek to describe or explain some aspect of the functioning of the tourism system” (Getz, 1986, p. 22), and can thus serve descriptive, explanatory, or predictive purposes. Evident within the tourism literature are several process and theoretical models underpinned by systems theory.

Gunn’s (1972) work is one of the earlier systems conceptualizations of tourism. At the time, no theoretical models existed to describe the elements comprising tourism. Thus, Gunn proposed a descriptive model known as the *functioning tourism system*, aimed at the planning of tourist spaces (Gunn, 1972). Mill and Morrison (1985) made use of a systems framework for their introductory tourism text, while Mathieson and Wall (1982) have also devised a systems framework that they used as a framework for their text regarding the impacts of tourism.

Several more recent systems models relating to tourism include Carlsen’s (1999) adapted soft systems methodology approach for island tourism destination management; Trauer’s (2006) systems conceptual framework of special interest tourism; and Farrell and Twining-Ward’s (2003) systems model for research into sustainable tourism development.

**Whole Tourism Systems**

Leiper (2004) conceptualizes tourism as an open system comprising five interrelated elements: one human element (tourists), three geographical elements (traveler-generating region, tourist destination region, and transit route), and one industrial element (tourist industries). These interrelated elements are said to be influenced by external forces such as political, economic, and technological environments. This model was originally proposed by Leiper in 1979. The label “whole tourism systems” was adapted when Getz (1986) coined the term “whole system models” (p. 25) of tourism in his review of tourism models. The latest version of the whole tourism systems model is presented in Leiper (2004).

Leiper’s (1979) tourism systems model was proposed to reduce fragmentation in tourism research, a problem he believed stemmed from its multidisciplinary nature. The elements of the original model put forward in 1979 are almost identical to the latest version (see Leiper, 2004), with the exception of the original industrial element, the tourist “industry,” which Leiper (2004) now refers to as “tourist industries.”

Leiper’s model of whole tourism systems has been applied previously in a systematic study of tourism in Cambodia (Leiper, 1998), and also in an assessment of the impacts on Fijian tourism following the 2000 military coup (Hing & Dimmock, 2000). Van Doorn (1982) adapted Leiper’s model to construct a conceptual framework for tourism futures (forecasting) research, while Henshall and Roberts (1985) have examined traveler-generating countries for inbound tourism to New Zealand. Boniface and Cooper (1987) used the geographical elements of the model to frame their text on the geography of tourism. Recently, Leiper’s model was used in a discussion of aircraft contrail im-
pacts in whole tourism systems (Leiper, Braithwaite, & Witsel, 2008).

Tourist Destination Regions

The scope of the present study is limited to the tourist destination region, and transit route elements. A tourist destination region (TDR) is a geographic concept derived from that of a "tourist destination." Leiper (2004) defined a tourist destination as, "places where travellers choose to stay awhile for leisure experiences, related to one or more features or characteristics of the place—a perceived attraction of some sort" (p. 128). As such, tourist destinations are places in whole tourism systems where tourists remain temporarily static. Meanwhile, a TDR is a narrower geographic concept:

The boundary of a TDR can be regarded as the feasible day-tripping range around a tourist’s accommodation, encompassing the area that tourists might typically visit on day trips. Going further requires shifting to new accommodation, when tourists move to what is, in effect, another TDR. In theory, each hotel or other accommodation base where a tourist stays for a night is the centre of a TDR. (Leiper, 2004, p. 128)

"Destinations" have been placed by some authors on a pedestal, to the belittlement of other elements in whole tourism systems. Cooper, Fletcher, Gilbert, and Wanhill (1993), for example, described destinations as the “raison d’être” (p. 77) for tourism, while Ritchie and Crouch (2000) described destinations as “the fundamental product in tourism” (p. 1). Such thinking, however, had been questioned. Leiper (2000a) suggested that perception of destinations as the “heart of tourism” (p. 364) distorts clear thinking amongst researchers, resulting in flawed conclusions.

For tourism incorporating multiple destinations, conjecture exists regarding the role TDRs play in tourists’ decision making as to where they visit. Weber (2001) noted that for tourists traversing the Asian Overland Route, the experience of traversing this transit route was of more importance than the final destination which was Nepal. Meanwhile, Brotherton and Himmetoglu (1997) suggested that for general interest tourists, characteristics of a destination, such as its mix of attractions, are the primary focus in their destination selection. However, for special interest tourists, their priority is pursuing their activity as opposed to the actual destination they visit, which is said to be of secondary concern (Brotherton & Himmetoglu, 1997).

Transit Routes

Transit routes are defined as the conduit linking the traveler between their home (the traveler-generating region) and the TDR (Leiper, 2004). When travelers reach the end of a transit route and arrive at their destination, they cease being travelers and become tourists. Leiper (2004) described transit routes as the part of whole tourism systems where “the traveller has left home but has not yet reached a place he/she regards as a tourist destination for that trip. This is an intermediate zone where the principal travel activity of tourism occurs, as distinct from visit activity in destinations” (p. 122).

As the traveler is in transition between the generating and destination regions, Leiper (2004) explained that transit routes primarily play a “supporting role” (p. 122) in most whole tourism systems. It was also postulated that because the traveler is “cocooned” in some form of vehicle (e.g., a bus, train, or aircraft) while traversing transit routes, an element of the tourism experience is lost or diminished while in transition (Leiper, 2004).

While Leiper (2004) does acknowledge the existence of transit routes between TDRs, his definition of transit routes acknowledges only those that are a conduit between a traveler-generating region and a TDR. This is a limitation when applied to multidestination tourists, as his definition downplays tourists’ use of transit routes within TDRs. The definition also does not adequately acknowledge that, for some tourists, transit routes may be a greater source of pleasure than the destinations visited (Weber, 2001; Zillinger, 2007).

Cycling and Tourism

Nature-based tourism and adventure tourism have exhibited strong growth recently (Millington, 2001). This growth has been said to be driven by trends such as increasing demand for travel linked with individual leisure interests (Tabata, 1989),
and the increasing prevalence of the baby boomer generation participating in tourism (Patterson, 2002). Cycling-related tourism is a subsegment of adventure tourism exhibiting signs of growth in terms of both consumer demand (Jackson & Mørhoth, 1999; Ritchie, 1998), and as an area of scholarly research. This form of tourism encompasses various subsegments where active or passive participation in cycling is an integral component of the tourism experience (Lumsdon, 1996; Ritchie, 1998). Cycling-related tourism may include organized events and travel to compete in or observe bicycle racing events. The focus of this article, however, is independent cycling holidays. An independent bicycle tourist may be defined as:

A person who is away from their home town or country for a period not less than 24 hours or one night, for the purpose of a vacation or holiday, and for whom using a bicycle as a mode of transport during this time away is an integral part of their holiday or vacation. This vacation is independently organised and may include the use of transport support services and any type of formal and/or informal accommodation. (Adapted from Ritchie, 1998, pp. 568–569)

Several initiatives partly aimed at supporting independent bicycle tourism are evident. For example, the National Cycle Network in the UK aims to develop a nationwide cycling network catering for commuters, recreational cyclists, as well as supporting tourism (Sustrans, 2007). Similarly, Eurovelo is an initiative of the European Cyclists’ Federation that will upon completion enable cyclists to ride across the continent in safety (European Cyclists Federation, 2007). In Australia, the Munda Biddi Trail (Western Australia) and the Murray to the Mountains Rail Trail (Victoria) are examples of disused railway corridors being converted to multiuse trails for walkers, horse riders, and cyclists. Regional economic development has been a consideration in the creation of these trails, with both yielding significant economic benefits for the small communities lining each route (Bee ton, 2006; Munda Biddi Foundation, 2005).

**Methods**

Email interviews were conducted with thirteen bicycle tourists. An interpretive approach to data collection and analysis was taken, whereby textual data were gathered and used in theory generation (Creswell, 2003). This research was undertaken as part of a broader exploratory study examining independent bicycle tourism in Australia, of which informants for the present study were recruited from an earlier phase. Initially, a questionnaire was distributed via an Australian cycling periodical. The questionnaire invited respondents to contact the researcher if they wished to participate in this subsequent qualitative phase of the study.

**Sample Selection**

A broad aim of qualitative research is to construct social reality using an inductive logic, informed by textual and other forms of “soft” data, and therefore is not concerned with generalizing to wider populations (Neuman, 2006). “Purposive” sampling, whereby the researcher selects informants capable of providing the most pertinent information (Neuman) best describes the method used to select informants for this study. Purposive selection was evident in that 1) informants were subscribers to a dedicated cycling magazine, and therefore exhibited an interest and/or experience in independent bicycle touring; and 2) informants were screened during initial contact to verify that they had undertaken an independent bicycle tour prior to this study.

As of August 1, 2007, 26 cyclists had expressed interest in further participation in the study. Email and telephone correspondence was undertaken to obtain postal addresses and develop initial rapport with the participants. On August 7, 2007, respondents were mailed a package containing an information sheet and informed consent form. Of the 26 who initially expressed interest in the study, 19 returned a signed informed consent form. The seven outstanding respondents were followed up by telephone or email. Two respondents indicated they were withdrawing their participation due to time constraints. The remaining five could not be contacted.

**Data Collection**

Asynchronous email interviews involve the administration of in-depth interview questions via the Internet whereby participants respond at a time
Asynchronous email interviews were utilized because of the temporal and spatial flexibility required by the participants to participate in the research (Curasi, 2001). Many respondents advised that they were unable to participate in telephone interviews due to busy schedules, which was the primary justification for their use in this study.

Asynchronous email interviewing is a relatively new means of data collection in tourism research. However, Meho (2006) has noted the increasing number of published studies utilizing electronic qualitative data collection techniques. Some limitations surround the use of asynchronous email interviews for qualitative data collection. Curasi (2001) suggested that the capacity of asynchronous email interview methods to collect rich data is limited by the physical absence of a researcher, who may “probe” respondents for further detail. Furthermore, the detail provided is largely dependent upon the motivation and commitment of respondents (Curasi, 2001). In overcoming these issues, follow-up emails were undertaken in most cases to probe for further detail, and/or to clarify ambiguous responses (Minichiello, Aroni, Timewell, & Alexander, 1995).

On November 7, 2007, an email was sent to the participants containing general instructions regarding the interview procedures; criteria for defining an independent bicycle tour (adapted from Ritchie, 1998); and an attached word processing file containing 13 interview questions. The interview questions were developed following a review of the literature in addition to the results of the quantitative survey conducted previously where some areas were deemed in need of further investigation. The questions addressed areas such as:

- How bicycle tourists plan for a bicycle tour;
- Attributes of destinations that are of most influence when planning where to go bicycle touring;
- Which sources and types of information are most salient when planning for a bicycle tour; and
- Perceptions regarding road safety and infrastructure provision relating to bicycle touring in Australia.

Respondents were requested to type their responses using the attached file, and return them via reply email at their convenience. By the cutoff date, a total of 13 responses had been received. Nine of the 13 respondents were male, four were female. Five respondents resided in Victoria, two each in Western Australia, the Australian Capital Territory, and the Northern Territory, and one each from New South Wales and Tasmania. Quantitative information regarding age and other demographic characteristics were not collected.

Data Analysis and Trustworthiness

Raw data were analyzed using a three-stage process of open, axial, and selective coding (Neuman, 2006), in which a précis document of the researcher’s interpretation of the responses as a whole was produced. A member checking procedure was undertaken to validate the researcher’s interpretations (Merriam, 1998). This involved posting the précis document to participants for review. As a result of this member check, follow-up email correspondence was received from 10 of the respondents, who expressed general agreement with the interpretations. Reading the précis document prompted seven participants to provide further information, which was subsequently integrated into the results.

Findings and Discussion

The results indicated that the tourist destination region and transit route concepts as described by Leiper (2004) do not adequately articulate the tourist flows associated with independent bicycle tourism. These concepts were also found to be limited in their ability to describe the nature of and roles played by TDRs and transit routes with respect to independent bicycle tourism. The following discussion describes a number of adaptations necessary to more accurately conceptualize independent bicycle tourism using a whole tourism approach.

Tourist Destination Regions: It’s Not the Destination, It’s the Journey!

Independent bicycle tourists typically cycle from point to point each day, spending each night in a different location (Ritchie, 1998; Simonsen & Jorgenson, 1998). That is, they are often multides-
destination tourists. Data collected in the present study suggest that destinations arrived at the end of each day’s cycling are not perceived as the element in whole tourism systems which provides independent bicycle tourists with the most pleasure and satisfaction with their experience:

most often the destination is somewhere to go home from rather than the attraction. We led a ride from Alice [Springs] to Canberra in 2001, we have rail traile in 2 locations in Victoria, we toured the South Island of New Zealand, and I have toured Central NSW, as well as touring from Byron Bay to Wangaratta. . . . On each occasion, the attributes of the destination had no real influence. It was simply a bike tour, and we would see and experience many things on each of them. (“Peter,” ACT).

[I consider] the weather, the ‘attitude’ of motorists & other people I may interact with (e.g., accommodation providers), the scenery/surrounds, the food, and the cycling itself, i.e.: the journey, rather than the destination. (“Nancy,” Victoria)

Destinations for independent bicycle tourists were perceived partly as convenient, intermediary stopover points used for physical recovery, undertaking bicycle maintenance or repairs, and replenishing supplies. This role is similar to that of “traveller destinations” described by Leiper (1990, p. 94), which serve as a point in transit. Sightseeing and other activities at intermediary destinations were generally of secondary importance for the respondents. Similarly, Framke (2001) has noted that mobile tourists are not overly concerned with destinations. He observed that it is necessary for mobile tourists to make stops for sleeping, eating, to make use of facilities, and labelled these stopover points as “nodes on the travelling line” (p. 15).

Cycling Routes as Tourist Attractions

Independent bicycle tourists’ primary concern in selecting a destination was a region’s capacity to support cycling. The respondents reported being attracted to an area primarily because of the presence and quality of cycling infrastructure (particularly roads, paths, and trails), endowed resources (appealing natural scenery), supporting industries, and ease of accessibility.

It appears that destinations popular among general interest tourists may prove to be inappropriate for independent bicycle tourists if suitable cycling routes are not available, or if cycling routes are perceived as unsafe. The following quote refers to the Great Ocean Road, a popular drive tourism route in Victoria, Australia. This respondent notes the resplendent scenery and quality roads. However, she describes touring by bicycle along this route as unappealing due to high traffic volumes which may jeopardize cyclists’ safety:

I may have driven through the area and thought it would be a good place to ride there, road conditions, distance between towns, availability of alternative transport if required, my ‘perception’ of it—i.e. there are a number of places that I would love to go riding—the Black Spur and Great Ocean Road (in Victoria), but I would not ride there, despite some factors being ideal e.g. great scenery, reasonable road surface etc. but I KNOW that both roads are narrow, attract lots of tourists (=inattentive driving) [sic], and have lots of hazards. In the case of the Black Spur, log trucks, and the Great Ocean Road, tourist buses. So I have never seriously considered it. (“Nancy,” Victoria)

Notably, when asked which features they seek in a bicycle tourism destination, respondents generally did not mention cycling routes in isolation. A common response was a combination of cycling routes and natural scenery. Cumulative attraction theory may therefore be useful in understanding independent bicycle tourists’ destination selection processes. Originally proposed in the context of retail, Lue, Crompton, and Fesenmaier (1993) suggested that cumulative attraction theory has implications for multistation tourism itineraries, in that “the appeal of two or more attractions on a single route or in the same area is sufficient either to induce tourists to make a trip they would not have undertaken if there had been only a single attraction” (Lue et al., p. 296).

This theory could be relevant to independent bicycle tourism because it appears that for a destination to attract bicycle tourists, cycling routes and appealing scenery (both potential tourist attractions in their own right) must be present. Lue et al. (1993) also described similar cumulative attractions, which are two or more attractions, that when combined “can draw more visitors than
apart” (p. 297). For example, while a scenic road may be capable of attracting drive tourists, installation of wider road shoulders, informative signage, or a segregated cycling path along the same route may form a similar cumulative attraction, capable of also attracting bicycle tourists to that area.

A Hierarchy of Destinations?

The concept of a destination appears to be multidimensional for independent bicycle tourists. The destination element described in Leiper’s (2004) whole tourism systems model is limited because it only acknowledges the geographical space that may be covered by tourists in the temporal confines of day trips. Hence, there is a need for theoretical models to better reflect the multidimensional nature of destinations in conceptualizing independent bicycle tourism using a whole tourism systems approach.

A hierarchical model of destinations is proposed here in bringing clarity to this quandary. Figure 1 identifies three types of destinations pertinent to independent bicycle tourism: a destination area, tourist destination regions, and node destinations. These are geographic concepts decreasing in physical size, moving from the top to the bottom of the hierarchy.

Destination Area. The largest geographic destination concept is a destination area. In examining destination selection among bicycle tourists, it was evident that a single destination is not selected in isolation for a cycling tour, as explained by this respondent: “it’s not like my destination is ‘Sydney’ or ‘Uluru’” (“Peter,” ACT). Instead, a large geographic region is selected, which acts as the tourist space (Framke, 2001) for an independent bicycle tour.

In the case of independent bicycle tours (which often incorporates multiple destinations), a distinction may be made between a destination area and a TDR. Leiper defines the boundaries of TDRs “the feasible day-tripping range around a tourist’s accommodation” (p. 128). This may be problematic because the scope of a TDR is conceptualized as the space in which a tourist can plausibly move within the time span of one day. Thus, the study of tourists’ movements within a broader spatial region over multiple days (i.e., multidestination itineraries) is restricted. Zillinger (2007) supported this contention in arguing that many abstract conceptualizations (Leiper’s model included) depict tourist movements within the TDR as being static: “such a system brings difficulties when it comes to round tours, as the intrinsic value of mobility is downplayed... At least parts of the transit route should be included in the tourist-receiving region, as mobility can be seen as playing an important role in the tourist experience” (Zillinger, 2007, p. 12).

A destination area exhibits characteristics that distinguish it from the two other destination types. First, a destination area features an entry and exit point; a point in the system where a traveler alights from a transit route and vice versa. For example, the South Island of New Zealand may be the destination area for an Australian bicycle tourist for whom Christchurch International Airport is the entry and exit point. However, for travelers making their way to and from a destination area by private vehicle, entry and exit points are more qualitative concepts. For example, an entry point could be seen as the point from where returning home would require more traveling time than is
possible in a single day; or the first night’s accommodation establishment; or the point where a motor vehicle is exchanged for bicycle transport and the cycling component of a tour begins. Exit points could be thought of in a converse manner.

The second distinguishing characteristic is that a destination area for a bicycle tour is selected primarily due to the presence of suitable cycling routes. Brotherton and Himmetoglu (1997) contend that this practice is common among special interest tourists, in that the activity to be pursued takes precedence over the destination in their decision making, which data gathered in this study supports.

For the purposes of developing a model of whole tourism systems specific to independent bicycle tourism, a destination area may be defined as:

The combined geographic space of all tourist destination regions through which bicycle tourists travel on a bicycle tour. A destination area has an entry point, which represents the point in whole tourism systems where travelers leave a primary transit route and become tourists. They also have an exit point, where tourists join a primary transit route to depart the destination area, thus becoming travelers. A destination area may take any shape and be of any size, and may encompass multiple political, economic or geographic jurisdictions.

Tourist Destination Regions. The second type of destination recognized in the hierarchy model is tourist destination regions. They are identical in nature to TDRs as defined by Leiper (2004). This concept represents the geographical space in which a tourist may feasibly travel in the temporal confines of day trips.

However, the manner in which TDRs have been defined may cloud the study of bicycle tourists’ spatial movements in whole tourism systems. Because the scope of a TDR is the space in which a tourist can plausibly move within the space of a day trip, the study of tourists’ movements within a broader spatial region over multiple days (i.e., multistopover itineraries) is not possible. However, TDRs in the context of the space that may feasibly be covered by a tourist in the space of one day (as per Leiper, 2004) remain a relevant concept for independent bicycle tourists. Hence, TDRs are acknowledged as the second level of destinations in the geographic hierarchy of destinations model.

Figure 2 aids in articulating the role played by TDRs for independent bicycle tourism. It illustrates the three destination types in an abstract itinerary incorporating five stopover destinations. It can be observed that where the radial limits of two TDRs intercept, the tourist enters a new TDR. Within TDRs are transit routes, which connect mobile tourists with the next “node” destination, the final destination type acknowledged in the hierarchy.

Node Destinations. The third destination type is node destinations, where independent bicycle tourists stop at the end of each day’s cycling. Framke’s (2001) notion of a node is adapted here in labeling these points node destinations. Framke was critical of the static connotations often associated with the term destination, noting that mobility exhibited by multidestination tourists contradicts such notions. Framke (2002) further stated that although multidestination tourists are characterized by their mobile nature, a necessity still remains for these tourists to set down regularly in order to eat, rest, and make use of facilities.

Node destinations are locations where independent bicycle tourists lodge overnight and make use of local facilities and services to refuel their bodies, undertake bicycle maintenance/repairs, and replenish supplies. They are a point in transit where sightseeing and other tourist activities were reported by the respondents as being of secondary importance to the cycling experience. Furthermore, specific node destinations were described by respondents as being included in itineraries on the basis of convenience, because one node destination was within an optimum cycling distance of a previous one. This is perhaps with the exception of node destinations featuring natural or other at-
tractions that a bicycle tourist may wish to specifically visit, in which case an itinerary might be tailored to include node destinations of particular interest.

Typically, a node destination is a village, town, city, or other form of human settlement. However, node destinations for bicycle tourists will not always comprise formal human settlements. Ritchie (1999) noted that his study of independent bicycle tourists in New Zealand may have been biased by not being able to access bicycle tourists who made use of informal camping sites between major towns. A similar notion was observed in the present study. “On many of my tours the destination is often the side of the road, or a shearing shed, or a campground, or even a 4 star property” (“Peter,” ACT).

In her model of destination regions, Dredge (1999) explained that nodes feature two, often interdependent, components: attraction complexes and service components. Attraction complexes are described as “any facility that tourists visit or contemplate visiting. The term refers to one or more individual attractions, sights or objects which creates a place of interest” (Dredge, 1999, p. 782). Service components refer to commercial entities necessary to serve the needs of tourists, such as restaurants, accommodation establishments, and retail outlets (Dredge, 1999). Although Dredge argued that there is an interdependent relationship between attraction complexes and service components in the case of nodes, it is argued here that such interdependency is unnecessary in conceptualizing node destinations relevant to independent bicycle tourism.

In justifying this argument, the data suggested that service components are of most concern for independent bicycle tourists when deciding which node destinations to include in an itinerary. Attraction complexes appeared to be unimportant in their decision to visit a particular node destination, as the following quote alludes to:

I look for a region that is “cycle friendly.” That is: good safe roads on which to travel, sights to see along the route, bicycle paths that give access to points of interest, or allow safe passage through heavily built up areas, safe, secure places to leave the bike when not riding it, eateries and accommodation within cycling distance that cater to the casual style of travel. Also of importance is [that] the region’s local attractions that can be accessed by pedal power. (“Melissa,” NT).

It is therefore unnecessary for attraction complexes and service components to be interdependent in the case of independent bicycle tourists. In some circumstances, attraction complexes and service components may exist in a complementary manner. That is, when the presence of natural or other attractions makes one node destination more attractive than another which lacks attraction complexes. Therefore, in the context of independent bicycle tourism, node destinations may be defined as:
A geographic location used by independent bicycle tourists as a lodging point for one or more nights, upon reaching the first, and subsequent tourist destination regions on a trip. The primary motivation for selecting a node destination is access to service components, however, complementary attraction complexes may exist, which enhance the attractiveness of one node destination over another.

Implicit in the hierarchy of destinations model is a notion that the three destination concepts exist along a continuum of the degree of trip planning required, decreasing from the top to the bottom of the hierarchy. For example, few travelers would arrive at an international airport without having a clear conception of the destination area they will fly to; this is typically planned well ahead of departure. It may also be necessary to obtain a visa and/or any inoculations, both of which require some lead time. Once in the destination area tourists are at leisure and have more scope to act in a spontaneous manner. Tourists may elect to move to another TDR at short notice, or stay in the same node destination for additional nights. This spontaneity may diminish however, if the tourist has purchased a packaged travel product that forbids changes in itinerary.

**Two Transit Routes: Primary and Secondary**

In Leiper’s (2004) model of whole tourism systems, transit routes are defined as a conduit linking the traveler between their home (the traveler-generating region) and the TDR. Two limitations surround this definition when transit routes are considered in light of independent bicycle tourism.

Although Leiper (2004) acknowledges that some whole tourism systems may involve transit routes other than those used to depart and return to the traveler-generating region, this is not explicitly recognized in his definition of transit routes. Such a deficiency is troublesome when conceptualizing whole independent bicycle tourism using a whole tourism systems approach. A fundamental element of independent bicycle tourism experiences is traversing transit routes between node destinations within a destination area, by bicycle. Thus, independent bicycle tourists make use of two distinct forms of transit routes: 1) transit routes connecting the traveler to and from the traveler-generating region and destination area; and 2) transit routes traversed by bicycle between node destinations within a destination area.

A second limitation of Leiper’s (2004) definition of transit routes is that this definition carries a notion of necessity regarding the use of transit routes. Implied in Leiper’s definition is a connotation that time spent traversing transit routes constitutes a necessary evil. This, however, may not be true for some tourists. Indeed, independent bicycle tourists appear to derive more pleasure from cycling along transit routes, than destinations, as explained by this respondent: “At times a particular route is chosen purely as a means of getting from A to B, but more often than not a route is chosen due to its scenic appeal and the destination is second to that (unless the destination is to be a pivot point for day trips)” (“Melissa,” NT).

There are clear distinctions between the two types of transit routes used by independent bicycle tourists. It is imprudent to group the two transit routes utilized by independent bicycle tourists as one generic element of whole tourism systems. For the purposes of constructing a model of whole tourism systems specific to independent bicycle tourism, it is proposed that transit routes connecting the traveler to and from the traveler-generating region and destination area be referred to as primary transit routes. Transit routes traversed by bicycle between node destinations within a destination area may be referred to as secondary transit routes.

**Primary Transit Routes.** Independent bicycle tourists make use of transit routes to depart the traveler-generating region (TGR) and travel to the destination area to undertake the cycling component(s) of their journey. This is elementary, as a traveler must be away from their home region in order to be considered a tourist (Leiper, 2004; Mathieson & Wall, 1982). Similarly, independent bicycle tourists must travel another transit route to depart the destination area and return to the TGR.

Primary transit routes are typically characterized by the use of transport modes such as private vehicle, coach, train, or airplane. They are therefore characterized by long distances and high speeds, relative to the distances and speeds associated with travelling by bicycle along secondary
transit routes. The use of such transport modes applies to independent bicycle tourists unless the traveler departs the TGR by bicycle to undertake a circuit in which they arrive back home by bicycle.

A further distinction between primary and secondary transit routes may exist in the traveler’s psychological state. A traveler en route to a destination area to undertake a bicycle tour may exist in a state of anticipation. They may be anxious to reach the destination area to begin the cycling component of their trip. “The tourist-generating region is left quickly, as tourists aim to reach their destination region . . . In this phase of the journey, tourists are considered to be less willing to take detours or extend travel time by making more stops than are actually needed” (Zillinger, 2007, pp. 12–13).

Zillinger (2007) further contrasts the states of mind that a mobile tourist may experience between traveling along transit routes to arrive in the destination area, and transit routes traversed within the destination area. Zillinger supported the notion of pleasure being derived from mobility within the destination area, as reported by respondents in the present study.

The difference between the mobility in the tourist-generating region and receiving region is that mobility is understood as necessary transport in the generating region, while it is part of the attraction in the receiving one. As tourists can enjoy mobility through this region as part of the holiday attraction, they do not necessarily take the shortest possible route between two places, since mobility becomes a pleasure in itself. (p. 13)

Therefore, primary transit routes may be defined as: Transitory routes that provide an outbound and return connection between the traveler-generating region and the destination area. Primary transit routes are characterized by the use of transport modes such as private vehicle, coach, rail and/or air, and often by relatively long distances and high speeds. Primary transit routes may also be traversed by bicycle in the case of bicycle tours in which the traveler’s home is the starting and finishing point for the cycling component of the journey.

Secondary Transit Routes. In contrast to primary transit routes, secondary transit routes are traversed by bicycle, and are characterized by the shorter distances that may be feasibly covered by bicycle. Psychologically, secondary transit routes are also perceived in a different manner to primary transit routes. Secondary transit routes appear to provide tourists with the greatest source of pleasure and constitute a key factor in bicycle tourists’ decision-making regarding destination area selection.

Leiper (1990) has argued that transit routes are “where the major travelling occurs in the [tourism] system, as opposed to the visiting that occurs in destinations” (p. 91). This is generally not the case for independent bicycle tourists, however. Traveling occurs while traversing primary transit routes. Visiting takes place while cycling along secondary transit routes, where bicycle tourists explore the destination area by stopping at peripheral settlements, taking in the surrounding scenery while traveling at a relaxed pace.

The efficiency of primary and secondary transit routes is also influenced by different variables, which subsequently influence the level of accessibility to a TDR. Efficiency of primary transit routes are influenced mostly by factors relating to carriers servicing such routes (Leiper, 2004). Restrictive policies imposed by transport companies regarding the carriage of bicycles may reduce the efficiency of a primary transit route, hampering accessibility to a destination area for bicycle tourists. In contrast, variables such as road surface quality, terrain, and road design affect cyclists’ efficiency of movement along secondary transit routes (Parkin, Ryley, & Jones, 2007).

Given the differences between primary and secondary transit routes outlined above, it is important that primary and secondary transit routes be acknowledged as distinct elements in models of whole tourism systems involving independent bicycle tourism. For the purposes of such a model, secondary transit routes may be defined as:

Experiential cycling routes traversed by independent bicycle tourists within the destination area. Secondary transit routes are traversed by bicycle and are characterized by relatively short distances and slow speeds. Such transit routes represent the element within whole tourism systems where the tourism experience is consumed, and also influence the traveler’s overall satisfaction with the
experience. Secondary transit routes perform a dual role in that they are also the means by which independent bicycle tourists move between node destinations within a destination area.

If secondary transit routes are the major source of pleasure for bicycle tourists, exerting the most influence over destination area selection than all other elements in the tourism system, one may question why routes linking node destinations are labeled “secondary” transit routes instead of “primary.” The logic here is that in order for tourism to occur the individual must depart their home region (Mathieson & Wall, 1982; Smith, 1999). A primary transit route must be traversed to access secondary transit routes in a whole tourism system, thus transit routes linking the traveler’s home region and destination area (labeled a “primary” transit route here) are arguably the most important transit route in the tourism system because departure from the home region is a fundamental requirement for tourism to occur. Hence why the two transit routes are labeled the way they are.

Independent Bicycle Tourism: An Adapted Model

Figure 3 presents an adapted whole tourism system model for independent bicycle tourism. This adapted model deviates from the original in that, 1) the TDR element has been modified to reflect the three hierarchical destination elements associated with independent bicycle tourism; and 2) the recognition of two distinct transit routes: primary and secondary, as per the definitions provided earlier.

Implications for Policy and Practice

Independent bicycle tourists tend to take a macro-perspective in destination area selection, thus a macro-perspective may be useful in the planning and management of initiatives aimed at attracting bicycle tourists to a region. The concept of a destination area recognizes that independent bicycle tourism can incorporate multiple political, geographical and economic jurisdictions. This has implications for planning and management because “the use of administrative boundaries commonly adopted in land-use planning may limit proper conceptualisation and planning of the destination region” (Dredge, 1999, p. 781).

Because independent bicycle tourism rarely takes place in isolated geographical areas (Ritchie, 1998, Simonsen & Jorgenson, 1998), the implementation and management of bicycle tourism initiatives should take a macro-approach to avoid fragmentation of infrastructure and supporting services. For example, it is inadequate to provide excellent road surfaces, wide road shoulders, and quality signage in one local government area (LGA), only to cross into an adjacent jurisdiction where bicycle tourists encounter poor road surfaces, narrow road shoulders, and a lack of informative signage. Planners and managers should aim to provide a network of pertinent infrastructure throughout a region catering for a broad spectrum of demand.

North-East Victoria, Australia is a prominent example of where a macro-approach has been taken to the implementation and promotion of a bicycle tourism initiative. This region incorporates the Murray to the Mountains Rail Trail, which passes through three local government jurisdictions: the Rural City of Wangaratta, as well as Indigo and Alpine Shires (Rural City of Wangaratta, Alpine Shire Council, & Indigo Shire Council, 2008).

In 2007, the three LGAs initiated a collaborative arrangement aimed at positioning North-East Victoria as a prominent destination area for bicycle tourism. This involved the employment of a Cycle Tourism Officer, responsible for the development and implementation of a cycle tourism strategy incorporating the three LGAs for the period 2008 through 2010 (personal communication, Murray to the Mountains Cycle Tourism Officer, 13th October 2008). The strategy extends to the management and promotion of independent bicycle tourism on the Murray to the Mountains Rail Trail as well as on public road and trail networks within the three LGAs. (Rural City of Wangaratta, Alpine Shire Council, & Indigo Shire Council, 2008).

This whole-of-region approach aims to ensure the provision of a coherent network of cycling routes which satisfy a broad spectrum of demand. An objective of the strategy is to reduce fragmentation of cycling infrastructure across the three LGAs, and to undertake collaborative marketing initiatives that promote cycling-related tourism.
across the whole region (Rural City of Wangaratta, Alpine Shire Council, & Indigo Shire Council, 2008). In adopting a macro-approach to the management and promotion of cycling-related tourism, the geographic space incorporating the three LGAs could be thought of as a destination area.

This example demonstrates the usefulness of the concept of a destination area for the planning and management of bicycle tourism initiatives. Personal communications between the researcher and the Murray to the Mountains Cycle Tourism Officer revealed the important role that a macro-approach to planning for and managing cycling-related tourism in this region has played:

The basis of the three LGAs working together was the fact the three shires complement each other very well. The Rural City of Wangaratta is the service centre for the region and a public transport hub, and the Indigo and Alpine Shires had known tourism destinations in Beechworth and Bright respectively. In effect, and this was probably not realised initially that the ongoing success of the Murray to Mountains Rail Trail is only possible due to the three shires working together. Wangaratta provides the hub and Beechworth, Myrtleford and Bright provide the spokes. To use a cycling analogy, a wheel would collapse with only one spoke.

The Murray to the Mountains Rail Trail itself is a great example of the three shires working collaboratively to develop cycling infrastructure. Without Wangaratta the trail would not be connected to public transport, without Bright and Beechworth, it does not have the known tourism destinations. Without Myrtleford it does not have appropriate services available for cyclists along the trail. (personal communication, Murray to the Mountains Cycle Tourism Officer, 13th October 2008)

As Ritchie and Hall (1999) have noted, independent bicycle tourists tend to travel for a longer period of time than other tourists: “they often stay overnight in smaller more peripheral towns and regions” (p. 103). The concept of a destination area assists in emphasizing that due to the mobile nature of their travels, expenditure by independent bicycle tourists tends to be dispersed throughout the destination area instead of concentrating in isolated areas.

Planners and policy makers should recognize that secondary transit routes play a key role in at-
tracting independent bicycle tourists to a destination area. Planning initiatives should focus on meeting the expectations of bicycle tourists in terms of cycling route surface quality, terrain, safety, and supporting infrastructure (such as signage, rest areas, toilets, drinking water). The attributes of secondary transit routes should be emphasized in marketing initiatives, particularly appealing scenery, quiet roads, or segregated paths/trails. Packaged bicycle tourism products should consider distances between node destinations, which should be within reasonable cycling distance of one another. The availability of products and services required by independent bicycle tourists such as bicycle repairs and maintenance, tourist information, food and drink provisions are further considerations for marketing and product development.

Finally, it is evident that destination areas not palatable by general-interest tourists may be highly suitable for bicycle tourists if quality cycling routes exist along with appealing scenery, which has implications for regional development. For example, the Coed-y-Brenin forest is a section of national park in Wales which was transformed in the early 1990s into a basic trail system, which quickly gained popularity. Corporate sponsorship later enabled the construction of a more elaborate trail system. Today Wales is internationally recognized as a mecca for mountain bike enthusiasts (International Mountain Bicycling Association, 2008).

Conclusion and Avenues for Future Research

Systems theory has been applied in many conceptual models of tourism, of which Leiper’s (2004) model of whole tourism systems is a prominent example. Little attention, however, has been paid to assessing the applicability of this model to specific forms of special interest tourism. This article has contributed to broadening our understanding of whole tourism systems by demonstrating limitations of Leiper’s generic model when applied to a specific form of tourism.

This study highlighted several limitations of Leiper’s (2004) model of whole tourism systems in articulating flows associated with independent bicycle tourism. A hierarchy of destinations was proposed, acknowledging the mobility of multidestination tourists through geographic space, consisting of a destination area, tourist destination regions, and node destinations. Two distinct transit routes were identified: “primary” transit routes, which connect bicycle tourists between the TGR and the destination area; and “secondary” transit routes, which are travelled by bicycle between node destinations. An adapted model of whole tourism systems specific to independent bicycle tourism was also proposed.

Several implications for the management of cycling-related tourism arising from this research were discussed. These implications highlighted the need for policymakers and planners to be aware of the specialized needs and unique travel behaviors associated with this form of tourism.

Several avenues for future research exist. First, limitations surround the present study due to the methods used. The empirical findings reported here are not generalizable beyond the cases which informed the research (Neuman, 2006). Notions put forward in this paper require validation through research incorporating a representative sample of independent bicycle tourists. This research also provides a conceptual framework which may act as a platform for future research into independent bicycle tourism. Individual elements of the framework may form the basis for studies into specific facets of independent bicycle tourism. The framework may also be applied in its entirety to assess a region’s ability to support independent bicycle tourism. Future research may also assess the applicability of the adapted model to other forms of multistage tourism, which long-distance hiking, and drive tourism are possible examples.

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