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Understanding temporal rhythms and travel behaviour at destinations: potential ways to achieve more sustainable travel

Abstract

This paper analyses the roles played by time in destination based travel behaviour. It contrasts clock time's linear view of time with fragmented time, instantaneous time, fluid time and flow, time out and the multiple temporalities of tourism experiences. It explores temporal issues in a destination travel context, using qualitative techniques. Data were captured using a diary-photography, diary-interview method with tourists at a rural destination; their spatial and temporal patterns were captured using a purpose built smartphone app. The analysis revealed three temporal themes influencing travel behaviour: time fluidity; daily and place related rhythms; and control of time. Three key messages emerge for future sustainable tourist destination based travel systems. Given the strong desire for temporal fluidity, transport systems should evolve beyond clock-time regimes. Second, temporal forces favour personal modes of transport (car, walk, cycle), especially in rural areas where public transport cannot offer flexibility. Third, the car is personalised and perceived to optimise travel fluidity and speed, but is currently unsustainable. Imaginative initiatives, using new mobile media technology can offer new positive and proactive car travel, utilising spare public and private vehicle capacity. Research is needed to implement mechanisms for individualised space-time scheduling and collective vehicle use strategies.

Keywords: space-time, mobile media, behavioural studies, place rhythms, car travel

Introduction

Travel behaviour is inextricably linked to 'time' in diverse ways with implications for sustainable mobility. At the most basic level, time is linked to travel through the speed-equals-distance-divided-by-time equation. In this way natural laws govern the distance people may travel relative to the speed of movement and the time available. With less time available, distance decreases unless speed is increased. In general, increased travel speed is associated with higher energy intensity (Poumanyong, Kaneko, & Dhakal, 2012). Given our current dependence on fossil fuel-based travel modes, this has led to higher greenhouse gas (GHG) emissions. Similarly, allocating more time to travel enables travel over a longer distance with greater GHG emissions even if speed is not increased. If more time to travel is available and there is access to faster modes, this has a two-fold effect on increasing GHG emissions. However, the time allocated to travel in our daily lives has remained relatively constant and increased distance is a result of higher speed (Metz, 2008). Speed has increased in tourism through improved car and train infrastructure and greater use of aviation, and with it, both distance travelled and GHG emissions (Gössling, Ceron, Dubois & Hall, 2009). The car and air travel dominate

tourism transport modes (Scott, Peeters, & Gössling, 2010) and together account for 72% of tourism GHG emissions (United Nations World Tourism Organisation – United Nations Environment Programme – World Meteorological Organisation, 2008). Though air travel plays a significant role in the GHG emissions of tourism (Becken 2002), the focus of this study is on destination-based travel. The destination travel element is largely overlooked in existing sustainable tourism research (Hunter 2002; La Lopa & Day 2011) and the need for more research is well recognised (Warnken, Bradley, & Guilding, 2004). Therefore, subsequent analysis considers land-based travel at a destination, especially car use.

In the tourist destination context, time is important to the transport demand management problem. Time related visitation patterns generate peak transport demands through large numbers of people seeking to be at a specific place within a similar time frame. This has implications for all transport modes, though car travel presents particular temporal problems related to congestion and car park resource management (Mallet & McGucking, 2000). Historically, solutions included improvements to road and car park infrastructure, offering alternatives modes, such as buses or trains, and mechanisms to induce behaviour change in car users, either to encourage use of alternatives or to avoid peak times. While there have been some localised success stories (Page, 2005), the overall picture remains bleak, especially in rural destinations where car travel is a pervasive problem (Connell & Page, 2008).

Time also plays a role in individual mode choice decisions. The car is perceived to be convenient and offers individually tailored temporal flexibility (Dickinson & Robbins, 2008). In the tourism context, where trips are less predictable, subject to constant readjustment due to tourist preferences and often involve trip chaining, the car offers a unique “time shifting” device (Southerton, Shove & Warde, 2001) that enables users to spontaneously adjust temporal plans to align with tourist opportunities. In rural destinations, in particular, there are often few alternatives available, and, where public transport is available, services are infrequent and often subject to delays due to traffic congestion. These cumulative temporal concerns favour car use and higher GHG emissions.

Time is also an important element that frames the tourist experience. Tourism represents a time to step outside the clock-time routines of day-to-day life (Elsrud, 1998; Richards, 1998; Stein, 2012) and research has explored the multiple temporalities of tourism and temporal rhythms that characterise destinations (Bærenholdt, Haldrup, Larsen & Urry, 2004; Germann Molz, 2010; Haldrup, 2004). Despite the importance of time in tourism and to the tourism transport problem, it has rarely been analysed from the perspective of the individual tourist experience and its role in tourist travel behaviour. Dickinson and Peeters (2012) suggest a need to better understand the role of time in the sustainable development of tourism. Tourist responses to time conditions influence travel behaviour and greater attention needs to be paid to this if we are to offer better insights to policy makers.

To further highlight the significance of time, mobile media has emerged as a new socio-technical substrate with ubiquitous capabilities that provide users with much enhanced space-time knowledge that is increasingly employed in travel contexts (Dickinson, Ghali, Cherrett, Speed, Davies & Norgate, 2012). As a result, new travel tools, for example, those utilising real-time travel information, are emerging that have the potential to inform and guide new behavioural practice. Wajcman (2008, p. 67) suggests such technology not only saves time but also provides users with a tool to mutually shape new material and cultural practices to actively “take more control of time”. Therefore, this is a pivotal moment to examine temporal concepts in order to inform policy debate and the future governance of sustainable mobility.

This paper draws on material collected within a wider research study, Sixth Sense Transport (sixthsensetransport.com), which focuses on decision making in travel behaviour by using social networking principles to create visibility of potential transport options in time and space. The analysis presented here focuses on research conducted at a campsite in a UK rural tourism destination that explored a variety of temporal problems with respect to destination travel. The paper’s aim is to contribute an understanding of the role played by time in destination based travel behaviour.

Time, tourism and travel behaviour

In clock-time cultures such as north America and western Europe, time is regulated by the clock and it is difficult to conceptualise time in any other way. Relative to human existence, clock-time is a recent phenomenon and one that is linked to travel. While time keeping emerged from the Benedictine monasteries in the fourteenth century (Adam, 1995), it was only during the industrial revolution and the advent of transport structures that required coordination between different cities and countries that the time systems of different places became aligned. The result was the adoption of Greenwich Mean Time, a time standard across the globe (Speed, 2011). Contemporary society is governed by a variety of time schedules such as shop, office and attraction opening hours. Transport infrastructures and travel patterns are to a large extent regulated by the clock-time system. For example, in tourism congestion builds up on motorways at the start and end of a holiday weekend, attraction car parks are busy on a Sunday and transport companies of all types charge peak rates at busy times of each day and at the start and end of a holiday periods.

Clock-time presents a linear view of time with a precisely defined measurement tool. This tool provides a mechanism to coordinate activities where people need to periodically meet. There are, however, challenges to clock-time brought about by socio-technological adaptations and other more experiential interpretations of time. An increasingly networked society has found some freedom from the clock-time bonds that once bound activities to distinct spatial and temporal settings (Couclelis, 2009). This is particularly evident in post-Fordist work environments where increasingly ubiquitous technology and global networks are changing working practices. Global communication technology can bring disparate parties to the immediate present (Klein, 2004; Frändberg, 2008). Castells (2000) describes this as the “Network Society” and suggest this is leading to a new paradigm of time that he refers to as “timeless time”. In a similar vein, Klein (2004)

describes the blurring of work time and social life time and the disruption of time continuity as “fragmented time”, while Urry (1994) refers to “instantaneous time”. Dickinson and Peeters (2012) suggest that this more fluid experience of time has the potential to release tourists from day-to-day temporal and spatial constraints and yield opportunities for more sustainable tourist travel, though they are not optimistic this path will emerge.

Our experience of time is not just linear and we are able to experience multiple times (Adam, 1995; May & Thrift, 2001). For instance, the leisure experience includes phases such as “anticipation” and “recollection” (Clawson & Knetsch, 1966) where we are looking forward to a future experience or remembering a past time (Adam, 1995). Csikszentmihalyi (2000) has also conceptualised “flow” where we become so immersed in an activity that we lose sense of time and it passes more quickly. Adam (1995, p. 12) also draws attention to the “recursiveness of daily existence” as we enact a pattern of rhythms relative to daylight hours, meal times and other bodily needs. Here clock-time can be at odds with our bodies as contemporary society no longer modifies activity patterns relative to winter and summer. Merriman (2012) refers to the geographer’s obsession with space-time and suggests a focus on the unfolding of events instead. He highlights that our experience of time is culturally specific and calls for more processual and relational accounts.

Within tourism, several authors have explored the multiple temporalities of tourism (Bærenholdt et al., 2004; Germann Molz, 2010; Haldrup, 2004). Destinations exhibit their own temporal patterns that might be as distinctive as the landscape or architecture. Germann Molz (2010) suggests tourists actively seek out these different times. For instance, a destination may represent the past by reflecting a more traditional way of life (Dickinson and Peeters, 2012) or enable a tourist to recapture some memory of past times based on repeat visitation (Bærenholdt et al., 2004). Memories of past times are a very potent temporal force within tourism as they shape the future traveller identity (Hibbert 2013) and inform the information search process (Solomon, Bamossy, Askegaard & Hogg, 2010) and subsequent behaviour. The experience of present time in tourism is therefore multiple and, in addition to past recollection, tourism involves anticipation of future activity.

A large degree of tourism is future orientated as tourists not only imagine future holidays and future activities while staying at a destination, but also undertake a degree of planning, whether this is arranging time off work, booking transport, or checking the opening hours of an attraction. With respect to this future orientation, contemporary Westernized clock-time cultures view time as a scarce resource, a commodity to carve up into scheduled activities (Norgate, 2006). Scheduling tendencies are typical of cultures known for engaging in “monochromic” behaviours (Lindquist & Kaufman-Scarborough, 2007), where associated social norms prioritize the needs of the individual above the collective. In day-to-day life this can lead to car dependence since the car provides people with a “time shifting” device (Southerton et al., 2001) that provides flexibility to deal with the subjective time pressure associated with meeting a series of scheduled tasks.

Though tourists are arguably less time constrained, there is still much within tourism that binds tourists to clock-time regimes.

Tourism has been described as “time out” (Elsrud, 1998) which is generally interpreted as time away from work and the temporal constraints of our day-to-day existence. It is a chance to step out of our everyday routines (Richards, 1998) and find time for ourselves. A tourist’s experience of time out is very varied as some choose to do very little while others pack in more activities than they do at home (Dickinson & Peeters, 2012; Stein, 2012). Time out can also be interpreted as a stepping out of time as tourists may choose to ignore the clock-time that governs their home life and enter an “ex tempore” existence (Kwan, 2007) where activities unfold on an “as and when required” basis. This is, however, contextual as in many respects clock-time structures tourism just as much as other aspects of contemporary society. Most holidays have an inevitable time constraint linked to paid holiday from work and the temporal patterns of attraction opening hours, public transport, tour operators and meal times schedule the activity options of tourists day to day and hour by hour. In addition to these external temporal structures, tourists also have internal temporal concerns about the appropriate amount of time to allocate to activities and the best time to visit places (Germann Molz, 2010; Haldrup, 2004). This can be a significant logistical undertaking which Larsen, Urry and Axhausen al (2007) suggest takes on work like characteristics. Time allocation can generate anxiety (Germann Molz, 2010).

In addition to the temporal problems such as congestion, time also presents travel opportunities in tourism. Tourists have a much higher degree of flexibility related to both when they travel and where (Gössling, Scott, Hall, Ceron & Dubois, 2012). Assuming an awareness of localised traffic problems, tourists are better able to modify behaviour than working people. However, tourists often lack this local knowledge. Based on congestion it is self-evident that there is a degree of shared travel pattern among visitors, though this has yet to be captured and utilised in any meaningful way. Most attempts to coordinate travel and utilise spare vehicle capacity have been aimed at travel to work. However, there have been some attempts at travel collaboration through lift schemes mainly targeting young people. For example, Europe’s www.carpooling.com, though aimed at short distance commuting, is also actively used by non-residents and for longer trips. Glastonbury festival operates a lift-share scheme (Greener Festival, 2012) that actively utilises technology (for example, real-time travel updates and dedicated mobile app) to better visualise car-share opportunities (Ashden, 2012).

Space-time practices are increasingly modified by mobile media and its location-based capabilities. For example, “micro-coordination” (Ling, 2004) has become well established as people are able to re-negotiate meetings “on the go” through text and mobile phone calls. An accomplished micro-coordinator will make relatively few forward plans with friends, instead choosing to micro manage these relative to their evolving personal context. New forms of “synchronous mediated communication” (Humphreys, 2010) are leading some to suggest a new transport paradigm is emerging (Couclelis, 2009) associated with new forms of anticipation and pace (Lemos, 2010).

This overview illustrates three significant strands of literature that point to time playing an important role in tourist travel behaviour and mobility: time is central to travel demand management and individual travel mode choices both in tourism and everyday life; time is conceptually important to tourism and is experienced in multiple ways; and new technology using mobile media is altering our conceptualisation of space-time travel behaviour. If we are to affect a change in transport behaviours, understanding how tourists' perceived and actual relationships with time impact on decision-making about transport behaviours is important.

Methodology

The study was interested in the temporal and spatial flow of people, objects, information and ideas and therefore required the application of mobile methods (Baerenholt et al., 2004; Buscher & Urry 2009) to capture tourists not only on the move, but also over time. In other areas of transport research, data have been captured by methods such as accompanied trips (for example, "walking with", Sheller & Urry, 2006). However, in a tourist context, trips are rarely well contained, either spatially or temporally, and involve a high degree of spontaneity making accompanied trips time consuming, difficult to organise and potentially intrusive for participants. Therefore alternative methods were needed that could capture data from participants on the move. Here data were captured using a one-day participant generated photographic and diary record with a follow up interview (the diary-photograph, diary-interview method). This approach is similar to that applied by Line, Jain and Lyons (2010) to explore use of Information Communication Technology in everyday travel and the diary-photograph, diary-interview method developed by Latham (2003). The research also sought to understand the spatial and temporal patterns of participants with data captured using a purpose built smartphone app, Traverse, that employed remotely monitored trip research (Edwards & Griffin, 2013).

The study was based at a campsite in a rural destination on the UK south coast. Camping tourism provides a spatially bound community for study, but importantly also accounts for 17% of the total overnight stays in the EU (EuroStat, 2012). The campsite was purposefully selected for the Sixth Sense Transport project. As well as being characteristic of UK campsites in rural areas, the site managers were willing to provide access to participants and support a variety of interventions over a two year period. The campsite was medium size relative to campsites in rural destinations in the UK and located on a bus route, approximately 5km from a seaside town and 1km from coastal walks. A maximum variation sampling strategy was employed at the campsite to engage with a range of tourist types based on observed group and age characteristics (see Table 1).

[Table 1 here]

Given that not all participants would have access to a smartphone for the use of the Traverse app, iPhones were loaned to participants. Participants were asked to carry the iPhone and launch the Traverse app whenever they left the campsite, even if this was just a short trip such as to walk the dog. Traverse was designed to record user location, using

GPS and a time stamp, and, on each use, Traverse requested input of mode of transport. Data were therefore captured on the spatial location of users over time and by travel mode. To capture diary material participants were provided with a notebook and pencil to record notes and the iPhone provided for Traverse enabled capture of photographs. Participants were asked to reflect on the following in their diaries:

- Routines or repeated patterns.
- The order of events.
- The extent to which activities were planned.
- Rough allocation of time to activities, places, travelling.
- Any activities that were time constrained.
- The time demands made by other people, places visited or things needed.
- Whether the participant felt in control of time.

Using this method, interviews should ideally be conducted as close as possible to the recorded events. In a tourism context it is difficult to arrange specific interview times due to tourists' tendency to on-going re-negotiation of activities. Experience showed the best time to meet participants was the morning following their one-day diary activity. Interviews took place beside each participant's tent. Whilst each interview focused on one participant, the social nature of tourism often resulted in additional contributions from members of the participant's immediate party, most commonly from their partner. A semi-structured interview strategy was used beginning with a narrative approach, in conjunction with diaries and photos, to explore the temporal sequence and stories of the day. 29 interviews were conducted during July to September 2012. Each interview was recorded and interviews lasted around 40 minutes. Given the participant commitment, each participant received £10 in vouchers to spend at the campsite shop.

The analysis followed two strategies. The first strategy explored individual narrative structures to understand people's various movements and the temporal issues that impact on transport choices. The second strategy involved cross-case thematic analysis to identify generic concepts.

Findings

Participants found it hard to articulate the temporal nature of their travel. While people are well versed in talking about their tourist experiences, they are not used to reflecting on time, especially in a relatively abstract way. Following the diary instructions and narrative interview strategy, participants utilised a chronological reporting strategy, that involved reporting of the events as they unfolded, for example, "I did a walk by the seaside and I had some shopping to do, then I had lunch there and then I went to several shops" (Macy). Some respondents included much more specific references to clock-time. For example: "1 o'clock, we had our lunch there... canoed out at about 3, no, half 2 maybe... we came back at half past 4" (Carter).

Both strategies reference past time in a linear way reflecting the dominant understanding of time in contemporary society, "this homogeneous and desacralised time has emerged victorious since it supplied the measure of the time of work" (Lefebvre, 2004, p. 73). Through a series of probes on the unfolding of time, time planning and time relative to

other people, places and things, the interviews developed more depth to the temporal understanding. Conceptually the data orientate into three temporal themes: time fluidity; daily and place related rhythms; and control of time.

Time fluidity

Without exception, participants experienced a degree of fluidity to their day. While some plans were made, there was little or no sense of having to do something or be somewhere at a specific time, and planned activities were open to amendment as other opportunities arose as Harriet describes:

“we were going to go over to Dancing Ledge and spend the day there but we just could not be bothered. It was sunny, so we just sat out here and chilled, so till the early afternoon and then we went out to Dancing Ledge... because we can go along the flow a bit and change things, to adjust to how things are, then I feel we can dictate what we want to do and when we want to do it really”

Time fluidity was often organised around a notional ‘must do’ list, however, participants felt no commitment to ticking off the items as “things may drop off the list” (Sally). Underlying this was a desire to “go with the flow”, a term used by several participants, with some reflecting more deeply on this fluid time experience. For Mark it was about experience time or being in the present:

“Your body tells you everything. When you are hungry, you cannot think of anything else, when you need to go to the toilet, you cannot think of anything else, it is part of nature, is it not? You have got your own body clock and it tells you what to do, if you just listen to it, then it tells you what, you know, what you need. It is just about turning the timetable and trying to get rid of it, just letting things happen naturally... it is all about control and we are trying, sort of, you know, having experience... in a linear sense, of like going there and seeing that ta-da-da-da you know. Or you can actually just be and allow everything just to come to you, which it does, but in a different rhythm, it is not, you know, it is maybe a bit slower or whatever, but you know, things happen if I just stay still.”

Mark acknowledges that being in the world is a bodily thing that does not always need on-going cognitive monitoring of what happens next. His body “actively assumes” time and space (Cresswell, 2003, p. 276).

To articulate what they meant by fluid time, people referred to the structuring of everyday life and a desire to step away from the need to be somewhere by a certain time or a need to do so many activities.

“I’m a primary school teacher, so I have to be up relatively early, doing something at a specific time, it’s just nice to just be able to take it at your own pace and relax... it’s nice to just be able to do things that I want to do and eat at the times that I want to rather than set slots” (Jim)

Clock-time is at odds with the rhythms of our bodies (Adam, 1995) and it is evident in Jim's description that he is attempting to re-engage with a more natural rhythm relative to his body's needs. As Jim indicates, home life is very structured for most participants while tourism is very fluid. The accounts represent this tourism time as different to everyday life and a "time off" (Stein, 2012) that is not determined by others. This is a particular feature of rural tourism (Sharpley & Jepson, 2011) where time becomes less restricted and deceleration plays an important role (Matos, 2004). However, subsequent analysis demonstrates that the participants' use of time was not always as loose as they claim.

Some participants explicitly linked temporal fluidity with travel mode. Walking and car travel were dominant modes, both offering individual autonomy and a high degree of flexibility, albeit with distance constraints relative to walking. Flexibility is a significant factor in car travel behaviour since users can choose exactly when they want to leave and alter plans en-route (Anable & Gatersleben, 2005). This flexibility is not afforded by public transport in rural areas:

"We get the bus from Swanage sometimes, I think the buses are a bit variable, I am not sure there are that many knocking around and it is quite easy if you have got a car, it is just easy to drive around" (Gordon)

"we live in London and we're so used to being able to go to any kind of restaurant and just not have to worry at all about being able to get public transport back, whereas obviously in rural areas public transport can be difficult anyway particularly after nine o'clock, ten o'clock or something." (Jim)

Here both Gordon and Jim indicate their temporal fluidity may be compromised by public transport. Gordon, in particular, notes the ease of car use.

Place rhythms

Despite the fluid nature of people's days and relatively ad-hoc arrangements there was a daily rhythm and routine. With few exceptions, participants slept late and were in no rush to get going in the morning, much as you would expect in a tourism context.

"The way we always work is if the children are happy, then we have a good holiday, so yeah, normally we do not have a very early start... when they get up, they want to play with their friends, so you know, we are quite happy to sit here for a couple of hours, read, get a bit peace and quiet, you know, this makes a change" (Sally)

This led to a peak in departures from the campsite around 11am, with few departures before 10am. This was best captured by the Traverse data, a sub-set of which is presented in Figure 1. This shows people beginning to leave the campsite between 10.00 and 11.00. The patterns also begin to coalesce back around the campsite 17.00 to 18.00. Distinctive temporal and spatial patterns are also evident at places within the destination. For instance, Figure 1(b) illustrates a morning pattern when people head to a popular beach.

Later in the day people return via the nearest town to the campsite, in order to buy food (Figure 1(e)). The data also reveals pub visits 21.00 to 22.00 (Figure 1(f)). Therefore, despite the apparent ad-hoc arrangements, the tourists' assumed distinctive place related patterns. These reflect the multiple sustained time-space routines which Edensor describes as a kind of 'place-ballet' (cited by Cresswell, 2003, p. 279).

[Figure 1 here]

Germann Molz (2010) discusses how daily rhythms are both anticipated in tourists' imaginations of place and then enacted in tourist consumption of place. Destinations have temporal rhythms of place, a pace (speed and tempo) and flow that is characteristic (Bærenholdt et al., 2004; Germann Molz, 2010; Haldrup, 2004) and creates a sense of place which Edensor (2010) likens to a heartbeat. Despite the churn of visitors, the individual patterns of people, which Hägerstrand observed in his time geography analysis (Neutens, Schwanen & Witloz, 2011), coalesce with the place into daily rhythms and flows, that also embrace natural factors, such as the prevailing temperature and weather, and human factors like special events. Each new visitor adapts to the movements encoded in the destination (Edensor, 2010) and can become habituated to temporal patterns they are unaware exist (Adam, 1995). These space-time routines, together with the availability of transport infrastructure, influence the transport choices available to tourists (Dickinson & Peeters, 2012). Therefore, while tourists have time autonomy, the absorption of visitors into the flow of place generates destination congestion. Explanations for this are discussed in the next section. This flow of place, however, also yields a significant transport opportunity.

Both the temporal routines and the 'must do' lists of participants exhibited similarities; however, there is currently little opportunity to harness this. Given campsites (and many other forms of tourism accommodation) host a spatially bound community, albeit temporary in nature, there is scope for travel collaboration. Preliminary analysis suggests scope for collaboration among visitors to campsites (Filimonau, Dickinson, Cherrett, Davies, Norgate, Speed, 2013). An example of this is illustrated in Figure 2, a storyboard developed with, and for, project participants to explain concepts. This illustrates how campsite visitors might tap into the knowledge that other members of the campsite community are visiting shops on the way home to avoid a 10km round trip for a forgotten item. This moves away from the atomised individual to a network of actors who are able to realise space-time opportunities, especially given mobile communications technologies.

[Figure 2 here]

Control of time

Despite the time fluidity described by participants it was evident that there were a variety of temporal control elements. There was relatively little planning with respect to tourism activities on a day-to-day basis and, aside from the notional list of things to do, participants engaged in fairly minimal planning either the night before or on the actual morning.

“it was dictated by the weather, so we were choosing whether to do this walk yesterday or do it today, depending on whether we wanted to do it in the sun or possibly overcast conditions, so it was literally a decision over breakfast to go” (Marcus)

Some participants insisted there was no planning at all. For example, as Mark describes, “because things happen by themselves, you do not need to [plan], you know, you just experience the moment instead of trying to control the moment”. Mark was particularly keen to immerse himself in experience time.

Participants reflected on the time demands made by other people, things and places. Participants took a flexible approach to place and acknowledged that sometimes they might move on more quickly if the opportunities afforded were exhausted, but more often participants seemed to find places demanded more of their time. Sophie describes an unexpected opportunity:

“we hooked into this story-telling and I was thinking it would be half an hour but it ended up being an hour and twenty minutes which was lovely... we had to continue and finish it”

Place experience and knowledge gained by word of mouth from local people or other visitors also played a role. In this way the ‘must do’ list evolves throughout **the stay**, contingent on experience, actual events and, as discoveries are made, relative to the time needs of places. Accumulated place experience and knowledge also enable participants to avoid temporal problems such as attraction crowding or road congestion. Given the patterns of repeat visitation, some participants had good local knowledge. In addition, even first time visitors exhibited an intuitive familiarity given their experience in similar UK destinations. Therefore most participants were very aware that certain attractions would be crowded under particular conditions.

“if we are going to town, we would go in the morning because we know that in the afternoon it is really busy and you cannot park... if we are going to go somewhere where we know it is going to be busy, we avoid business by going in the morning, by going first thing” (Saul)

“if it was a really hot day, we would possibly go there [a popular beach] later on because it is a lively beach but, yeah, I did not really like it last year because of that, the packed in sardines (laughs)” (Harriet)

In the context of round-the-world travel, Germann Molz (2010) discusses how tourists wish to allocate the right amount of time to place. Participants in this study were relaxed in their approach which reflects a much greater understanding of the place visited as most participants were domestic tourists. Given the list of alternative activities, participants simply made substitutions as appropriate. However, as Saul and Harriet’s quotes

illustrate, participants did have internal temporal concerns about the appropriate time to visit places reflecting the findings of Germann Molz (2010) and Haldrup (2004).

More overt than the time demands of places were the time demands made by other people within the participants' immediate group. For example:

“I think we have to allow a bit more time because it takes longer for eight people to mobilise and get moving” (Nicholas)

Relationships with other people were one of several factors that were attended to when planning. The presence of children in a group often shifted the focus of planning attention to the child's needs. For example, Louise suggests “if she's [Louise's daughter] enjoying it, I tend to be”. Therefore plans often revolved around children's meal times, energy needs (how long they could walk without a break), or attention space (places that would absorb children's attention). For instance, Jacob describes accepting time would be spent on the beach despite poor weather conditions:

“it was horrific, it was really, really blowing a gale on the beach and we said, regardless of what the weather was like the next day, we were going to go on the beach anyway because that is what the kids wanted to do”.

The items needed during the stay also influence time planning. For instance, Sally describes “if we go anywhere, we have got to take enough food” and Janet describes driving to shops to buy children's shoes:

“Charlie then declared that the two sets of shoes that we'd packed were causing him problems and he sort of unleashed this enormous blister, so we called in on the way back through Swanage, which we had to go through anyway, to pick up some 'cros' for him.”

Planning was also weather related given the outdoor nature of rural tourism and Jim illustrates why planning is relatively immediate and requires alternative options:

“we'd probably choose like one thing that we really wanted to do and base the day around that, but then we have in mind that there is other stuff that we may or may not want to do and particularly dependant on the weather... we tend to have a couple of like emergency wet-weather plans and then stuff that if it's a really nice day, we do that instead.” (Jim)

Travel planning is crucial to reduce uncertainty and enhance tourist satisfaction (Zalatan, 1996) and has been studied from a number of disciplinary angles (Jeng & Fesenmaier, 2002). Research has concentrated on consumer purchasing decisions, intentions and motives behind the destination, transport mode and holiday activities selection (Wong & Yeh, 2009). Once tourists have arrived, the travel plans are short term and more fluid (Stewart & Vogt, 1999) and multiple factors influence planning at the destination (Bansal & Eiselt, 2004).

Aspects such as weather changes, place related discoveries and things suddenly needed are ‘incidents in time’, unexpected moments that caused people to re-evaluate their plans. For example, Mary describes needing to find a bike shop to get parts for her partner’s bike. This could be conceived as a negative event, however, it was not construed as such by Mary who took the opportunity to escape the heat (it was an unusually hot day) and read a book. It was just something that happened and they melded their day around this. Similarly, most parents acknowledged temporal impacts made by children. Sophie describes how “it would have been good to know if there was a lift going from the pub to here because by that time she [daughter] was exhausted”.

Being able to maintain fluidity was very important to participants with several drawing attention to scheduled activities causing a loss of control of time:

“I think there may be a time stress tonight. We were going to try and go to Weymouth for the opening Olympic ceremony so, we’re thinking traffic’s going to be [bad]... that could be a stress because of the fact that it is going to be the fireworks or something at 7 o’clock and we’d quite like to be there to see the opening ceremony” (Janet)

“you lose control if you start saying I have got to do this and this perhaps” (Mary)

This scheduled time replicates the temporal experience in day-to-day life and is known to generate a degree of time stress (Roxburgh, 2004). Participants also discussed other holiday contexts that they would avoid, such as a package holiday, which they associated with more organised and structured time. “I did not enjoy that so much because I almost felt I was on a schedule” (Carl)

Participants also described a variety of ‘control points in time’ which sometimes presented space-time constraints. For example, the campsite shop closes at 7pm or the last bus leaves at a specific time. Participants were particularly mindful of the need to factor in food, especially with children in the party and since it is a perishable resource:

“If you go to the beach, say, or go somewhere first and then go late afternoon to get your shopping, there is nothing in the shop. You have to go in the morning to get reasonable things but then if you buy it in the morning, with it being hot, you have not got a lot of places to store things” (Sally)

At home refrigerators and freezers provide “time storage” devices (Southerton et al., 2001) that have radically altered our shopping patterns (Watkins, 2003). However, camping brings people back to a more basic relationship with produce and the purchase of food makes a routine temporal demand. These temporal control points align tourists with the “everyday time” that is still evident around them as they interact with tourism employees and local residents (Stein, 2012).

The combination of ‘incidents in time’ and ‘control points in time’ led participants to make on-going adjustments in present time, responding to a varied set of individually relevant contextual factors. In this sense participant appeared to adopt a ‘responsive time’ strategy.

Discussion

The tourist day unfolds in relation to the overall rhythms of place; tourists’ practice and reinforce these rhythms and the rhythms, in turn, reinforce behaviour. “Because people act in certain preconscious ways, any given order tends to get re-established and reproduced owing to the “naturalisation of its own arbitrariness” (Bourdieu cited in Cresswell, 2003, p. 277). “Everyday life remains shot through and traversed by great cosmic and vital rhythms: day and night, the months and the seasons, and still more precisely biological rhythms. In the everyday, this results in the perpetual interaction of these rhythms with repetitive processes linked to homogeneous time” (Lefebvre, 2004, p. 73). The individual tourist succumbs to a variety of temporal forces that reinforce travel behaviour decisions that are not always sustainable. The natural temporal rhythms of people on holiday add to peak traffic flows. While these are less marked than the peaks associated with commuting and work, they exert pressure in a rural environment with limited infrastructure.

As this analysis illustrates, time fluidity was important to people, but as the interviews unfolded it was clear that time incidents and control points also influenced travel behaviour decisions. Opening times of shops and attractions, and scheduled events determine access to key resources and influence visitor flows. Where time appears short, visitors resorted to car use even when their intention was to avoid this. Cass, Shove and Urry (2004) argue that some forms of transport are only possible for those with “time to spare”. While tourists inherently have more time, incidents and temporal control points can lead tourists to trade off a quality experience for speed. This is best explained through the experience of multiple competing forms of time. The idea that time is multiple is not new (see Adam, 1995; Middleton, 2009), however, it is difficult for people to conceptualise this. The participants demonstrated the existence of multiple times by reference to: my time; my child’s time; the food’s time; the attraction’s time; the place time; the bus time; clock-time; the weather’s time. Where multiple times briefly co-exist they compete for attention with each individual determining which receives most attention. “Time is experienced differently by individuals depending on the importance of the experience” (Jäckel & Wollscheid, 2007, p. 86) and problems arise due to time-space coordination (Jarvis, 2005; Southerton, 2006). For parents ‘my child’s time’ dominates. For women in particular, their time sovereignty can be compromised by the time demands of others (Davies, 2001). The personal experience of these multiple temporalities will have a strong influence on individual travel needs and behaviour.

The desire to embrace temporal fluidity embeds that concept with some value and meaning. The participants’ experiences of time reflect slow travel where taking time out is a positive feature in which pauses, inactivity and the ability to respond to place encounters is valued (Dickinson, Lumsdon & Robbins, 2011). Palmer (cited in Mullins,

2009) argues that higher travel speeds negatively affect tourism's sustainability since learning about unique places and establishing personal relationships with destinations lie at the heart of sustainable tourism. However, the car provides flexibility and speed and while participants were keen to walk, cycle or use public transport, the benefits of the car can outweigh other modes.

The findings highlight a number of temporal situations within a destination area that interact with place locations in a variety of ways to influence travel behaviour. Within rural destinations attractions are spatially dispersed and often require visitor travel to places off main arterial routes and public transport networks. This is largely determined by natural features and entrepreneurial business opportunities historically developed with little regard to transport access. In the UK, the weather is relatively unpredictable and plays a significant role in temporal flows of participants given the outdoor context of rural tourism. In countries with more stable weather, it will play less of a role, though there may be predictable weather events, such as late afternoon thunderstorms in mountain regions, that impact on traffic flows. Short-term planning often reflected uncertainty about the weather leading to last minute decisions and changes to plans.

While many of these temporal situations would be difficult to address there is scope to better manage the visitors' understanding of the local temporal rhythms. Mobile technology is developing context based systems that are able to deliver unique personalised information to users referenced to their current location in both space and time. This idea was explored with project participants and led to the emergence of a storyboard (Figure 3) that outlines how a context-based system might deliver relevant tourist travel advice to enable users to avoid temporal congestion through modified travel behaviour. The scenario in Figure 3 initially provides the user with advice to avoid congestion and ultimately, by suggesting an alternative attraction closer to the current location, avoids a car trip altogether. The ideas described in Figures 2 and 3 are currently being developed in a collaborative travel app that will be field tested in 2013. Technological interventions such as this introduce a temporal juxtaposition since many people choose camping in order to engage with a simpler, 'past time', that is devoid of the technological devices that proliferate in their day-to-day lives. Despite this, many participants utilised mobile media to organise short-term planning and in this way two time frames overlap adding to the multiple experience of time.

[Figure 3 here]

Conclusion

This paper has argued that temporal issues should not be overlooked in an analysis of travel behaviour within tourist destination areas. It shows there are a variety of issues that present challenges for more sustainable travel. Time fluid tourists desire flexible travel opportunities and this is best achieved through personal modes of transport. While walking was popular in the rural setting studied, car travel provides a high degree of convenience to visitors and is perceived to afford flexibility (Anable & Gatersleben, 2005). Despite the desire for fluidity, tourists were absorbed into place rhythms and flows and thus reproduce congestion and exceed local car park capacity. A variety of temporal

incidents and control points aligned to linear clock-time present a challenge to tourists. While the desire to go with the flow mediated the direct impact of unexpected incidents, there was often the need for transport flexibility and speed to achieve objectives. The car provides a useful time-shifting device that enhances opportunities in this respect.

The analysis draws attention to clock-time tensions embedded in contemporary society as people see tourism as a space to escape from their usual time bound routines. Clock-time is a relatively recent phenomenon in human society and other commentators (see Adam, 1995) have noted that this linear regime, with a series of scheduled events, is at conflict with a more humanistic approach to time. Transport systems are rooted in clock-time regimes through the need to coordinate arrivals, departures and capacity across space-time. Car travel provides a degree of individual freedom that is highly valued, though still bound to a variety of external time structures such as facility opening times. Given the temporal freedom sought by tourists and the opportunity afforded by car travel, it is not surprising that car travel is so routinely practiced in rural tourism. Aside from the spatial constraints within rural tourism, time is a significant barrier to behaviour change from car to other modes of transport that cannot be overlooked.

Tourists' temporal freedom is also compromised by a multitude of competing forms of time. Whilst the concept of multiple times and the possibility that individuals might experience time in more than one way is widely discussed in the geography and sociology literature (see Merriman, 2012; Wajcman, 2008), it has rarely been examined with respect to transport (see Middleton, 2009 for an exception). The transport literature is increasingly aware that our understanding of time is changing but has yet to grasp the travel implications of multiple temporal reference frames for individuals. The analysis presented here demonstrates how participants experience multiple times, each with attendant demands and some with specific transport needs. In addition, visitor travel is embodied and derived from rhythms that are absorbed from the destination, determined by biological routines and altered by other people, place encounters and the things needed. These rhythms reinforce travel behaviour choices.

Given that we are at a pivotal moment with respect to the emergence of a new socio-technical substrate, in the form of mobile technology that has significant space-time capabilities, there is a key emerging research opportunity. If we are to harness technology to assist in more sustainable forms of travel then we need to better understand the role played by time. From this exploration of time in tourism destination travel, three key messages emerge that should influence the design of tourist destination based travel systems. First, given the desire for temporal fluidity, transport systems need to evolve beyond clock-time regimes. Tourists seek respite from scheduling demands and tourism and travel information should seek to better manage this. Second, temporal forces favour personal modes of transport (car, walk, cycle), especially in rural areas where public transport is unlikely to provide adequate flexibility. Greater attention therefore needs to be paid to these modes. In this respect, the car is highly personalised and perceived to optimise travel fluidity and speed. This is currently unsustainable and, given the poor success rate of travel behaviour initiatives designed to reduce car dependence, there is a need for imaginative initiatives. Sustainable travel strategies are needed that adopt a

positive and proactive stance to car travel that realises opportunities to utilise spare capacity in both public and private vehicles across the transport network. Research is needed to explore how highly individualised space-time scheduling and vehicle use might embed more collective strategies. Third, in order to realise network potential, mechanisms are needed to visualise travel opportunities and constraints in both real-time and the immediate future based on historic data feeds representing destination rhythms and routines. New technology has the capacity to reveal highly personalised travel information to tourists to enable them to access localised space-time opportunities that demand less travel and are responsive to on-going adjustments.

Mobile social networking tools are emerging to influence behaviour change in transport leading to new forms of transport networks that make visible other people, their transport plans, objects in transit and modes of transport (Davies, Lau, Speed, Cherrett, Dickinson & Norgate, 2012). Such systems will have implications for the temporal planning of travel and subsequent travel behaviour. To this end we need to better understand how time perception and use, which varies across cultural and demographic groups (Adams & van Eerde, 2010; Spears & Amos, 2012), impacts on sustainable mobility patterns. The data also raise questions about a more structured time encountered in other tourist settings that requires further research.

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Table 1. Participant information

Participants (names are pseudonyms)	Gender	Age	Camping experience
<i>Family groups</i>			
Janet	F	30s	Repeat visitor
Sophie	F	40s	Repeat visitor
Sally	F	40s	Repeat visitor
Louise	F	40s	Repeat visitor
Teresa	F	40s	Repeat visitor
Jacob	M	30s	Repeat visitor
Graham	M	40s	First time visitor
Carter	M	40s	First time visitor
Oscar	M	40s	First time visitor
Nicolas	M	40s	Repeat visitor
Carl	M	50s	First time visitor
<i>Couples</i>			
Mary	F	20s	First time visitor
Harriett	F	30s	First time visitor
Julie	F	30s	Repeat visitor
Claire	F	40s	First time visitor
Luke	M	20s	First time visitor
Julian	M	20s	First time visitor
Patrick	M	30s	First time visitor
Marcus	M	30s	Repeat visitor
Mark	M	30s	First time visitor
Saul	M	40s	Repeat visitor
Alex	M	40s	First time visitor
Jack	M	50s	Repeat visitor
<i>Singles</i>			
Macy	F	50s	Repeat visitor
Darius	M	30s	Repeat visitor
Gareth	M	30s	Repeat visitor
Donald	M	40s	Repeat visitor
<i>Large groups</i>			
Jessica	F	Late teens	Repeat visitor
Gordon	M	20s	Repeat visitor



Figure 1(a)



Figure 1(b)



Figure 1(c)



Figure 1(d)

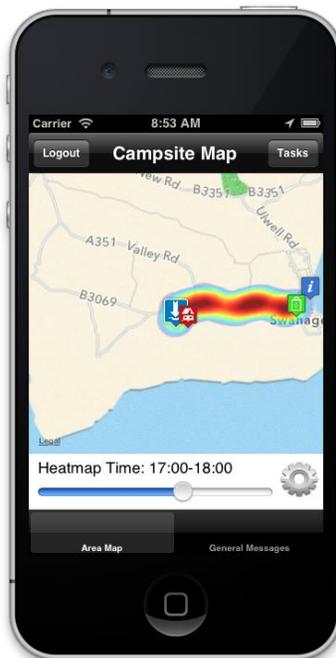


Figure 1(e)

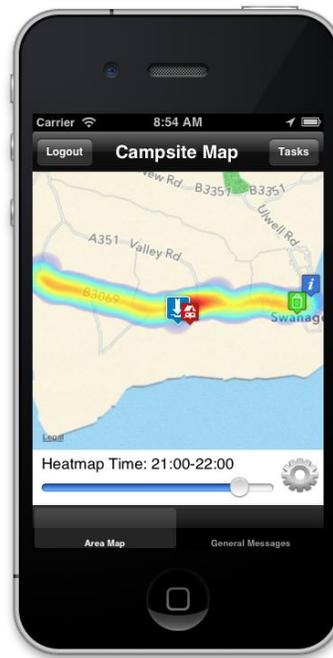


Figure 1(f)

*Based on six active users, 6-10 August 2012.

Figure 1. Traverse data visualised through a smartphone app.

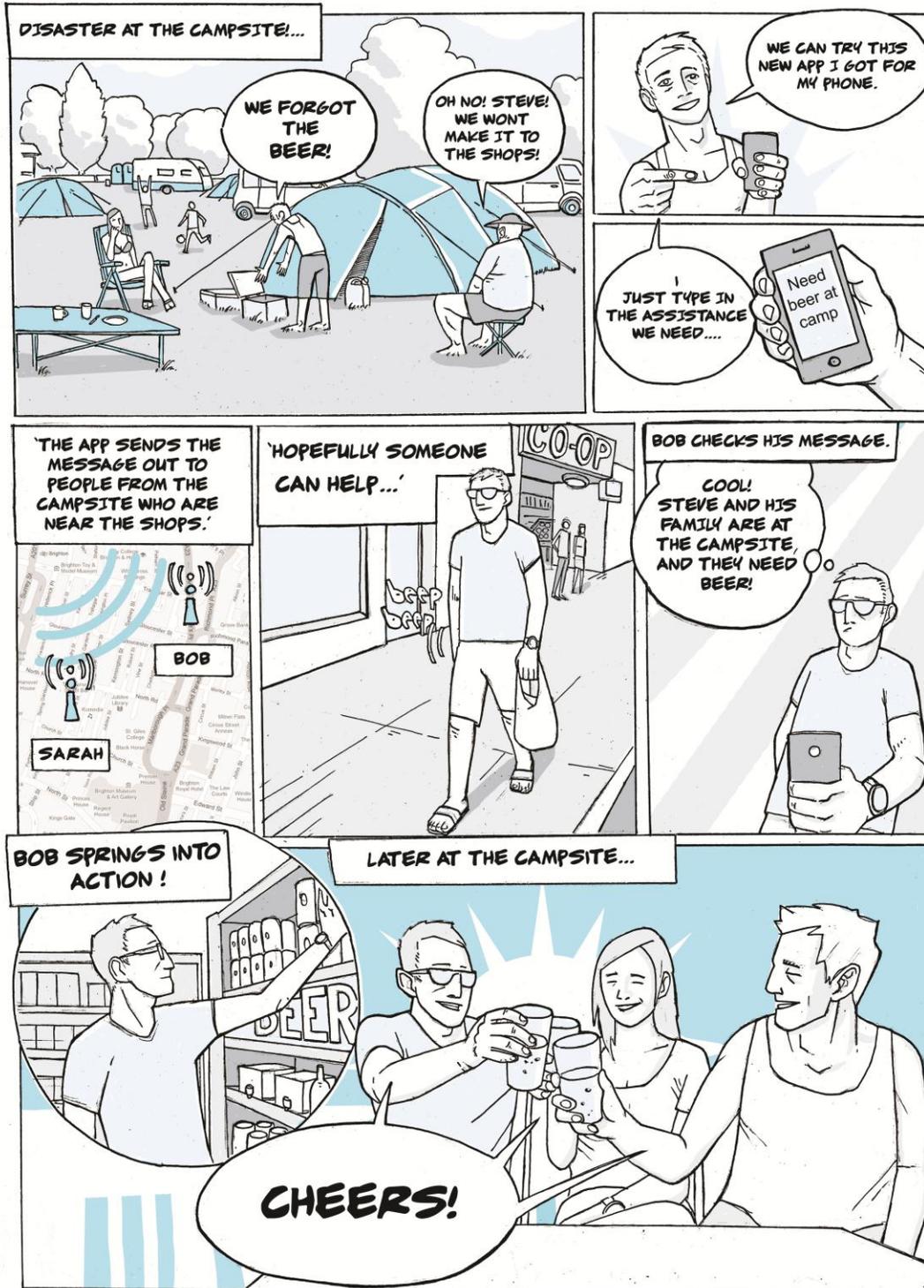


Figure 2. Storyboard illustrating a collaborative shopping concept.

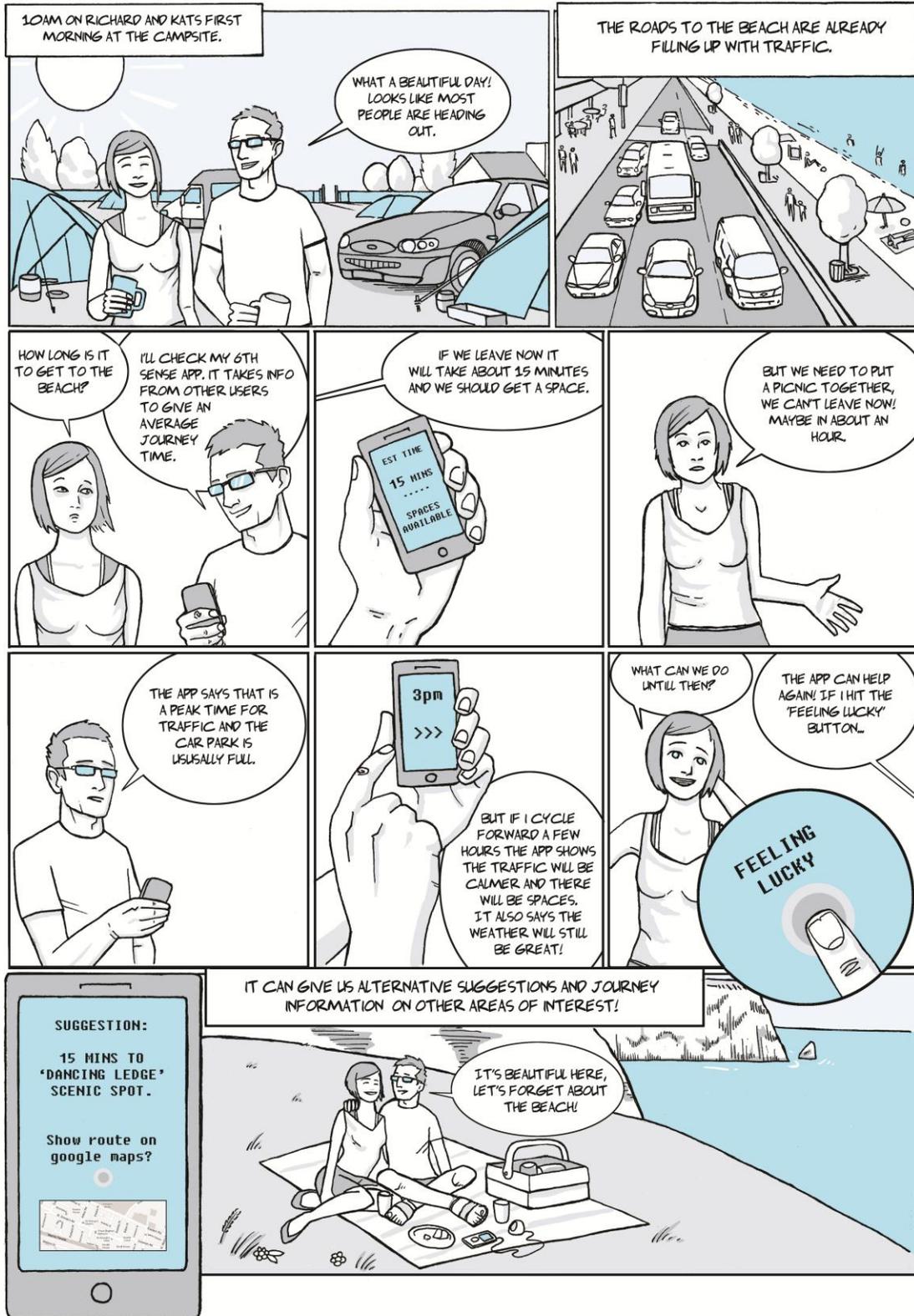


Figure 3. Storyboard illustrating a congestion avoidance concept.