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EVERY STEP IS MOVING ME UP – AN INFORMATION BEHAVIOUR STUDY OF HIKERS ON THE WEST HIGHLAND WAY

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Abstract

This thesis explores the information behaviour of hikers on the West Highland Way (WHW), a long-distance hiking route in Scotland. This route has not been studied from an information science perspective before, placing findings in a novel context. To do so, the research focused on how embodied information was experienced by hikers on the WHW, how they sought, gathered and shared information in situ and how their information behaviour might inform wellbeing benefits during their walk. Ethnographic methods were used to conduct interviews in situ and then the qualitative data was subjected to reflexive thematic analysis, revealing a number of discoveries. The WHW is a rich field of embodied information, containing environmental embodied information, embodied information from within, embodied information from others and embodied information recorded using technology, developing new understanding of embodied information in physical activities. Information behaviour on the WHW was characterised by low information needs, which ran counter to everyday life information settings, and this made the activity pleasurable and memorable, placing information needs in a novel context relating to serious leisure activities. Wellbeing benefits were widely reported, principally in improved mindsets of walkers. These, and other benefits, were informed by environmental embodied information, low information needs, exchange of social information and immersion in the cultural heritage of the route. Reflections on this study show that embodied information and wellbeing benefits are ripe for further exploration from an information behaviour viewpoint, particularly in physical activities and creative fields, giving a more holistic view of information behaviour. Recommendations are made for the WHW to become a European Cultural Heritage Route, as well as proposals for the maintenance and promotion of this, and other, long-distance walking routes. Through this study, embodied information, information needs and wellbeing benefits have been placed into novel contexts for information behaviour research.

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1. Introduction

1.1 A very brief history of walking

"I believe that I now understand in some small measure why the Buddhist goes on pilgrimage to a mountain. The journey is itself part of the technique by which the god is sought. It is a journey into Being; for as I penetrate more deeply into the mountain's life, I penetrate also into my own. For an hour I am beyond desire. It is not ecstasy… I am not out of myself, but in myself. I am. To know Being, this is the final grace accorded from the mountain." (Shepherd, 2008, p.108)

Walking is one of the most basic human activities, it was our first mode of transport and over time has evolved in myriad ways. While it still remains a means of getting from point to point, it has also gained cultural significance through writings and musings from the times of Ancient Greek philosophy through to present day (Coverley, 2012). Walking has encompassed pilgrimage (Innocenti, 2023), political protest (Solnit, 2001), inspiration for poetry (Coverley, 2012), a form of tribute (Herzog, 2014), a method of creating art (Pujol, 2018) and a means of reflecting on life (Shepherd, 2008).

Walking, in the form of rambling, hiking, mountaineering and long-distance walking has also evolved into a popular leisure pursuit (Davidson and Stebbins, 2011) and is one of the most popular activities in the UK (Visit England, 2016;Scottish Natural Heritage, 2018). In recent years there has been research conducted into various forms of walking from an information science perspective, including: technical hiking (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022); long-distance walking (Asimakopoulos and Dix, 2017;Hyatt, 2017;McCrickard *et al.*, 2018;Dix, 2020) and walking pilgrimage (Jørgensen *et al.*, 2020;Innocenti, 2023). In seeking to further develop knowledge of walking from an information science viewpoint, this thesis aims to explore the information behaviour of hikers on the West Highland Way, a long-distance walking route in Scotland.

1.2 Research approach

This research has sought to expand on work in the information science sphere that has examined the activities of long-distance walkers and walking pilgrims in a range of locations: a walk around the land and sea border of Wales; the Pacific Crest Trail

in North America, a technical hike across the Scottish Highlands, and on the pilgrimage route of Camino de Santiago (Hyatt, 2017;Dix, 2020;Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022;Innocenti, 2023).

To do so, it was proposed to explore long-distance walking through the concept of embodied information, something which is posited to be observed in physical activities (Cox, Griffin and Hartel, 2017), by creating an understanding of how walkers may use embodied information from the natural environment around them, from within, from fellow walkers and through the use of technology. The research has also sought to use Hektor's information behaviour model (Hektor, 2001) as a frame for analysis of the research data. This is a model which has been called to be used further in the field of information behaviour to try and standardise reporting of findings, so that understanding and comparison of information behaviour studies can be more insightful (Hartel, Cox and Griffin, 2016). Further to this, the research has also sought to explore the wellbeing benefits present in the activity and how they may link to information behaviour, using the NEF/NHS 5 ways to wellbeing as a lens for analysis (New Economics Foundation, 2008;Aked, 2011).

1.3 Research context

The location of this research is the West Highland Way (WHW) in Scotland, a 96 mile long walking route from Milngavie, on the outskirts of Glasgow, to Fort William in the Highlands (Loram and Newton, 2019). Originally conceived in the 1960's, the WHW was officially launched on October 6th 1980, the first of its type in Scotland, by the Countryside Commission for Scotland and is now the country's most popular long-distance walking route (West Highland Way, 2021). The WHW has an estimated 120,000 visitors a year, of which 36,000 are walking the length of the route, and they contribute £5.5 million a year to the local economies along the way (Scottish Natural Heritage, 2018).

Walkers on the WHW have not previously been considered from the field of information science and the intention of this research is to explore the information behaviour of hikers on this route.

1.4 Research aim, questions and process

The aim of this research project is to provide an exploratory account of the information behaviour of hikers on the WHW, by investigating hikers in situ as they

travel the route. To explore this, the following research questions were posed for this thesis:

1. How is embodied information experienced by long-distance walkers?
2. How do long-distance walkers seek, gather, and share information in situ?
3. What are the connections between long-distance walkers' information behaviour and their wellbeing?

These research questions were developed over the course of my PhD studentship with assistance from my supervisors, Dr Perla Innocenti and Dr Mark Dunlop. They have been adapted over the course of the research project, initially there was more of a focus on the concept of walking pilgrimage but, due to feedback from a first phase study, this focus was softened. Despite this, there had been an aim to look at information behaviour of hikers on the WHW from the outset, to explore embodied information present in the activity and to consider possible wellbeing benefits from walking the route.

The processes used in this research were to employ ethnographic methods, to situate myself within the activity and to conduct data gathering in the field. Through two different data gathering exercises, both primarily or wholly conducted in situ on the WHW, a large volume of data was collected through interviewing hikers on the route. This qualitative data was then subjected to reflexive thematic analysis for findings relevant to the three research questions stated above. From this, findings are presented and discussed in this thesis. The interview data is augmented with some quantitative demographic data, as well as excerpts from the ethnographic record, including photographs and audio recordings.

1.5 Significance of the study

This study is significant in expanding on current information science research on long-distance walking and walking pilgrimage (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022;Innocenti, 2023) by locating the field of research in a novel site, the WHW. This has helped to generate original findings which furthers knowledge related to long-distance walking, physical activities, higher things and serious leisure pursuits.

The use of ethnographic methods, particularly in situ recruitment on the site of the WHW, has been demonstrated to be an efficient and fruitful method of data

collection for an information behaviour study. The benefits and results of this approach point to it being an effective means of conducting research on long-distance walking, as well as other physical pursuits and hobbies.

This study also presents a rich description of embodied information present in the activity, thus helping to build on previous studies exploring the concept, by providing detailed descriptions of embodied information found in the physical activity of long-distance walking. In turn, this can inform future studies into other active pursuits to build an understanding and vocabulary of different types of embodied information. Combined with previous and future studies, this can give a more holistic view of human information behaviour and aid research into the relationship between the provision of information services and embodied information, so that they can be designed to accommodate all bodies.

This research also represents an extension of the use of Hektor's information behaviour model (Hektor, 2001), something which has been called for to improve comparability of information behaviour studies (Hartel, Cox and Griffin, 2016). Recent work on walking pilgrims on Camino de Santiago (Innocenti, 2023) has used this model as a frame for analysis and this study helps to expand its use within the activity of long-distance walking, and more broadly in the field of information science. From this analysis of the information behaviour of participants, it was discovered that they had low information needs while walking the WHW, an activity and area of information needs not widely considered before in information science.

Further to this, the study provides an exploration of the wellbeing benefits reported during the activity and how they link to information behaviour. Use of the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) as a frame for analysis has given the findings a defined structure in an area that can be hard to pin down. This suggests the 5 ways to wellbeing would be a useful tool for other information science studies to consider wellbeing benefits present in an activity. By allowing findings to be analysed through the 5 ways, this would aid in demonstration and comparison of them.

Finally, there are findings that link across the three key areas related to the research questions: embodied information, classifying information behaviour according to

Hektor's model (Hektor, 2001) and wellbeing benefits in relation to the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011).

Embodied information was shown to be classifiable according to Hektor's information behaviour model (Hektor, 2001), however some of the richness and detail of the embodied information findings could have been lost through solely using the stages in Hektor's model. Embodied information was present, and indeed key, to some of the reported wellbeing benefits, particularly through sensory connection to the environment and in taking notice of surroundings. The NEF/NHS 5 ways to wellbeing were a useful means of demonstrating how embodied information created wellbeing benefits amongst participants (New Economics Foundation, 2008;Aked, 2011).

Links between the findings of information behaviour analysed through Hektor's model (Hektor, 2001) and the reported wellbeing benefits suggest that engaging in an activity with low information needs, like walking the WHW, were a part of a positive mindset encountered during it. Further to this, these positive mental wellbeing effects were enhanced not just by the activity having low information needs, but also being rich in embodied information, particularly sensory information from the environment. While Hektor's information behaviour model (Hektor, 2001) was useful in demonstrating more functional information behaviour, it provided a bridge between the more experimental areas of the study, looking at embodied information and wellbeing benefits.

1.6 Thesis outline

The structure of the thesis from hereon in is: a chapter containing an extensive review of literature; a chapter detailing the methods used in this study; findings and resultant discussion are explored over three separate chapters related to embodied information, Hektor's information behaviour model (Hektor, 2001) and wellbeing benefits; a chapter with reflections across the thesis and recommendations, future work and conclusions are reported in the final chapter.

2. Literature review

This review of literature covers long-distance hiking from a number of different perspectives,.

2.1 Search and selection strategy

A number of searching, gathering and selection strategies were employed in gathering materials for this literature review. Initially a number of references related to the research were included in the original PhD proposal, these informed certain key areas such as the gap in studying walking pilgrimage from an information science viewpoint (Caidi and Innocenti, 2018) and the NEF 5 ways to wellbeing (New Economics Foundation, 2008). Once the literature review was underway, focused searching on key concepts such as information behaviour, embodied information and human computer interaction, as well as topics such as walking and pilgrimage, were conducted. Searches were conducted on: University of Strathclyde SUPrimo collection; Library and Information Science Abstracts (LISA); Library, Information Science & Technology Abstracts (LISTA); Google Scholar; Google search and the Scottish National Library collection. Keywords utilised in the searching process include: *"walking", "pilgrimage", "embodied information", "wellbeing", "contemplation", "serious leisure", "higher things", "Hektor's information behaviour model", "ethnography", "thematic analysis"*, *"low information needs"* and *"NEF 5 ways to wellbeing"*. Variations on these keywords used would include combinations of terms, for example *"walking pilgrimage"*, or developments of terms such as *"long-distance walking"*. Advanced search functions using truncations, for instance *"walking pilgrim*"* or *"contempl*"*, were also used.

Further to these searching strategies, literature was discovered by chaining using the cited by function on Google Scholar, this was a useful method for finding papers which had referenced certain articles related to one of the key concepts, or for discovering articles written in different fields but with a similar topic. Searching for work by certain authors was also conducted using Google Scholar. The reference lists of key articles also proved fruitful in identifying useful literature. Some references were accrued through recommendations from supervisors, as well as interactions with fellow PhD students and academic staff at the University of Strathclyde in the Digital Health and Wellbeing Group and the Strathclyde iSchool

Research Group. Further to this, literature was acquired through attendance at various events related to the research, such as conferences, ethnographic research methods workshops and other training courses. Literature was also discovered simply through recommendations from family and friends who had an interest in the topic.

Selection of relevant literature for the review was based on links to the main topics of the research, walking and wellbeing, as well as relevance to the key concepts related to information behaviour, embodied information and Hektor's information behaviour model (Hektor, 2001). In terms of the topics, material that helped provide a broad overview of walking were considered, particularly walking in Scotland, as well as any material that had a focus on the WHW itself. The temporality of literature was initially broad to cover walking and foundational academic concepts, but was focused down to more recent academic studies relevant to the research. The oldest reference is from 1968, Maslow's widely cited work on the hierarchy of needs (Maslow, 1968), while important information behaviour frameworks and concepts date from 1982, Stebbin's concept of serious leisure (Stebbins, 1982), 2001, Hektor's information behaviour model and 2007, Kari and Hartel's concept of higher things (Kari and Hartel, 2007). Most of the academic papers referenced are from the last fifteen years, ones that are older involve core components of the research or are illustrative of a contextual point. A wide range of literature has been reviewed, including; academic papers, academic books, conference proceedings, non-fiction books, institutional websites, grey literature and white papers.

Again, with geographical considerations of relevant literature, there was a broad initial scope in looking for material, followed by a particular focus on literature relevant to walking in Scotland. For this study, only English language literature was reviewed, reflective of my linguistic capacity. Literature related to information behaviour was selected on whether it represented the state of the art and whether it was applicable to the topic of long-distance walking. Embodied information is a relatively novel field, so most articles related to this field from an information science perspective are relevant. HCI literature with a focus on walking and mobile technology were selected as relevant for this study. Literature that contained links between the topics of walking and wellbeing were deemed fit to be included and, similarly, academic research that connected one or more of the key concepts were

selected. As the scope of the research shifted away from pilgrimage as a key focus during the course of the PhD project, the literature on pilgrimage has become less prominent in the literature review, although several studies related to walking pilgrimage are still relevant to long-distance hiking as an activity and provide links to embodied information, Hektor's information behaviour model (Hektor, 2001) and wellbeing benefits. Indeed, the spiritual aspect of walking pilgrimage, and of spirituality in walking represented in writing on walking, was useful in framing analysis of the key areas listed above, as well as in the consideration of the activity as a higher thing (Kari and Hartel, 2007).

2.2 The West Highland Way and the concept of cultural heritage routes

In order to provide context for this thesis, the following section will provide an overview of the WHW and its history. Further to this, is the consideration of how walking the WHW may be defined as an activity, relevant concepts from cultural heritage are also explored, with a particular focus on the concept of cultural heritage routes.

2.2.1 The West Highland Way – overview and history

The West Highland Way was Scotland's first officially recognised long-distance walking route, being launched in 1980 after several years planning (West Highland Way, 2021). The WHW stretches for 96 miles from the towns of Milngavie to Fort William in the Highlands region, a map of the route is shown below in Figure 1. It has since grown to become the most popular long-distance walking route in Scotland, with over 36,000 people walking the length of it annually (Scottish Natural Heritage, 2018).

The route starts near to Scotland's biggest city, Glasgow, and finishes near to its highest peak, Ben Nevis, passing through landmarks such as Loch Lomond, Rannoch Moor and Glencoe (Loram and Newton, 2019). Many who walk the route are fulfilling a long-standing ambition (Hanley, 2020) and it has been described as akin to a pilgrimage in guides to walking the route (Loram and Newton, 2019). The WHW comprises of many sections that have historic and cultural significance, from Bankie Trek which was used by the citizens of Clydebank to escape bombing during the Second World War, to the network of historic military and droving roads running from Crianlarich, Bridge of Orchy, Kingshouse and down to the finish at Fort William

(ScotWays, 2023). The WHW also passes through, or past, some of Scotland's most well-known natural heritage sites, such as Loch Lomond, Rannoch Moor and Ben Nevis (Loram and Newton, 2019). There are also sites of cultural heritage significance including a whisky distillery and film locations from famous films such as Skyfall and Trainspotting (Hanley, 2020).

Figure 1. Route (in red) of the West Highland Way © OpenStreetMap - the map data is available under the Open Database License

The fact that the route passes through such a wide range of landscapes and heritage is a part of its appeal as a long-distance walking route, offering a chance for walkers to connect with Scotland's natural environments and lived history. The WHW also brings financial and cultural benefits to the towns and businesses located along the route, with walkers staying in campsites, hostels and hotels, as well as frequenting bars, restaurants and cafes along the way (Scottish Natural Heritage, 2018).

The West Highland Way has been the site of some academic research in the past, including fields and topics such as: tourism management (den Breejen, 2007), sports medicine (Ellis *et al.*, 2009), natural history (McWaters and Murphy, 2016) and

geography (Dickinson, 1982). It has not, however, been featured in any information science-based studies so represents a gap in established knowledge.

A Scottish Natural Heritage report details that there are four long-distance walking routes officially designated under the Countryside (Scotland) Act of 1967, of which the West Highland Way is one. The Speyside Way, the Southern Upland Way and the Great Glen Way (Scottish Natural Heritage, 2010) are the others. From their report, an important trend relating to the long-distance route market and users' expectations was identified as important for context;

"A significant proportion of walkers, cyclists and other route users are seeking 'softer', more comfortable, experiences – the principal markets for longer distance routes are not self-sufficient, long distance walkers but those seeking multi-day, or day trips from home or holiday accommodation, on well-maintained and signed routes, with readily available information and good places to stay, eat and drink." (Scottish Natural Heritage, 2010, p.10)

The report notes that the benefits of running and maintaining long-distance walking routes include: increased participation in physical activities; promoting active travel on a low or no cost basis; enhancing fitness, health and wellbeing; enhancing connections between communities in Scotland; supporting and growing local businesses and sustaining local services; providing employment and training opportunities; highlighting local produce, crafts and other products; greener travel and life-long learning opportunities.

2.2.2 Cultural heritage routes

When considering how to define what the WHW is, the concept of cultural heritage, specifically that of cultural heritage routes, is helpful. Whilst long-distance walking routes, such as pilgrimage routes, have been around for hundreds of years, a more modern concept is that of the cultural heritage route. They were first defined as such by an experts' panel at a United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Committee meeting in 1994, shortly after Camino de Santiago was given UNESCO World Heritage status (UNESCO, 1994). Their initial definition of a cultural heritage route was;

“A heritage route is composed of tangible elements of which the cultural significance comes from exchanges and a multi-dimensional dialogue across countries or regions, and that illustrate the interaction of movement, along the route, in space and time.” (UNESCO, 1994)

From this, they proposed that this definition of a cultural heritage route could expand the possibilities of other routes gaining UNESCO World Heritage status.

Building on this definition of cultural heritage routes, Elifnaz Durusoy posits that the definition of heritage itself has expanded to include *“diverse cultural, historical, architectural, archaeological, local, natural and geological values”* (2013, p.9-22) that are not confined to items in a gallery or museum, or a single monument or building, but to incorporate rural areas and cultural landscapes, as well as “*intangible values*” (Durusoy, 2013).

UNESCO were the first to try and define a cultural heritage route but the International Council on Monuments and Sites (ICOMOS) and the Council of Europe have also sought to define what constitutes a cultural heritage route. The ICOMOS Charter on Cultural Routes states that they can be considered as;

“Continuous and shared systems synthesize diverse heritage elements and/or sub-sites through cultural landscapes together with the cultural, historical, symbolic, functional and economic values as intangibles by linking and integrating them in an interdisciplinary and mutual framework” (Durusoy, 2013, p.9-22).

Durusoy notes that these definitions all combine an element of tangible heritage, such as historic locations, with intangible heritage in the form of cultural movement and exchange amongst travellers on the route, both local and international (Durusoy, 2013). In a development of UNESCO and ICOMOS definitions, the Council of Europe note that they can be based on cultural routes that are a recently created trail, not just historic paths, a view echoed by Ron van Oers (2004). This idea that cultural routes can be relatively recent in design is also espoused by Esra Karataş (2011);

“A regional, national or continental scaled transportation corridor, whether created today artificially and intended for promotion of tourism, preservation and devel-opment, or used in a period of history and reused today, both have cultural and/ or

natural heritage elements along, which gains its significance with presence of this heritage." (Karataş, 2012, p.13)

Scotland has an officially designated *"trail"* of UNESCO designated sites and areas (Visit Scotland, 2023). Although not structured like a typical end-to-end trail, as they are dispersed throughout the country, it demonstrates Scotland's cultural and natural heritage to be considered significant on a global scale. The trail consists of: two UNESCO Biospheres of Wester Ross and Galloway & Southern Ayrshire; three UNESCO Creative Cities of Glasgow for music, Dundee for design and Edinburgh for literature; two UNESCO Global Geoparks of Shetland and the North West Highlands and the six UNESCO World Heritage Sites of St Kilda, the Heart of Neolithic Orkney, the Old and New Towns of Edinburgh, New Lanark, the Antonine Wall and the Forth Bridge.

Camino de Santiago was the first official Cultural Route of the Council of Europe but there are now 45 certified routes (Council of Europe, 2021). Other examples include the St. Olav's Way, Impressionism Routes, Iron Curtain Trail and In The Footsteps Of Robert Louis Stevenson, of which a portion is in Scotland.

Walking pilgrimage routes provide useful links and similarities with long-distance walks as cultural heritage. Indeed, many famous walking pilgrimage routes such as Camino and Kumano Kudo in Japan have UNESCO World Heritage Status and can be considered amongst the oldest examples of cultural heritage routes (UNESCO, 2020). Recent research in the field of information science has demonstrated that modern pilgrims on Camino de Santiago record and share their journeys via a wide range of means and encompass embodied information experiences (Innocenti, 2023). In a previous study of walking pilgrims on the Camino de Santiago, Sean Slavin (2003) spoke to walkers who described a process of meditative self-reflection as their journey progressed, an inner journey as well as an outer one. This study also describes how walkers built a mental map of the route based on the embodied experience of walking it (Slavin, 2003).

Religious walking pilgrimage routes are often promoted as an opportunity to connect with the sacred locations and even the paths themselves as an immersive heritage experience, while still leaving the meaning of the journey to the individual where the motivations may be more loosely spiritual (Johannsen and Ohrvik, 2020). Although

the history of walking pilgrimage routes often has religious beginnings, there are observations in previously published research that not everyone on a journey to a religious pilgrimage site is necessarily religious themselves, the majority of participants in one study of Camino de Santiago walkers were found to be not traditionally religious (Lluis, Scarlett de and Miguel, 2014). There are contemporary efforts to create new pilgrimage routes in Scotland, such as the Fife Pilgrim Way, which seek to combine religious heritage in a route with modern secular heritage sensibilities (Bowman, 2020).

Another useful walking pilgrimage route to consider is St. Olav's Way, which is in Norway and is based on old pilgrimage paths that date back to the 11th century (Visit England, 2016). The principle route is 643km long (compared to 155km for WHW) and runs from Oslo to Trondheim. 80% of walkers are drawn to do it for "*nature*", followed by "*history/cultural heritage*", then "*reflection and spirituality*". St Olav's Way received the status of a European Cultural Route through the Council of Europe's Cultural Route programme in May 2010. A study of walkers on the route found that participants reported better health, both mentally and physically, experienced spiritual thought processes, engaged in meaningful social interactions and ultimately gleaned a more positive outlook on life (Jørgensen *et al.*, 2020).

A report based on a case study of the St' Olav's Way commissioned by Visit England provides some useful context for the consideration of the successful running of a cultural heritage route and how it could apply to long-distance walking routes in the UK (Visit England, 2016). The report identifies common factors as important to the success of long-distance routes include: an achievable, well signed route through iconic landscapes; a range of visual stimuli; places of historic or other additional interest; start and endpoints that are easy to get to; readily identifiable accommodation; food and drink services at regular intervals; as well as availability of useful route guidebooks, package booking and luggage transfer services.

Specifically related to the St. Olav's Way, the report states that key components of the route include: the route representing a significant, but achievable, challenge; a spiritual journey; a chance to connect with local people, cultural and religious heritage; partnerships between local communities; effective marketing; a useful

website; good walking routes; clear signage and outstanding scenery (Visit England, 2016).

An important aspect to consider in people's cultural heritage experiences is how this relates to their identity. John Falk (2006) carried out research amongst museum visitors, a form of heritage experience based in a fixed location but comparable to cultural heritage experience on a route, and noted that participants' identities were interlinked with their motivation to do the activity and what they learned from the experience.

Learning in the context of this research is not just the memorising of facts and details but something which is *"self-motivated, emotionally satisfying and personally rewarding"* (Falk, 2006, p.152). From this line of research Falk proposed that there were 5 distinct visitor motivations linked to their identity during a museum or heritage experience; the explorer, the facilitator, the professional/hobbyist, the experience seeker and the spiritual pilgrim (2006). The identity of spiritual pilgrim was later updated to that of recharger (Falk, 2013). An explorer is someone who has a broad interest in the area of the museum or heritage experience and would like to learn more about it. The facilitator is someone who accompanies an individual or group, such as a parent and a child, in order to take them to a museum or heritage location so that they may learn about it, rather than being directly motivated to do it themselves. The professional or hobbyist will have strong link between the museum or heritage site and their profession or hobby, their motivations for visiting will be to learn something specifically related to this field. Experience seekers are motivated by their consideration of the importance of a location, from which they will derive satisfaction at having been able to say they've *'been there and done that'*. The spiritual pilgrim or recharger is in search of a *"contemplative, spiritual and/or restorative experience"* (Falk, 2013, p. 116), which runs counter to their everyday life at work and at home.

Falk is keen to point out that these identities are not fixed, they are context dependent for each time someone visits a museum. Neither are they meant to represent a person's whole identity, rather they can help understand people's motivations and experiences in that instance.

Elifnaz Durusoy (2013) notes that key to the planning and running of a successful cultural heritage route is understanding the route. A core component of this is for research to be carried out on the route, so as to have as full an understanding of the cultural values present on it. This, in turn, helps guide the management and promotion of the route in a way that strengthens the cultural value of it. An appropriate method of researching cultural values on a route is to conduct field investigation on the site of the route. Field investigation on a cultural route can explore the following contexts; natural, man-made, social and cultural, functional, visual and aesthetic, economic, administrative as well as meaning and spiritual. The concept of cultural heritage routes is useful in considering how to classify the WHW. This is especially relevant in relation to routes created relatively recently, with the WHW being launched in 1980, compared with the centuries old Camino de Santiago. An understanding of the cultural values and contexts of the route can aid in decision making for the future of it.

2.3 - Serious leisure and walking

An important theory from information science to consider is the serious leisure perspective, put forward by Robert Stebbins (1982; 2007; 2009). This is the theory that people pursuing a hobby, amateur or volunteering activity embark on a non-work related career to acquire expertise, comprehension and experience in that field (1982). Thus, hikers who regularly engage in long-distance walking, walking multiple routes as they develop their knowledge of the pursuit, can be considered to have a serious leisure hobby (Davidson and Stebbins, 2011).

Stebbins initially sought to distinguish serious leisure from casual leisure, but later developed the theory of casual leisure to include pleasurable aerobic activity (2004), which could apply to someone who regularly uses walking as a form of exercise, but does not engage with the necessary skills to become a highly technical hiker. A casual level of walking implies walking somewhere local and familiar, without the need to navigate, to travel to a location for the activity, or to learn new skill and dedicate time and resources to acquiring clothing and equipment for hiking. Casual walkers can be found on sections of the WHW, but this is because they live locally to the route and are using stretches of it for regular exercise or for walking their dog, for

example. The distinction here is that they are not committed to walking the length of the route over multiple days.

A casual walker may decide to embark on a long-distance walking route, such as the WHW, however this can be seen to be the departing point from a casual activity to a more serious one, even if only for a short period of time. If the long-distance walking activity is a one-off it can be viewed as project-based leisure, a distinct leisure activity where a significant amount of time and energy is devoted to a particular onetime project (Stebbins, 2005). Project-based leisure provides a bridge between walking as a casual activity and walking as a serious leisure activity.

Someone who does multiple long-distance walking routes may regularly go on day hikes in a range of locations and of varying difficulty as an extension of their serious leisure pursuit. Hikers who regularly do this type of challenging single day activity but who do not go on long-distance walks can also be considered serious leisure hobbyists if they regularly engage with this form of the activity. Separately, someone who regularly does long-distance walks but does not go on regular day trips can also be considered a serious leisure enthusiast of long-distance walking.

Defining activities as serious leisure can be a challenge, as variations can occur within activities, for example in the world of DJing, where the line between leisure and work is almost invisible and they are described as occupational devotees (Munro, Ruthven and Innocenti, 2022). There is also criticism that the definitions of serious leisure are too strict and that a more flexible leisure perspective be adopted to portray the complexities of types of leisure experience, proposed as the Leisure Experience Perspective (Veal, 2017).

Bringing clarity to this matter is a book that Robert Stebbins wrote with Lee Davidson called *“Serious leisure and nature : sustainable consumption in the outdoors”* (Davidson and Stebbins, 2011). The book covers a wide variety of outdoor pursuits, here defined as a Nature Challenge Activity (NCA), like rock climbing and kayaking, as well as hiking. All NCA’s can be considered a serious leisure pursuit and one that is undertaken in a natural environment. NCA’s offer an antidote to city life where the majority of environments are man-made or artificial and offer the participants experiences that are pleasant, satisfying and *“done in an environment that is itself awe-inspiring”* (Davidson and Stebbins, 2011, p.xi). NCA’s offer an opportunity to

gain fitness in a natural environment, as opposed to an artificial one, and to appreciate nature.

Within this book there is a chapter dedicated to hiking, clearly showing its status as a serious leisure pursuit, which states that it is one of the most accessible NCA's, both economically and geographically (Davidson and Stebbins, 2011). Although walking as a recreational activity is said to date back to the 18th century, it gained in popularity with the increase in leisure time in the 20th century and ease of transportation. Hiking is a core activity related to many of the other NCA's, for example a participant would have to hike to a location to do abseiling. Hiking is defined in basic terms as walking for pleasure in natural surroundings. Compared to other outdoor pursuits, there is little requirement for previous experience, special skill or specialist equipment. As with other serious leisure activities, hiking offers the opportunity to start at a basic level and progress to greater levels of difficulty and challenge. A part of hiking's appeal is "*natural surroundings, free from the intrusion of the clutter and noise of civilisation"* (Davidson and Stebbins, 2011, p.94). Further to this, hiking allows for access to remote areas and creates opportunities to improve fitness and endurance, as well as a sense of self-reliance. Compared to other NCAs, hiking's less technical nature allows more opportunity for contemplation and a connection to nature. Even a novice can experience getting into a flow state on a long hike. Sensory awareness is required to navigate terrain, in conjunction with navigational tools, and is of utmost importance to personal safety when undertaking the activity, suggesting evidence of embodied information.

Consideration of hiking, backpacking, long-distance walking and walking pilgrimage as NCA's has usefully been applied to information science-based studies (Hyatt, 2017;Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022;Innocenti, 2023). In these instances, the design and analysis of mixed methods data collection was framed using these forms of walking activities as serious leisure NCAs.

2.4 – Walking and the concept of higher things

A key concept proposed in the field of information science is that of higher things, put forward by Jarkko Kari and Jenna Hartel (2007). This calls for the subject of information studies to be considered as a higher thing, where the activity may be pleasurable or profound, or a lower thing, everyday activities for example. They posit

that while there is a wealth of research into lower things in the sphere of information science, often associated with serious life events or work, there is a dearth of research into areas that can be described as higher things, events in life that offer opportunities for deeply pleasurable experiences and profundity. Research into higher things may yield findings that would not be uncovered in solely looking at lower things and therefore it has the potential to enrich understanding of information behaviour. Kari and Hartel proffer that information studies often focus on lower things associated with day to day actions like problem solving, therefore implying that every informational context is potentially stressful and a nuisance, whereas an information context related to a higher thing may have more positive motivation behind it.

When considering the concept of higher things there are a number of connections to be made with walking. Higher things identified as pleasurable include hobbies, leisure and relaxation, while profound experiences include: human development; meaning or purpose in life; positive thinking; spirituality and religion; virtues and wisdom (Kari and Hartel, 2007). The previously stated pleasurable things could easily be applied to walking as a pursuit, and the profound attributes can be associated with the descriptions of walking pilgrimage. Participants on the St. Olav Way in Norway described their journey in profound terms as spiritually enriching (Jørgensen *et al.*, 2020). Further to these descriptions of the pleasurable and profound, Kari and Hartel set out a number of distinguishing features between lower and higher things including: mundane and profound; negative and positive; ordinary and extraordinary; routine and special, as well as survival and meaning. These differing characteristics may be applicable to the notion of long-distance walking being an important life event classifiable as a higher thing.

In presenting the academic argument for studying higher things, Kari and Hartel (2007) point to psychology research that establishes some of the benefits of experiencing higher things in life. One key positive is to aid in preventing poor mental health (Csikszentmihalyi and Seligman, 2000), while it is also suggested that higher things are integral to our sense of self and to the human experience (Maslow, 1968). Higher things are also important in providing meaning to life and creating our identity (Csikszentmihalyi and Seligman, 2000). These are ideals sought in walking as a serious leisure pursuit and in long-distance walking as an activity.

Contained within the concept of higher things is the paradox that in the pursuit of higher things, there may be a number of informational needs and contexts that would identify more as everyday information activities, or lower things (Kari and Hartel, 2007). In relation to this research for example, a walker will likely need to consult public transport information or weather forecasts before going out on a trek. Similarly, for a long-distance hiker there will be a number of nuts and bolts informational needs that they would have to meet before undertaking the route, such as consulting maps and planning itineraries. These are not information interactions easily associated with higher things, however these everyday information actions can offer opportunities for higher things experiences. Evidence of hikers on a technical hiking challenge in the Highlands of Scotland demonstrate the wide range of types and sources of information required in this pursuit (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022). This shows how more functional forms of information can inform serious leisure pursuits, particularly those that run counter to everyday life, elevating to them to one of life's higher things. Walking itself is an everyday activity for most and it is debatable whether a daily walk to work, or going to the shops on foot, is defined as a higher thing in the same way that a long-distance walking route is. Overall, these contradictions are part of the holistic higher things concept (Kari and Hartel, 2007), that lower things can't exist without higher things and that to focus on the study of higher things in information science is to seek as full an understanding of the domain as possible.

Instances of long-distance walking being considered a higher thing have been observed in some studies on walking pilgrimage. The wellbeing benefits of being mindful and present during walking on the St Olav Way were in part due to it being antithetical to everyday life actions, such as meetings and appointments (Jørgensen *et al.*, 2020). This is also seen on the Camino de Santiago, where the pace of life when on a walking pilgrimage is described in a positive manner as much slower than everyday life (Slavin, 2003), as well as the absence of aspects of life associated with urban living. Novel work on the same route from an information behaviour perspective has shown that walking pilgrims encountered a spiritual dimension to their journey, reported positive mindsets associated with the walking and engaged in storytelling of their journey using diverse analogue and digital means (Innocenti, 2023), all consistent with the concept of higher things (Kari and Hartel, 2007).

The concept of higher things (Kari and Hartel, 2007) offers the chance to consider areas of life where profundity is possible, an area where information science can greatly benefit from greater understanding so that it remains relevant to people's lives beyond the realms of academia and aids the provision of information systems that are not just functional, but also human. Using higher things as a motivation for information studies also links with work by Robert Stebbins, who posits that serious leisure pursuits offer opportunities for profoundly positive experiences that can offset negative experiences in other areas of life (Stebbins, 2009). This provides a link to one of the other lenses for looking at long-distance hiking, serious leisure.

2.5 Embodied information

One of the core concepts of this research is that of embodied information, the consideration of the body as a source of information. Embodied information is defined by Annemaree Lloyd as, *"information that is experienced through the situated and sensory body as it interacts with material objects, artefacts and other people that inhabit the same landscape"* (Lloyd, 2010, p.1-13). Cox, Griffin and Hartel (2017) state that embodied information is under represented in studies of information behaviour, particularly in regards to serious leisure. Understanding the use of embodied information can give a more holistic view of information behaviour, which can in turn aid in the provision of information and design of information systems.

There are some previous studies in the field of information sciences featuring embodied information, such as work by Annemaree Lloyd looking at information literacy, which observed emergency workers and nurses using sensory information to inform their decision making (Lloyd, 2009;Lloyd, 2010;Bonner and Lloyd, 2011;Lloyd, 2014). Patrick Keilty, studying users of online pornography, found that users could experience embodied reactions such as arousal, surprise, disgust and irritation (Keilty, 2012;Keilty, 2016). Christopher Lueg, in considering embodied cognition, posits that there is a close interconnectivity between what a person perceives around them, how this makes them feel, and that these perceived feelings have a material effect on the body (2014; 2015).

A study of embodied mobile information practices amongst smartphone users found the devices were considered an extension of user's bodies and were commonly used

with embodied practices (Shankar, O'Brien and Absar, 2018). There has also been recent research on DJs which suggests that embodied information is key to decision making during their performance (Munro, Ruthven and Innocenti, 2023). This involved monitoring embodied information from the crowd in front of them, typically in the form of dancing, to determine how well the performance was going. This is a form of looking out for embodied information from others and there was also evidence of DJs monitoring embodied information from within, describing physical reactions and sensations while playing.

The call by Cox, Griffin and Hartel (2017) to consider the embodied information present in physical activities is particularly relevant to this research. Within this call they point to some research considering the activity of running. Runners permanently assess sensory information, such as the conditions underfoot, and the effect this has on their state of mind (Gorichanaz, 2015). They also use: visual information from their environment; internal sensory information from muscles and breathing; external sensory information such as wind on the skin, as well as aural and olfactory sensations to inform whether or not the activity is pleasurable or painful (Hockey, 2004;Hockey, 2013;Hockey and Allen-Collinson, 2013). While running is a distinct activity to hiking, there is some similarity in being bipedal and therefore some similarities and differences can be anticipated in the use of embodied information amongst hikers on the WHW.

Specific to the activity of long-distance hiking and walking pilgrimage, recent studies in the field of information science have expanded understanding of embodied information in the activity. An auto-ethnographic description of hiking the Pacific Crest Trail considered the embodied experience of the activity (Hyatt, 2017), the design and analysis of hikers on the TGO technical hiking challenge in Scotland utilised embodied information recorded using technology (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022) and an in situ study of walking pilgrims on the Camino de Santiago illustrated the experiential embodied information encountered by walkers (Innocenti, 2023). Beyond the field of information science, but on the same route, Sean Slavin considered the role of the body on pilgrimage to Santiago de Compostela as a conduit for the surrounding environment and for the sense of self (Slavin, 2003). The pilgrims he spoke to displayed an awareness of their body in conjunction to the journey. The action and rhythm of walking itself was

described as being an aid to concentration and to blocking out intrusive thoughts, encouraging a meditative type state, and these are also both observed in Innocenti's research (2023). Slavin describes how an embodied map is generated in the mind based on the lived experience of walking through a landscape that is a more personal representation than that offered by a topographical one on a map. Memories of location can be recalled by the physical interaction of body and environment. The ultimate result of these embodied experiences is described in the following terms;

"The practice of walking allowed us to understand and explore a nexus between the body, self and the world. It thus demonstrates the many complex ways in which the body, situated within specific material circumstances, helps to produce experiences that are profoundly spiritual." (Slavin, 2003, p.16)

In a study of pilgrims on St. Olav's Way (Jørgensen *et al.*, 2020), there were a number of instances of embodied information. In a positive manner participants talked of *"nature bathing"* (Jørgensen *et al.,* 2020, p.37) and the process of immersing themselves in the sensory feedback of the natural environment: sights, sounds, smells, taste and the sensation of the elements on their body. There was also a sense amongst some participants of an increased connection between mind and body from the physical action of walking St. Olav's Way, as well as a feeling of improved physical fitness. Further to this, there were a number of reported therapeutic benefits that link with embodied information: the physical act of walking inviting a meditative state; the slow pace of walking encouraging a sense of presence and reflection, as well as the healing properties of being immersed in the sensory information of nature, of a physical connection to the environment. This was also observed on the Camino de Santiago (Innocenti, 2023). Negatively though, physical condition and the presence of aches and pains was said to have a detrimental effect on mood and sense of enjoyment by participants.

There is also evidence of embodied information in walking from non-academic literature, such as Nan Shepherd's collection of writing about the Cairngorm mountains called *The Living Mountain* (Shepherd, 2008). Shepherd references sensory information such as smells, sounds and temperature to inform her philosophical musings on the Highland landscape.

2.6 Information behaviour studies and the use of Hektor's information behaviour model

Key to framing this study is establishing the concept of what information behavior is and what the study of it can uncover. Broadly speaking information behaviour can be defined as the different manners in which humans interact with information, specifically activities where they find and use information (Bates, 2010). Many studies looking at information behaviour have focused on situations where people are undertaking scholarly or work related activities, but there has been a trend towards looking at information behaviour in relation to serious leisure activities in recent years (Hartel, Cox and Griffin, 2016).

For purposes of clarity, this thesis has adopted the umbrella concept of information behaviour, this is often used interchangeably with the concept of information practice (Savolainen, 2007). While it has been observed that information behaviour has perhaps been used to consider individual needs and motives, with information practice considering the more social aspects of information (Savolainen, 2007), in the end, *"the major concepts of behavior and practice seem to denote the same phenomena"* (Savolainen, 2007, p.126). Therefore, any mention of information practice in this review of literature can be considered under the same broad definition of information behaviour, and vice versa, without any intention to add to the discourse around which differentiates the two terms.

The serious leisure perspective was developed by sociologist Robert Stebbins and relates to humans who commit to a leisure activity to such a degree that it almost becomes like a second career and much of their lives are devoted to spending time doing and learning about the pursuit (Stebbins, 1982;Stebbins, 2007). The concept is widely used in information behaviour studies that look at leisure activities, as opposed to more formal work-based activities. Use of Hektor's model can garner insight into serious leisure activities in a manner similar to the widespread adoption of foundational information models such as Wilson's information behaviour model (Wilson, 1999) or Marcia Bates' information concept of berrypicking (Bates, 1989).

Hartel, Cox and Griffin argue that while there are rich and varied findings in many serious leisure studies, there is a lack of common structure which makes comparing and contrasting difficult and can impede theoretical development around information

behaviour in serious leisure (Hartel, Cox and Griffin, 2016). To counter this perceived weakness in the study of information behaviour in serious leisure, they propose the adoption of Andres Hektor's (2001) hitherto underused model of information behaviour as a means of defining information behaviours, allowing studies that use them to more easily synthesize knowledge. A recent study on long-distance walking pilgrims on the Camino de Santiago used Hektor as lens for analysis (Innocenti, 2023), so this is an expanding area of research connecting serious leisure and higher things activities to information seeking in context.

Hektor's human information behaviour model (2001) was devised as part of their PhD research looking at the information behaviours of internet users in Sweden and has remained relatively under utilised until Hartel, Cox and Griffin (2016) proposed its suitability in framing information behaviour in serious leisure studies. Hektor's model (Figure 2) incorporates four general information behaviours: giving, seeking, communicating and gathering. Further to this, the model suggests that these general behaviours present themselves in eight more specific types of information behaviour: search & retrieve; browse; monitor; unfold; exchange; dress; instruct and publish.

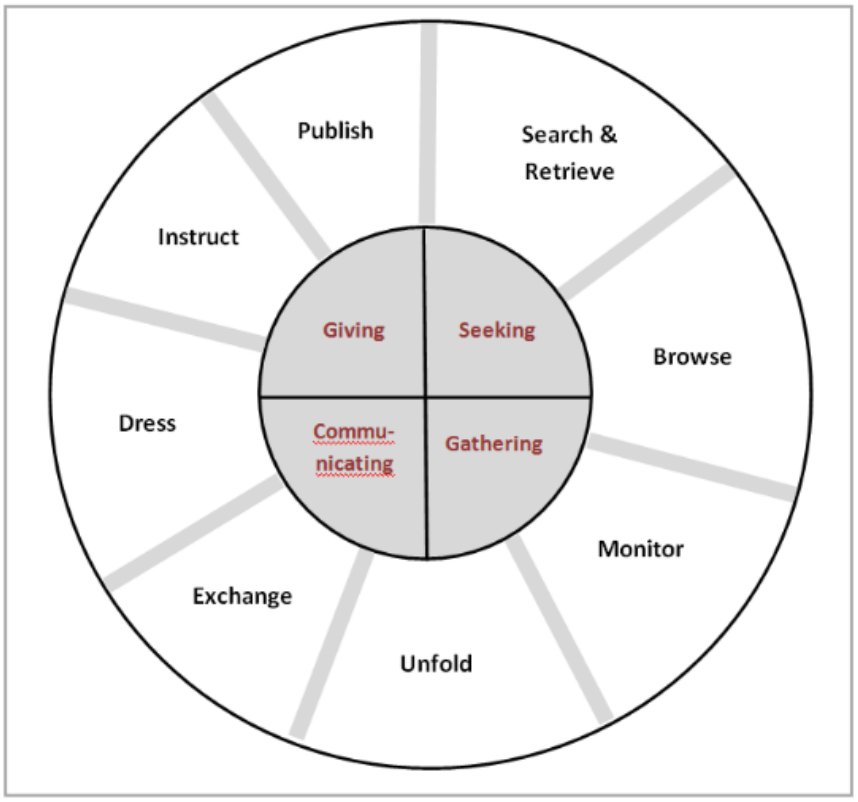

Figure 2 – Hektor's information behaviour model (Hektor, 2001)

To search & retrieve is to make a concerted effort to find information on a topic or activity by consulting a searchable information system. To browse is to look for information in an area with a smaller horizon where the browser feels that finding useful information is likely. To monitor is to regularly consult certain sources where information can be accrued. To unfold is to constantly focus attention on relevant information to be able to participate in an activity. To exchange is a two-way reciprocal interchange of information. To dress is to relate ideas and feelings into the form of some exchangeable or shareable information such as writing, photos, art or audio recordings. To instruct is to communicate information effectively to others. To publish is a means to formally share information in a public sphere.

Hartel, Cox and Griffin (2016) posit that similarities in Hektor's and Robert Stebbins' work allow for the application of Hektor's model to studying information behaviour in serious leisure. To highlight this, they look at three different serious leisure activities for information behaviours relating to Hektor's model: the liberal arts hobby, amateur musicianship and the hobby of running. While all three areas are ripe for future study, the activity of running was perhaps most pertinent to this research, due to its close proximity to the activity of walking and hiking in terms of physicality. There is also a crossover in terms of defining the pursuit through the lens of serious leisure as very few people will do either pursuit professionally, so the vast majority of participants can be considered hobbyists. Running is a physical activity which does not necessarily require consulting information in document form, much of it can be learned experientially, although books, magazines and web sites are popular sources for regular runners.

Hartel, Cox and Griffin's (2016) analysis of research on the activity of running using Hektor's model of information behavior as a framework suggested a number of different information behaviours related to the different attributes. When searching and retrieving, runners would be seeking information related to areas such as methods of training, dietary advice, equipment, local running groups, the social world of running and matters relating to injuries. Browsing would take the form of looking in library collections for books on the topic or consulting a collection of magazines. Monitoring by runners would be to keep up to date with the latest magazines, check relevant web sites and local news outlets. Unfolding happens as runners interact with sources but also by observation of the activity. This can take the form of

watching videos, races or by analysing personal data generated in the process of an activity, in the form of logged activities. Key to the behaviour of unfolding for runners is embodied information, primarily from sensing the environment through which they are running, enabling them to evaluate a route for suitability and safety (Hockey, 2004;Collinson, 2008;Hockey and Allen-Collinson, 2013). Embodied information from within is also assessed in real time so that the runner can be aware of their physical condition and look out for any signs of pleasure, distress or injury (Hockey, 2006;Hockey, 2013). Exchanging information between runners typically happens in face to face or online locations and relates to swapping details related to technique, equipment or routes. There is also evidence of non-verbal exchange of embodied information through observing the form of other runners. Runners dress their information by recording the activity, often through wearable devices, this is a precursor to sharing the information. Instruction for runners comes in the form of organised training sessions to improve technique, as well as less formal conversational interactions with fellow runners. Recovering from injuries is another area where formal instructional activities may occur, also with less formal advice from other participants. These instructions may include physical demonstrations, a form of embodied information. Runners will publish information in the sources described already in this section such as magazines, books, blogs and social media. Information to do with performance statistics or different routes is also published and shared using applications related to wearable data such as Strava.

Hartel, Cox and Griffin (2016) note that while there is clear evidence of embodied information in the activity, it is perhaps not best served by the definitions of Hektor's model. Given the clear crossover between the activities of running and walking, it is posited that this research may explore ways in which to define embodied information within Hektor's model, or seek to add definitions to it to allow for the classification of embodied information. Indeed, there is a call from Hartel, Cox and Griffin (2016) that future research into information behavior should focus on embodied information in serious leisure activities to enrich understanding of the field.

2.7 Walking and Contemplative Studies

An emergent area of academic research is the field of contemplative studies and there are calls for information science to focus future studies towards themes from

contemplative studies (Latham, Hartel and Gorichanaz, 2020). Contemplative practice is commonplace in modern society and can be observed in popular activities like yoga, mindfulness applications or meditation. Contemplative studies can be described as an interdisciplinary field, drawing on science, humanities and the arts (Roth, 2006). Contemplative studies sets out to: understand the primary factors that influence human contemplative experience; study the different means through which humans engage in contemplative practices and to generate meaningful understanding of these (Roth, 2014). There is a clear through line from the consideration of the concept of higher things in information science (Kari and Hartel, 2007) and the inclusion of contemplative studies in information behaviour studies, as contemplative practices offers the opportunity to experience the pleasurable, and perhaps most pertinently, the profound.

Crossover with the concept of embodied information is suggested as a means to consider contemplation from an information science perspective (Latham, Hartel and Gorichanaz, 2020). This can be seen in the clear links between the activity of walking and walking meditation being identified as a key contemplative practice involving movement (Duerr, 2011). This ties in with concepts of walking being a form of mediation that can induce contemplative states related in Nan Shepherd's nature writing on the Scottish Cairngorm mountain range (2008) and Ernesto Pujol's description of his walking art practice in Spain (Pujol, 2018). In a study of pilgrims on the Camino de Santiago, Sean Slavin spoke to participants who described a process of meditative self-reflection as their journey progressed, internal as well as external (Slavin, 2003). There is also evidence of the presence of contemplation in the study of walking pilgrims on St. Olav's Way in Norway (Jørgensen *et al.*, 2020), where participants described the process of walking the route as a form of meditation, or *"self-immersion"* (Jørgensen *et al.,* 2020, p.37), that encouraged being mindful and to remain present in the moment. These can be viewed as akin to the flow state that walkers encounter in pursuing the activity as a serious leisure pursuit (Davidson and Stebbins, 2011).

2.8 – Walking as a wellbeing activity

Key to understanding how walking can offer opportunities for profound experiences is to understand how the activity of walking can help create a sense of wellbeing.

Research on walking pilgrims on the long-distance St. Olav's Way uncovered a number of processes, effects and therapeutic benefits that all aid mental and physical wellbeing (Jørgensen *et al.*, 2020). As part of undertaking the pilgrimage participants reported the following processes: experiencing a form of meditation while walking; of being able to process problems and reduce anxieties; calmer mental processes; improved fitness; forming of communities on the way and of connecting to nature. Some of the wellbeing effects noted by the study included: better mental health after completing the pilgrimage; a fitter physique and stamina; a sense of spiritual enrichment with strengthened connection between mind, body and soul; as well as strengthened social connections with fellow walkers on the route, and with family and friends away from it. A number of therapeutic benefits were also related by participants: that the time involved in long-distance walking encourages mindfulness and being present in the moment; personal reflection; removing oneself from the stresses of daily life and experiencing a slower pace of life; being rewarded through a direct sensory connection to nature and the benefits of social connections with others on the walk and through their family and friends at home.

There are apparent wellbeing benefits from considering walking as a serious leisure NCA: walking offers opportunities to gain fitness, appreciate nature, learn self-directed skills and experience a flow state. (Davidson and Stebbins, 2011). Further to the idea of a flow state, descriptions of this type of meditative mindset are discussed by walkers on the Camino de Santiago (Slavin, 2003) and St. Olav's Way (Jørgensen *et al.*, 2020). This idea of walking aiding in entering a meditative state is backed up the writings of former monk, and now artist, Ernesto Pujol, who extols the virtues of walking as a form of meditation (Pujol, 2018). Pujol incorporates walking as central to his artistic practice and using walking as a form of inspiration for creative practices can be seen in many spheres. from Greek philosophers to poets and painters throughout the ages (Solnit, 2001;Coverley, 2012). Considering walking as a form of wellbeing, or as a creative practice, offers the chance to frame long-distance walking as one of life's higher things that presents opportunities for profundity, while also offering links to the concept of embodied information.

2.9 NEF 5 ways to wellbeing

Concepts around wellbeing can be myriad and nebulous. There are ideas to be drawn from fields such as medicine, art and religion but, for the purposes of focusing this research, it is beneficial to ground the concept of wellbeing in an established format used in other areas of research. On this basis, the framework selected is the New Economics Foundation (NEF) 5 ways to wellbeing; connect, be active, take notice, keep learning and give (New Economics Foundation, 2008).

Originally created by the centre for wellbeing at the NEF, an independent UK think-tank that has the aim of promoting sustainable and wellbeing centred economic policies. The 5 steps were developed using data from the UK Government's *Foresight* programme to inform research in a wide range of disciplines and aid policy development for wellbeing over a 10-20 year period (New Economics Foundation, 2008). They define wellbeing as comprising of two main elements; feeling good and functioning well. Feeling good can involve feelings of happiness, contentment, enjoyment, curiosity and engagement. Functioning well is informed by positive relationships, agency over one's actions and a sense of self-worth.

To expand on each of the 5 ways to wellbeing (New Economics Foundation, 2008), to connect is to make connections with people around you in your life such as family, friends, colleagues and neighbours. These connections may occur in the place that you live, through work or study, or more broadly through a local community. To be active is to engage in physical activities such as walking, running, cycling, gardening, dancing and many other forms of exercise, often practiced outside. To take notice is to retain curiosity in your surroundings and be receptive to moments of beauty and points of difference in your surroundings that occur in the moment. To keep learning is engage in new activities or rekindle an interest in an old hobby, such as cooking, exercise or a creative activity like art or music, and generally to continue personal development through formal and informal education. To give is to engage in a positive action for someone other than yourself, either known or unknown, through simple interactions such as a gesture, or more committed activities like volunteering.

The 5 ways to wellbeing were further developed in a 2011 report, *Five Ways to Wellbeing: New applications, new ways of thinking*, produced by NEF in conjunction with the NHS Confederation (Aked, 2011), that suggested the 5 ways to wellbeing

should be adopted not just as a strategy for those suffering from serious mental health disorders but to promote positive psychology to the population as a whole. The rationale behind this is that the absence of a serious diagnosed mental health condition does not necessarily equate with a positive mindset and that by promoting the 5 ways to wellbeing through a number of policies and activities, a positive state of mind can be fostered more broadly. This idea can be hard to quantify but the 2011 report does highlight links between a general sense of wellbeing and a reduction in the likelihood of serious health issues such as stroke or cardio-vascular disease. Although it is arguable that mental wellbeing and mental health is more complex than a 5-step method can fully incorporate, there are clear benefits in aiming to promote these ways as a means to develop positive mental wellbeing. The 2011 report has been cited in a number of studies looking at a wide range of topics and fields: public health benefits of creative arts (Clift, 2012); environmental decision making (Fish, 2011); links between childhood experience and adult mental health (Hughes *et al.*, 2016); green exercise (Barton *et al.*, 2016) and urban design (Anderson *et al.*, 2017).

In terms of this research there are a number of clear links between the 5 ways and elements of long-distance walking. By embarking on a long-distance walking route, a participant may be connecting with a fellow traveler, such as a friend or a family member, or by walking the same route as someone else they know, offering opportunities to bond over a shared experience. A positive sense of connection with fellow walkers and with family and friends away from the route has been noted amongst walking pilgrims on the Camino de Santiago (Innocenti, 2023) and on the St. Olav Way (Jørgensen *et al.*, 2020), as well as by a long-distance walker in Wales (Dix, 2020). Solo walkers found the experience an ideal way to foster connections with other walkers while still maintaining a degree of independence (Slavin, 2003). Walking a long-distance walking route also offers the chance for someone to connect with a community or location that is of personal significance to the hiker. A long-distance walking route clearly represents an opportunity to be active as it is the essence of the activity. The challenge of long-distance hiking being part of the appeal is represented in studies on the TGO technical hiking challenge in the Highlands of Scotland, were participants embark on a two-week journey from coast to coast through the Scottish Highlands (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022). The benefits of being active on a long-distance hiking route include

increased physical fitness and mental wellbeing (Jørgensen *et al.*, 2020;Innocenti, 2023). Long-distance hiking also offers many opportunities to take notice as the pace of travel and the locations in which they are undertaken encourage an awareness of your surroundings, indeed it is key to successfully navigating a long-distance hiking route. Walkers on the St. Olav Way describe the slowness of the journey as a chance to be present in the moment, enjoy their surroundings and to bask in nature (Jørgensen *et al.*, 2020). This was echoed by descriptions of being present in the moment on the Camino de Santiago (Slavin, 2003;Innocenti, 2023). A long-distance hike also represents an opportunity to keep learning as, for many, it will be the first time they have walked that route and therefore they will need to learn about the process. A technical hiking challenge also represents an opportunity for hiking enthusiast to push themselves and develop new skills in a pursuit, as observed on the TGO in Scotland (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022). There are also opportunities to learn about the location of the route, something related by Alan Dix on his journey around Wales where he learned about locations previously unknown to him (Dix, 2020). There is also evidence of walkers learning more about themselves through personal reflection (Jørgensen *et al.*, 2020). Lastly, long-distance hiking offers the chance to give in a number of ways, from simply having positive interactions with fellow walkers (Jørgensen *et al.*, 2020;Innocenti, 2023) to combining walking with fundraising activities (Dix, 2020).

2.10 Summary and gaps in the literature

This review of literature has covered a number of topics and key concepts for the research of long-distance hiking on the West Highland Way. From this, a number of gaps in established knowledge are bridged through this research project. Firstly, although previous studies have been carried out on the West Highland Way, none are from an information science perspective, meaning that this represented a novel research site for this project. A key component of Cox, Griffin and Hartel's (2017) call for the further incorporation of embodied information into information studies is to look at areas related to physical exercise, by focussing on the activity of long-distance walking, and the novel location of the WHW, this research can provide new insights into this concept. This paper also calls for the utilisation of ethnographic methods to explore activities likely to feature embodied information. In seeking to understand the information behaviour of walkers on the West Highland Way, this

literature review has identified use of Hektor's information behaviour model as a current, relevant means of framing information behaviour studies and its use is intended to apply it in a novel context (Hartel, Cox and Griffin, 2016). The concept of serious leisure (Stebbins, 1982;Stebbins, 2009) has been utilised in many information behaviour studies, as well as its creator applying the concept to outdoor pursuits like walking, it has not been used to look at a long-distance hiking route such as the West Highland Way, thus bridging another gap in established knowledge. The call to research activities that overlap with the relatively novel field of contemplative studies from an information science perspective (Latham, Hartel and Gorichanaz, 2020) is one that this research can contribute to, providing insight into an activity that displays commonalities with contemplative activities (Roth, 2006;Duerr, 2011;Roth, 2014;Komjathy, 2017). By using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) to frame the possible wellbeing benefits of engaging in a hike on the West Highland Way, this will expand on the understanding and application of these steps in further research. Finally, in the field of information science, there has been pioneering work on the activities of long-distance walking and walking pilgrimage set in the Scottish Highlands (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022) and on the Camino de Santiago (Innocenti, 2023) respectively, therefore this study of long-distance hikers on the West Highland Way can provide further insight into a different group of participants in a similar activity and help generate further, deeper knowledge in the field. How this summary and gaps in the literature relate to this research project is set out in Table 1 below, with the research questions linked to key concepts and frameworks and a brief justification for using them.

Research question 1	*How is embodied information experienced by long-distance walkers?*
Key concepts and frameworks	Call to explore embodied information present in serious leisure activities, possibly using ethnographic methods (Cox, Griffin and Hartel, 2017)
Justification for selection	• The call to explore this area suggested looking to physical activities, of which walking the WHW is one. • Ethnographic methods suitable for gathering data in the field.
Research question 2	*How do long-distance walkers seek, gather and share information in situ?*

Key concepts and frameworks	Call to use Hektor's information behaviour model (Hektor, 2001;Hartel, Cox and Griffin, 2016) to aid comparable classification of information behaviour and activities.
Justification for selection	• Used in studies on Camino de Santiago (Innocenti, 2023), so deepens knowledge in the area of long-distance walking. • Useful, or not, in classifying embodied information, linking with concepts RQ1.
Research question 3	*What are the connections between long-distance information behaviour and their wellbeing?*
Key concepts and frameworks	1. NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011): connect, be active, take notice, learn and give. 2. Exploring links between information behaviour and contemplative studies (Latham, Hartel and Gorichanaz, 2020)
Justification for selection	• NEF/NHS 5 ways to wellbeing give structure to analysing possible wellbeing benefits of walking the WHW. • Consideration of contemplative activities and information behaviour presents opportunity to explore this novel area. • Presents opportunity to link findings across the three research questions, how embodied information and information activities in Hektor may inform wellbeing.

Table 1. Summary of relationship between research questions and key concepts (Munro)

3. Research methodology

This section will set out details of the research methodology of both a Phase 1 study conducted between October 2021 and February 2022, as well as a Phase 2 study conducted in May 2022. The Phase 1 incorporated brief in situ interviews with fifty participants, then follow up online interviews with ten of these participants. This methodology was then developed further into the Phase 2 study of this thesis, reflecting a shift in focus in the research away from walking pilgrimage after the first study. This involved recruiting and conducting longer in situ interviews while I walked the route. This methodology has been designed to explore the questions of this research project and to deliver a thesis with novel findings. A summary of the research design for both data gathering exercises is shown below in Table 2.

	Phase 1 study	**Phase 2** study
Research design (Methodology, data collection methods, data analysis methods, research instruments and selection criteria)	- Ethnographic - In situ and online semi-structured interviews - Reflexive thematic analysis - Portable audio recorder, transcription software and coding book - Over 18 years old and walking all, or part, of the WHW over consecutive, or separate, days - Purposive sampling was used in this study.	- Ethnographic - In situ, semi-structured interviews - Reflexive thematic analysis - Portable audio recorder, transcription software and coding book - Over 18 years old and walking all, or part, of the WHW over consecutive, or separate days - Purposive sampling was primary method, with some snowball sampling occurring in this study.

Time & location	October 2021 at various locations along the WHW. November 2021 to February 2022 online.	May 2022 at various locations along the WHW.
Number of participants	50	25
Type & length of data	Quantitative demographic data from questionnaire. Qualitative data from short in situ interviews (average 3:32 minutes). Qualitative data from online interviews (average 24:49 minutes).	Quantitative demographic data from questionnaire. Qualitative data from in situ interview recordings (average 18:48 minutes).

Table 2. Summary of methodology (Munro)

3.1 Research questions

Key to framing this thesis are the research questions, as these defined what literature was reviewed, how the methodology was structured, how the research studies were carried out and analysed, as well as the findings, discussion, recommendations and conclusions. The research questions have been subjected to a number of iterations through the process of this PhD project, through consultation with supervisors and as a result of the annual internal departmental review process to allow continuation of the study. The research questions posed in this thesis are;

1. How is embodied information experienced by long-distance walkers?
2. How do long-distance walkers seek, gather, and share information in situ?
3. What are the connections between long-distance walkers' information behaviour and their wellbeing?

These are designed to explore the key themes and concepts of this research project: to uncover how participants experience embodied information during their journey on the WHW; how Hektor's information behaviour model (Hektor, 2001) can be utilised to describe their information behaviour as they walk the route and how information behaviour on the WHW can inform wellbeing benefits.

Walking pilgrimage did feature more prominently in the initial draft research questions, this focus shifted however following the Phase 1 exercise and feedback

from the 1st internal year review. Participants in the online interviews were asked whether their WHW journey felt like a pilgrimage and only 2 out of 10 said that it did. Much of the reading and use of studies related to walking pilgrimage were still relevant to the study of walkers on the WHW, however taking the concept of walking pilgrimage out of the research questions aided the process of creating more focused research questions.

3.2 Extensive review of literature

A key component of the project was an extensive review of literature to guide and frame the research through the lens of information science, as well as relevant work from other academic fields and non-academic sources. Literature was sourced that links with the research questions posed as part of this project and to explore the research problems that they pose. Details of the approach to the review of literature are detailed in section 2.1 of the previous chapter.

The review of literature has been key to informing all the other stages of this PhD project, from research questions, research design, analysis of the research and, ultimately, conclusions and recommendations drawn from the research.

3.3 Locating the research on the West Highland Way

This methodology was based on using the WHW as a walking pilgrimage route for the research, as suggested in the initial research questions, however other walking routes such as the Way of St. Andrews Pilgrimage (2020) or the John Muir Way (2020) were considered as the project was developed, but not ultimately selected. The rationale for selecting the WHW is based on its popularity as Scotland's most travelled long-distance walking route, with 36,000 walking the length of it annually (Scottish Natural Heritage, 2018). By locating the fieldwork in Scotland it was intended to mitigate against travel restrictions put in place by the Scottish Parliament that were an ongoing feature of COVID-19 related regulations during this time (Scottish Parliament Information Centre, 2023). This was still an ongoing issue during the two data gathering exercises and research was planned with contingency in mind. The Phase 1 study was planned on the basis that the level of restrictions allowed for participants to be recruited, and an initial interview conducted, outside in the field. Thankfully, this was the case and onsite recruitment took place between

October 14th and October 19th 2021. This was followed by a more in-depth interview conducted online between November 2021 and February 2022.

As noted above, the element of walking pilgrimage became less prominent as the methodology was developed, however it is important to recognise its role in shaping the research project. The selection of the WHW as a site of research is still valid in that it has not previously featured in any information behaviour studies, the activity of hiking can be demonstrated as serious leisure pursuit (Davidson and Stebbins, 2011) and it is Scotland's most popular long-distance walking route (Scottish Natural Heritage, 2018).

3.4 Ethnographic methodology and methods

This research utilised ethnographic methods and was designed to represent an ethnographic record (Emerson, Fretz and Shaw, 2011) of the experience of walking the WHW. Ethnography is rooted in anthropology and is widely used in social sciences, it seeks to provide a detailed and vivid description of an activity or phenomena (Atkinson, 2007). Therefore, it is not often a suitable method for testing a scientific hypothesis, rather for uncovering original findings about people in a place at a point in time. Appropriately for this research, use of ethnography is called for in one of the key papers in the literature review, Cox, Griffin and Hartel's on embodied information in serious leisure (2017). It points to ethnography as a suitable method for uncovering original findings in this area, these methods were also adopted by Lueg (2014) and by Gorichanaz (2015) in work that has laid the ground for future studies in embodied information. A recent study of walking pilgrims on Camino de Santiago employed ethnographic methods fruitfully (Innocenti, 2023). Ethnography is also used in considering walker's use of mobile computing technology (Eslambolchilar, Bødker and Chamberlain, 2016). The use of ethnography in information science can generate richly detailed data of people's experiences in an environment or while doing an activity (Hartel, 2020).

3.4.1 Strengths and weaknesses of ethnography

The strengths of adopting ethnography in this case included: developing an understanding of the route through personal experience of walking it; in situ interviews while participants walked the route ensured the experience was fresh in their minds and relayed in detail; recruitment while walking the route allowed for a

more relaxed approach, allowing for rapport to develop between myself and participants, resulting in more laid-back interviews.

There were associated weaknesses with this approach however, my personal experience of walking the route could bias this research and its findings. From this I brought a degree of positionality (Merriam *et al.*, 2001) to the research, as I had engaged in the same journey as those I was interviewing. From this, there was a risk of researcher bias, of the researcher becoming a participant (Probst, 2016), blurring the line between both roles. This is a limitation which has to be noted as part of the research process, while supervision of the research guards against overt researcher bias, there is an inherent risk, which cannot be removed that my personal experience of walking the WHW affected my design and analysis of it. This risk was countered by the benefits my personal experience brought into the design and analysis of this research. My personal experience of walking the route was based in sound ethnographic recording methods (Emerson, Fretz and Shaw, 2011) and was used to observe possible emergent themes, as well as helping to shape the research design in a practical manner, by having an understanding of the route and safe means to conduct the research. Excerpts from the ethnographic record such as photos and audio recordings have also been used to enhance the presentation of this research.

Choosing online recruitment and a survey-based approach could have resulted in a wider recruitment pool, arguably making findings more generalisable. However, selection of ethnographic methods to gather qualitative data was justified due to them being deemed as a fruitful and appropriate means of data collection for one of the key concepts of this research, embodied information (Cox, Griffin and Hartel, 2017). A further weakness was that recruitment occurring while walking the route could skew towards participants following a similar itinerary to me, missing out on the perspective of those on shorter or longer itineraries. This was deemed to be outweighed by the benefits of being able to recruit participants over the course of a number of days, often after a number of informal interactions, allowing for a degree of sociability to develop,

To further mitigate against these weaknesses: interview questions and analysis of the data were critiqued by both of my supervisors to guard against perceived bias; research methods were also scrutinised by the University of Strathclyde Computer

and Information Science Ethics Committee to assess their suitability and their appropriateness for gathering data through interviews with the public; interviews were conducted with participants on different itineraries to me.

3.4.2 Development of ethnographic methods

Before this, I was journaling after a number of mini field trips carried out in the local area, as COVID-19 restrictions had allowed (Scottish Parliament Information Centre, 2023). In doing so this represented an early iteration of the methods utilised while walking the WHW and is a well-used ethnographic method for noting observations related to the key themes in the research. Notes were made related to ideas such as my own experiences of information behaviour, embodied information and my interaction with mobile technology. These notes in turn helped inform the design of the research, helping to shape interview questions and hinting at possible themes to emerge once the data had been collected. These walks were undertaken in East Lothian, Midlothian and the Pentland Hills Regional Park and also allowed for a degree of preparation for walking the WHW. Indeed, this process was instructive in informing the observational activities in walking the route myself, an iterative approach to this ethnographic method.

I had also been documenting these field trips by taking photos and making sound recordings, this was partly in preparation of being able to do so usefully on my journeys along the WHW. The area of audio field recordings was a relatively new one to myself, so I was also journaling separately about my experiences with this as a form of ethnographic documentation and to develop my practice. Again, these processes were employed on my journey along the WHW, providing photos, videos and audio recordings of my journey that have been incorporated into elements of the research. As with my initial exploration of the WHW, this was conducted outside of departmental ethics approval, again no formal interviews were conducted with members of the public and none of the notes in my journal feature as findings in this thesis. They were helpful in initially informing the design of this research.

3.4.3 Initial ethnographic exploration of WHW

Much of the Phase 1 study, and subsequent Phase 2 study, was informed by my personal experience of walking the route in May 2021. Doing so allowed me to understand my sense of the route, understanding which sections were tougher for

example and best avoided for approaching participants to recruit. During this trip in May 2021, I was able to document my journey using my mobile phone to take photos and videos. The photo below in Figure 3 is from when I completed the journey and was taken be a fellow walker met along the route. Further to this, I made a number of audio recordings of the natural environment of the WHW and as I walked along it. This was part of developing an ethnographic record of the route and my personal experience on it.

Figure 3. – Photo taken by a fellow walker of myself at end point of the WHW (Munro)

As a further form of ethnographic field work, I journaled every day which allowed me to record my experiences as I went and to consider whether any of them relate to the research questions and themes, such as embodied information or wellbeing benefits. These journal entries were made by hand in a notebook and were typed up as they appeared in this form. From this, a coding process of the notes was conducted to look for common themes related to the key concepts, as well as an initial, informal way of understanding the reasons for walking the WHW people mentioned. This coding has been converted into a restructured version of the notes according the emergent themes. This, in turn, helped guide elements of the Phase 1 study design, such as locations and interview questions, as well as for the Phase 2 study. I also had the chance to speak to people running accommodation, or other businesses, along the route who had a good deal of experience with people walking the WHW, as well as having walked the route themselves in many instances. They were also able to provide useful information regarding locations and related notable

experiences of those walking the WHW. This exploration of the route was conducted outside of departmental ethics approval, so no formal interviews were recorded and none of the notes made have been featured in the findings of this thesis. My experiences and notes made from journaling did aid the design and ethical approval of data gathering for the rest of this research project.

3.4.4 Incorporation of ethnographic methods into data gathering

The Phase 1 study, conducted in situ in October 2021 and online from November 2021 to February 2022, incorporated ethnographic methods into its design, firstly by conducting the initial interview in the field, and secondly by asking participants to listen to recordings made as part of the ethnographic record on the WHW and reflect on whether they generate any memories or reflections of their journey in the follow-up online interview.

The Phase 2 study was conducted entirely in situ on the WHW as I walked the route again in May 2022. By walking the route and carrying out the interview recordings in situ, it was hoped that this would enrich the potential findings, as they were related during the process and I, as the researcher, undertook the same activity at the same time. This has hopefully illuminated themes related to the research questions, in terms of participants' information behaviour and demonstrated examples of embodied information and wellbeing benefits.

In conducting audio recordings along the route, this represented another form of ethnographic fieldwork and allowed me to build a cache of recordings to use in the Phase 1 study. This stock was further increased by the returning to the location, for both the Phase 1 and Phase 2 studies.

These methods helped to guide the research methodology along ethnographic grounds and sought to relate the experiences of those walking the WHW to the key themes and concepts informing this research.

3.4.5 Research methods and instruments

Methods adopted over the course of this research have included basic demographic questionnaires, in situ interviews on the WHW and online interviews. Recruitment was all conducted in situ on the WHW, either in various static locations along the route, or while walking the length of the route. In situ interviews took place at various

locations along the actual route of the WHW, as well as cafes, bars, restaurants and accommodation alongside the route. All in situ interviews were recorded on a portable audio recorder, a Tascam DR-100iii, while online interviews were video recorded on Zoom. All interview data was anonymised and stored in compliance with the application to the departmental ethics committee. Transcription of the interview recordings was aided by Otter transcription software. Some basic quantitative analysis was conducted on the demographic data using Excel. Reflexive thematic analysis (Braun and Clarke, 2006;Braun and Clarke, 2019) of the qualitative interview data was the main method adopted for this analysis. Initially conducted on paper, it was then written up into code books and subsequently written up electronically using Word.

3.4.6 Strengths and weaknesses of reflexive thematic analysis

The method of reflexive thematic analysis has been widely adopted in social sciences (Braun and Clarke, 2019) and is defined as: *"reflexive thematic analysis is an easily accessible and theoretically flexible interpretative approach to qualitative data analysis that facilitates the identification and analysis of patterns or themes in a given data set"* (Byrne, 2022, p.1392). As with the use of ethnographic methods, there are strengths and weaknesses to this approach.

For this research, it was selected due to its adaptability, meaning coding and analysis could begin deductively according to key themes identified through the research questions and review of literature, and then continue inductively through the different iterations of analysis. The consideration of embodied information, Hektor's information behaviour model (Hektor, 2001) and the NEF/NHS 5 ways to wellbeing (Aked, 2011) allowed for focused analysis in earlier iterations, but the flexibility in letting themes emerge inductively alongside this aided in clarity of findings. This compares with other forms of qualitative data analysis like grounded theory, which focuses more on inductive techniques. However, the links between the research questions and these key concepts in the literature meant that deductive analysis of these themes was appropriate, mixed with some inductive analysis.

In terms of weaknesses, again my positionality as a researcher has to be acknowledged (Merriam *et al.*, 2001), as it was with adopting ethnographic methods of data collection. Having walked the route myself twice, this can represent a form of

bias in the analysis of the data where I was looking for evidence of things that had happened in my experiences. This was mitigated against by sharing drafts with my supervisors, who had a degree of separation from my own experiences, to critique the analysis, including for signs of bias. As with ethnographic methods, this risk of bias is inherent in thematic analysis and it should always be acknowledged. Another potential weakness in thematic analysis is identified by its creators (Braun and Clarke, 2006;Braun and Clarke, 2019), that adoption of their technique is often misunderstood and not applied correctly. To counter this, I was careful in applying the technique as described by the originators of the technique in an updated reflection on thematic analysis (Braun and Clarke, 2019), as well as a practical demonstration of its correct usage (Byrne, 2022).

3.5 Phase 1 study

A key point to note in discussing the methodology of this thesis is that during this research project two studies were conducted, Phase 1 and Phase 2. The design of this first data gathering exercise was intended so that it could have represented the main study of this thesis, and this may have been the case were it not for the shift in considering the WHW as a site of pilgrimage, a move that occurred as a result of this Phase 1 study. As a result of this change, I felt that a further data gathering exercise, the Phase 2 study, was necessary to fully represent the new focus on considering the WHW purely as a long-distance hiking route.

This Phase 1 study was carried out through an initial process of recruiting participants in the field and undertaking a brief onsite interview undertaken between October 14th and October 19th 2021. This gathered data from 50 participants. Participants were then invited by email to take part in follow-up online interviews and these took place with 10 participants between November ’21 and February ‘22. The research questions at the time of conducting this study were:

1. How do walking pilgrims use and interpret embodied information before, during and after a pilgrimage?
2. How does embodied information influence meaningful experiences and memories from a walking pilgrimage?
3. How can we digitally capture meaningful experiences and memories in ways that support wellbeing?

3.5.1 Ethical approval (Phase 1 study)

A key component of both Phase 1 and Phase 2 studies was approval from the Computer and Information Science (CIS) Ethics Committee at the University of Strathclyde to ensure that the methodology was rigorously designed to protect the personal data of potential participants. This process was also useful in generating iterative drafts of the methodology for this thesis.

A successful application was made to the CIS Ethics Committee before the Phase 1 study was conducted and approval was granted on 11th October 2021. The primary concerns of this ethics application were to do with an appropriate data management plan, to protect participants' privacy and ensure adherence to GDPR regulations. To do so, all demographic and interview data relating to participants was anonymised and stored on secure University of Strathclyde servers. The aim was to speak to participants over 18 years of age and not specifically belonging to a vulnerable health group, which simplified the process of applying for ethics approval. Informed consent from participants was also a key feature of the ethics application, and given that consent was being sought immediately in the field, a degree of extra care was taken during the ethics approval process to ensure that participant information and consent forms were clear and unambiguous about what was expected of participants. Care was also taken to design the study to meet with COVID-19 regulations at the time (Scottish Parliament Information Centre, 2023), so that participation was safe.

3.5.2 In situ recruitment and interviews (Phase 1 study)

Onsite recruitment of participants was conducted at locations on the WHW, by the side of the path in sections that were wide enough to safely conduct an interview without blocking the way. Recruitment was initiated by a request to speak to the participants, followed by an introductory explanation of the study, part of which involved clearly stating that I was a PhD researcher in the CIS department at the University of Strathclyde. Participants were asked if there were any aspects of the research topics that they would like a further explanation of, for example meaningful experiences or embodied information. After this an invitation to consent to taking part in the research was made and participants were asked to sign a consent form. This invitation to consent was made immediately prior to conducting the onsite interview,

consisting of some demographic questionnaire questions and three interview questions. The average length of these interviews, intended to be short, was 3:32 minutes in length. This design was to allow for a relatively quick engagement with potential participants in the field, who were in some cases eager not be held up for long when they had a long day of walking. This was successful as fifty participants were interviewed during this stage.

Locations for approaching participants were concentrated on the second half of the route, to allow for participants to have had some time to generate experiences to reflect on. Locations included: Tyndrum, Bridge of Orchy, Glencoe and Kinlochleven. While in Kinlochleven, interviews were conducted in and around the village in the morning and later afternoon, as well as trips to Glencoe by car to interview participants during the middle of the day. While in Tyndrum, interviews were conducted in and around that village, no trips were made during the day to other locations, mainly due to poor weather conditions. One interview was conducted at Bridge of Orchy while travelling between Kinlochleven and Tyndrum on October 17th.

Only participants over the age of 18 were recruited, ascertaining this was asked as part of the initial introductory process and was confirmed in the process of asking some basic demographic questionnaire questions at the start of the onsite interview. The answers to these demographic questionnaire questions were asked first and recorded on the same portable audio recording device used to record the onsite interview. Other exclusion criteria were people who were just engaging in a walk locally and not in the process of walking the length of the WHW.

Participants who were walking the WHW in stages, over different weekends for example, were included. Individuals, dyads and groups were all recruited and there was no intention to speak to only one form of these groups. If in a dyad or group, individual consent was sought and signed for and no data was used from any member of a dyad or group who did not consent. At the point of signing a consent form, each participant was assigned a non-personal ID number in sequential order of signing the consent form, e.g. P1, P2, P3 etc, this was assigned to all stored forms of data, including demographic data and interview recordings. If a dyad or group was participating, demographic questionnaire questions were asked in the same sequential order as consent forms were signed for identification purposes.

For this initial in situ engagement, a short interview was designed involving three questions. These questions were as follows:

1 What drew you to walk the West Highland Way?

2 Did you have a meaningful experience yesterday?

3 How have you recorded your journey so far?

These were designed to relate to the research questions, as they were at the time.

3.5.3 Online follow-up interviews (Phase 1 study)

Away from the field of research, online interviews were conducted between November 2021 and February 2022. Participants were emailed via an email account they consented to share during the onsite interviews in October 2021. They were then directed to a shared calendar application, Calendly, to arrange interview times and interviews were conducted using the Zoom video recording application. A follow-up email was issued to those participants who had not yet responded in January 2022 and from replies to this, interviews were set up on an ad hoc basis rather than using the calendar application.

The interviews were based around semi-structured interview questions designed to explore themes set out in the research questions, as they stood, and related to key themes in the literature review. The semi-structured interview questions used were as follows;

1. How was the rest of your journey?
2. Did you have any other meaningful (or memorable) experiences?
3. Did your journey feel like a pilgrimage?
4. How did you plan your journey?
5. Where did you look for information when you were planning?
6. What information did you need while you were walking the West Highland Way?
7. How did you interact with your fellow walkers?
8. What did you think about while you were walking?
9. Can you recall any memories based on your sensory experience of the walk?
10. How did you feel at the end of your journey?

Two additional questions were asked in relation to the playing to participants of an audio field recording made onsite on the WHW in May 2021:

1. How do you feel listening to that clip?
2. Does listening to that clip bring back any memories of your journey?

The interviews were predominantly with one interviewee at a time but one was conducted with two participants at a time, a dyad of a married couple. Interviews were recorded by using the Zoom video calling application. Audio recordings of the interviews were uploaded to and then transcribed using transcription software Otter AI.

The online interviews were broadly successful, however this method of interview did not feature in future data gathering. While there was less risk from inclement weather conditions, a downside of this was that the experience of when a participant walked the WHW was not fresh in the mind, some participants who were interviewed in February 2022 expressed that they were worried that they could not recall the journey as well as they could if they had completed it more recently. In situ interviews arguably aligned more closely to the ethnographic methods proposed in this research. This, combined with the shift in focus away from pilgrimage, informed the differing approach to the Phase 2 study.

3.5.4 Onsite interview data analysis (Phase 1 study)

For the Phase 1 study, the basic demographic data was analysed first using basic quantitative analysis in an Excel spreadsheet. The proportion of different age groups and gender breakdown of participants are presented below in Figure 4.

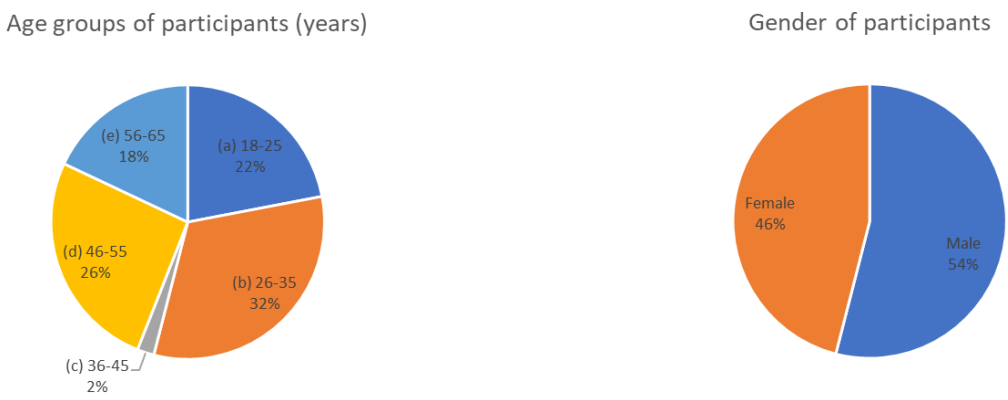

Figure 4. Pie charts for age and gender of in situ Phase 1 study participants (Munro)

This demonstrates a reasonably wide age range of participants, with only the 36-45 years old group being significantly less represented than the other age groups, this is not anticipated to skew the findings. For gender breakdown, this is not quite an even split, so any findings from the Phase 1 study should be considered to have a possibility of skewing towards a more male-dominated perspective. This balance was a result of in situ recruitment and the research was not designed with seeking perspective of any particular gender. For a greater understanding of the female perspective of long-distance walking, research design of future studies looking solely to interview females would be welcome.

The breakdown of participants who had, or had not, walked the WHW before and those who had walked another long-distance route are shown below in Figure 5.

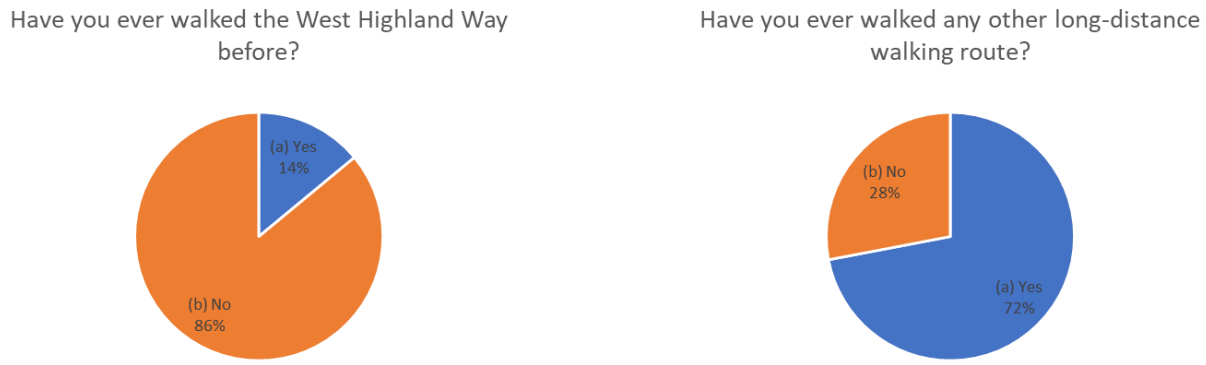

Figure 5. Pie charts for long-distance walking route history of in situ Phase 1 study participants (Munro)

This shows that a significant majority of participants had never walked the WHW before and therefore their experience was a novel one. This shows an interesting interrelationship between the two charts, while for many this was their first time walking the WHW, the majority of participants had done some other long-distance route. This suggests that the activity of walking the WHW represents an extension of a serious leisure activity (Davidson and Stebbins, 2011), namely long-distance walking.

3.5.5 Thematic analysis of onsite interview data (Phase 1 study)

The thematic analysis of the onsite interview data was conducted in multiple stages, in line with guidance on using reflexive thematic analysis (Braun and Clarke,

2006;Braun and Clarke, 2019;Byrne, 2022). Beginning with the transcription process, an early form of thematic analysis where the time spent fixing transcripts generated by transcription software allowed for the data to be first considered. Once transcription was finished, data related to the theme of meaningful experiences was deductively analysed first for the purposes of writing a short paper for submission to the Information Seeking In Context (ISIC) conference in 2022 (Munro, Innocenti and Dunlop, 2022). This was first carried out by coding paper transcripts for responses to the question "*Did you have a meaningful experience yesterday?*", highlighting responses that described something meaningful or memorable to the participant, as well as noting responses from participants who said they had not had a meaningful experience. After this, a secondary sweep of the interview data was conducted for emergent themes and two prominent ones emerged inductively; natural connection and social connection. The highlighted data was then assessed for relevance to these two emergent themes and further coded appropriately. Annotations of types of data were then made in a code book for natural and social connections, for example: *"weather"* and *"natural beauty"* for natural connection; and *"with a friend"*, *"with fellow walkers"* and *"with family"* for social connection. From this, the types of data assigned to the emergent themes were grouped together along with participant numbers who had discussed these topics and links to possible quotations in the code book. These groupings were then written up according to prominence and to highlight possible links between them. An example of the iterations of coding is given in Appendix A, at the end of the thesis.

The analysis of the rest of the onsite interview data occurred at a later date after the submission of a short paper to the ISIC 2022 conference (Munro, Innocenti and Dunlop, 2022). This deductive stage of analysis focused on the other two onsite interview questions and involved scanning the same paper transcripts for relevant data and coded using highlighter pens and by making annotations of useful types of data. Key to this was the highlighting of evidence of links to the concepts of serious leisure and higher things when asked what had drawn participants to walk the WHW. These were coded using the same broad meaningful experience code established previously, with annotations made to identify them as serious leisure or higher things and how this data was typified in a code book. Any further data related to meaningful

experiences was coded in line with the inductive themes established from the preparation of the ISIC short paper, natural and social connections.

The data regarding how their journeys were recorded and shared was given a separate code and was grouped into two types from inductive analysis; digital and analogue. As with the previous iteration of thematic analysis of onsite interview data, the types of data were then grouped according to these themes in a code book, in this case: serious leisure, higher things, natural connection, social connection and how their journey had been recorded. These groupings of types of data under these themes were then annotated with participant numbers of those who had relayed them before a formal writing up process began.

This process broadly mirrors the six stages typically undertaken in reflexive thematic analysis; familiarisation with the data, coding, generating initial themes, reviewing themes, defining and naming themes and, finally, writing up. The thematic analysis was initially conducted deductively according to the macro themes, through further iterations themes emerged inductively (Braun and Clarke, 2019). There was also an element of basic quantitative analysis of the demographic data given by participants to help illustrate the range of recruitment.

3.5.6 Online interview data analysis (Phase 1 study)

Nine interviews with ten participants were conducted between November 2021 and February 2022 and consisted of ten semi-structured questions, with an extra segment at the end of the interview where they were played a 45-second long clip of a recording taken while walking the WHW in May 2021 and asked two semi-structured questions about their experience listening to it. A demographic breakdown of the online participants is given in Table 3 below.

	Age (years)	Gender	Walked the WHW before	Walked any other long-distance walking route
Participant 3	56-65	Male	Yes	Yes
Participant 15	26-35	Female	No	No
Participant 16	56-65	Female	No	No
Participant 17	56-65	Male	No	No
Participant 20	26-35	Male	No	No
Participant 28	26-35	Female	No	Yes
Participant 35	26-35	Female	No	No
Participant 36	26-35	Male	No	Yes
Participant 41	18-25	Female	No	Yes
Participant 46	46-55	Female	No	Yes

Table 3. Demographic data of online interview Phase 1 study participants (Munro)

The average length of online interview was 24 minutes and 47 seconds.

3.5.7 Thematic analysis of online data (Phase 1 study)

The analysis of the online interview data occurred after the process of analysing the onsite interview data had finished. This also began during the process of transcription, where initial considerations were made of the data. Once transcription was completed, analysis was initially carried out on paper transcripts using the following broad macro themes for codes: pilgrimage, embodied information, wellbeing and Hektor's information behaviour model (Hektor, 2001). A table setting out the macro and micro themes used during thematic analysis is set out below in Table 4.

Macro themes	Micro themes
• Pilgrimage	• Yes/No • Why?
• Embodied information	• Natural connections • From within • From others • Audio component of online interview
• Wellbeing	• Serious leisure • Higher things • Contemplation • Social connections
• Hektor's information behaviour model	• Search & retrieve • Browse • Monitor • Unfold • Exchange • Dress • Instruct • Publish

Table 4. Summary of themes from thematic analysis of Phase 1 study (Munro)

Once an initial sweep of the transcripts had been made, a further iteration was conducted, firstly to mark data related to pilgrimage according to a yes/no response as to whether participants felt like their journey had been a pilgrimage or not. Notes of reasons given were then made next to the responses. Data highlighted as being related to embodied information was then further coded using the theme of natural connection from onsite analysis, as well as the themes of embodied information from within and observed in others. This is a mixture of inductive analysis based on the data, as well as Annemaree Lloyd's research on the use of embodied information by emergency workers (Lloyd, 2010;Bonner and Lloyd, 2011). The embodied information code was also used to highlight data related to the component of the interview where a field recording from the WHW was played to participants. Also, during this second sweep of the data, annotations related to wellbeing began to be ascribed to micro themes of serious leisure, higher things and contemplation, all prominent concepts in the review of literature. An inductive micro theme that emerged from this Phase 1 study was that of social connections on the route. The coding of data related to Hektor's information behaviour model (Hektor, 2001) was also annotated for relevance to each of the eight information behaviours of the model, here used as micro themes: search & retrieve, browse, monitor, unfold, exchange, dress, instruct and publish. As with the analysis of the onsite data, groupings of types or descriptions of data were made in a code book, according to these themes with notes of which participants had stated them. From this grouping of data according to themes, the following analysis was formally written up and used as a guide for the design and analysis of the Phase 2 study.

3.6 Audio component (Phase 1 study)

As part of the original PhD proposal, there was an initial intention to incorporate audio recordings taken in the field as part of the research. Use of audio recordings to document a representation of the research field, a sonic ethnography (Ferrarini and Scaldaferri, 2020) or sound ethnography (Powell and Gershon, 2020), has been used in the fields of anthropology and in sounds studies, but has not yet been adopted in information behaviour studies. The making of field recordings during this study was partially designed to align with the call from Chamberlain *et al.*'s (2017) paper to incorporate the use of mobile devices in capturing audio for interactive purposes in the field of Human Computer Interaction. This area represents a novel

field for information behaviour studies, particularly in considering how different types of embodied information inform meaningful experiences, the role of auditory information in serious leisure pursuits and how audio collections in libraries may be used for wellbeing benefits.

Recordings were made at a number of locations on the WHW using a Tascam DR-100iii, a handheld audio recording device, which was also used to record interviews. A photo from the ethnographic record, taken on my personal trip to walk the route in May 2021, demonstrates how the recording device would be set up in location on, or in this case just off, the WHW, is shown below in Figure 6, These were designed to represent a soundscape of the environment (Brown, 2011), which David Holmes posits is a way of demonstrating a more extensive understanding of place, from the perspective of practical geography, which can generate deeper findings from traditional fieldwork practices (Holmes, 2009). These recordings represented part of the ethnographic record of the research, alongside field notes, photos and video recordings, an important part of conducing ethnographic research (Emerson, Fretz and Shaw, 2011). If viewing the PDF version of this thesis on Adobe Acrobat, please click on the photo to hear a collage of recordings from the WHW, if not, it can be found here https://keithmunro.bandcamp.com/track/every-step-is-moving-me-up (Munro, 2023).

Figure 6. Photograph of audio recorder making a field recording on the WHW (Munro)

Instances of the use of soundscapes include recordings from the Rocky Mountains (National Park Service, 2020) and a collection of nature recordings from the British Library (British Library, 2020). Examples of soundscapes in Human Computer Interaction include: recalling memories of family holidays (Petrelli *et al.*, 2010) and relaying information about heritage on a walking tour in a graveyard (Ciolfi and Petrelli, 2015). They can also align with the concept of calm technology, technology designed to assist in wellbeing (Weiser and Brown, 1996;Case, 2015). There is an archive of soundscapes developed through a project between the University of Exeter and the BBC which has organised a collection of natural soundscapes designed to aid wellbeing practices (BBC, 2021).

Incorporation of an audio recording playback during the follow-up online interview was designed to explore whether this triggered any meaningful memories or reflections of walking the WHW from participants, or whether more broadly they found the recordings to offer a calming experience. Over thirty audio recordings had already been taken at various points along the WHW during my initial trip to walk the route in May 2021 and five more were taken on the return to conduct the Phase 1 study onsite.

During the online interviews, participants were played a 45-second long clip of a recording made while I walked the WHW in May 2021, specifically walking down through Glen Nevis, on a gravel track passing some streams. The recording was made with a portable recording device attached to a handheld grip. The original recording was over 6-minutes long but was edited down using Audacity sound editing software. This was done so that the listening portion of the interview would not take too long. Participants were then asked two questions to reflect on the recording; how did it make them feel and did it bring back any memories of walking the WHW.

The audio was played to participants using the advanced screen sharing settings on Zoom, where only the audio is shared. Participants were invited to wear headphones or earphones during this part of the interview, for those that didn't they were all in a relatively quiet location where they could hear the recording through their device's speaker. This element of the research is tricky, as ideally all participants would have heard the same recording in the same way, for example using the same pair of

headphones and with a set range of volume so that it could be shown they had all heard it in a similar manner.

To analyse this data, transcripts were coded using the extended theme of embodied information used elsewhere in the analysis and then annotated to indicate they represented audible forms of information. For this section, participants from the Phase 1 study have "Phase 1" before their participant number. From this there were some commonly stated reactions to the recording, one was that it evoked memories of their walk on the WHW; "*it took me back to part of the walk*" (Phase 1 P3), "*it makes me think of walking the West Highland Way*" (Phase 1 P16), *"I would say I was transported*" (Phase 1 P17) and *"we automatically thought of being back on the hike"* (Phase 1 P35). Participants recalled certain sections of the WHW and natural elements of the landscape such as wind, running water, forests, pine needles, gravel underfoot and birds heard along the route, although none mentioned the actual location of the recording, suggesting that the recordings are open to interpretation in terms of where it was taken. Participants also discussed how they found the recording *"relaxing"* (Phase 1 P17 & P28), *"calming"* (Phase 1 P35 & P36), *"soothing"* and *"peaceful"* (Phase 1 P41), as well as "*that's the kind of sound I hear when I'm really happy"* (Phase 1 P20). There was also discussion from some participants that they would like to be able to use the recording functionally: *"It would be good to play in the background while I'm working"* (Phase 1 P15) and "*Can I study to this?*" (Phase 1 P41).

From this analysis, there were links to the meaningful experiences described in both onsite and online interviews, particularly to the natural connections experienced. Participants recalled their experience of walking the WHW and this ties in with the findings that auditory embodied information from the landscape and wildlife created memorable moments. The way that participants characterised listening to the recording as relaxing, calming and peaceful is indicative that there may be associated wellbeing benefits linked to listening to the recording. The isolation of sensory information seems to link to the connect and take notice stages of the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011).

While the findings from the Phase 1 study indicated this was a potential avenue for rich findings, it wasn't possible to develop this line of research in line with the

research questions as they developed, or within the time constraints of the research project. It wasn't possible to repeat this element in the Phase 2 study, due to the lack of control of the surrounding environment, conducting interviews outside or in cafes, bars, restaurants and hotels where background noise would make listening to a field recording challenging and not reliable for studying.

To fully accommodate incorporating an audio component of the research with participants would have needed a separate, more focused data gathering method. Although the audio component of the research was not featured in the Phase 2 study, some of the recordings have been shared publicly on audio streaming services and have also been utilised in presentations based on this research. To listen to a collage of recordings made on the WHW, please click here, or visit https://keithmunro.bandcamp.com/track/every-step-is-moving-me-up (Munro, 2023). Future studies looking at the use of field recording and soundscapes from an information science perspective, particularly an information behaviour viewpoint, could uncover novel findings related to auditory information as a form of embodied information in serious leisure pursuits, sound recording as a form of ethnographic research in information science, the classification and use of audio recordings in library collections and possible wellbeing benefits of making and listening to these recordings.

3.7 - Phase 2 study

This section of the chapter details the research methodology for the Phase 2 study conducted in situ while I walked the WHW in May 2022. The following research questions were used in this Phase 2 study:

1. How is embodied information experienced by long-distance walkers?
2. How do long-distance walkers seek, gather, and share information in situ?
3. What are the connections between long-distance walkers' information behaviour and their wellbeing?

This data gathering exercise was based on developing the Phase 1 study, detailed previously. The field trip to gather data took place between May 18th and May 26th and involved me walking the length of the route over 8 days, conducting recruitment and interviews with participants as I went. None of the participants in this study took part in the Phase 1 study. This field trip was subject to its own dedicated risk

assessment, drawn up between myself and the head of department in CIS. Interviews were recorded on the same portable handheld audio recording device as the Phase 1 study, a Tascam DR-100mkiii.

3.7.1 – Ethical approval (Phase 2 study)

As with the Phase 1 study, research conducted with human participants required being granted ethical approval from the University of Strathclyde CIS Departmental Ethics Committee. Doing so was key to ensuring participants' informed consent, as well as the processing and storing of their data. Approval for this exercise was granted on May 5th 2022.

Two types of data were collected during this data gathering exercise, basic demographic data and qualitative data generated through interviews. The demographic data was captured via a questionnaire answered during an audio recording in situ and then uploaded to University of Strathclyde servers after it had been extracted to Excel. Qualitative data from interviews was captured using a portable audio recorder on location. The audio recordings, marked by participant number, time and date, were stored on University of Strathclyde servers until the research was finished. The transcriptions of the interviews were kept on University of Strathclyde servers. From this, anonymised transcripts were analysed thematically using analogue and digital methods, with any digital files relating to this saved on University of Strathclyde servers. All draft iterations of the study have been kept on University of Strathclyde servers.

In terms of data security on location, there were signed consent forms and the audio recordings of interviews. The signed paper consent forms were stored in a waterproof bag inside my rucksack while out in the field and then in a locked place at my accommodation, while away on the field trip. Forms were scanned and then uploaded to University of Strathclyde servers after returning from the field trip and paper copies will be securely destroyed via shredding at the end of the research project. Audio recordings were kept on a portable recording device during the day in the field, again inside a waterproof bag inside my rucksack. At the end of each day they were extracted from the recording device using my University of Strathclyde laptop and uploaded to the University of Strathclyde H: drive and OneDrive, as soon as there was an available internet connection. There was no personalised data

logged in the metadata of the recordings, or any personally identifiable data such as names or addresses where people live. Recordings were deleted from the portable audio device once returned from the field trip and checks made that they were securely backed up. The portable audio recorder was on me at all times while out in the field, or in a locked location at my accommodation. In terms of encryption, all data was uploaded and saved using my University of Strathclyde laptop which uses a departmentally accredited VPN service.

3.7.2 – In situ recruitment and interviews (Phase 2 study)

Recruitment of participants took place in situ at various locations on the WHW, and was carried out as I walked the length of the route myself. Recruitment was initiated by a request to speak to the participants, followed by an introductory explanation of the study, part of which involved clearly stating that I was a PhD researcher in the CIS department at the University of Strathclyde and showing my photographic ID. Participants were then asked if there were any aspects of the research topics that they would like a further explanation of, for example embodied information.

After this an invitation to participate in an interview was made and participants were asked to sign a consent form before conducting an interview. In all cases the invitation to consent was made immediately prior to conducting the interview. For the most part, the initial approach to participate was made on a previous day to when the interview took place, sometimes multiple days beforehand. This was due to the nature of seeing potential participants over a number of days during the journey. The variations on this were that two participants were approached immediately prior to interview (P3 & P4) and another two participants (P10 & P11) were initially told about and informally recruited to the study by two other participants (P5 & P6).

A number of other walkers were approached in the manner described above, but it was not possible to arrange a time and place to sign consent forms and conduct an interview, principally due to time restrictions, adverse weather or diverging itineraries. At the time of conducting the interviews, participants were shown a laminated participant information sheet and privacy notice before signing a consent form. All interviewed participants were given a postcard sized version of the information sheet to keep, some during the initial approach before the interview was

conducted, as well as some of the potential participants who it was not possible to interview.

The information sheet included a brief summary of the study and described how it was designed to look at embodied information and wellbeing benefits. Some participants asked for an explanation of what embodied information was and a broad layman's definition of the concept was offered, information experienced by the body and generated by the body. This was accepted without any further questioning and seemed to be understood by those who asked. The information sheet (Appendix B) and the consent form (Appendix C) are shown as appendices at the end of this chapter.

Interviews were arranged with participants at a convenient time and location for them. In practice this was mainly in locations around accommodation at various stops along the WHW. The interviews took place in the following locations: covered seating area in the By The Way campsite in Tyndrum; a platform at Bridge of Orchy train station; a lounge in the Bridge of Orchy Hotel; a lounge in the Inveroran Hotel; the cafeteria at Glencoe Mountain Resort; the lobby of the Kingshouse Hotel; the bar and the campsite facilities at the Macdonald Hotel in Kinlochleven; and outside the Tailrace Inn in Kinlochleven. Two interviews were conducted in a more ad hoc manner in a location by the side of the path between Inveroran and Kingshouse, although care was taken to ensure this location was wide enough for other walkers to walk past safely, and also that there were no issues with wind noise affecting the recording of the interviews. The interview locations at Inveroran and beside the path between Inveroran and Kingshouse are demonstrated over the page in Figure 7. All interviews took place during the second half of the route, this was partly by design so that invitations to participate could be made over the first half of the route, and to allow for participants to have a few days experience of walking. Interviews typically took between 15 and 20 minutes and were recorded using an audio recording device with wind protection on the microphone to prevent wind noise significantly affecting the interview recording.

Figure 7. Locations of the interviews with participants 7, 8, 9, 10 & 11 in Phase 2 study (Munro)

Only participants over the age of 18 were recruited, this was ascertained during the initial introductory process and confirmed in the process of asking some basic demographic questionnaire questions at the start of the interview. The answers to these demographic questionnaire questions were asked first and recorded on the portable audio recording device used to record the rest of the main interview questions. Other exclusion criteria included people who were just engaging in a walk locally and were not in the process of walking the WHW. Participants who were not walking the full length of the formal route from Milngavie to Fort William, but were still walking the majority of the route over multiple days were included. Individuals, dyads and groups were all recruited and there was no intention to speak to only one form of these groups. If in a dyad or group, individual consent was sought and signed for and no data was collected from any member of a dyad or group who did not consent to participate. At the point of signing a consent form, each participant was assigned a non-personal ID number in sequential order of signing the consent form, e.g. P1, P2, P3 etc, this was then assigned to all stored forms of data including demographic data, audio interview recordings, transcripts and written forms of data analysis. If a dyad or group was participating, demographic questionnaire questions were asked in the same sequential order as consent forms were signed for identification purposes.

During the interview, participants were asked a number of basic demographic questions (Appendix D) concerning: age, gender, nationality, place of residence, whether they had walked the WHW before, whether they had walked any other long-distance walking routes and, if they had, what ones they had done. They were then asked fifteen semi-structured interview questions (Appendix D) that were developed to elicit relevant responses to the research questions around: embodied information, Hektor's information behaviour model: and possible wellbeing benefits while walking the route. Questions were critiqued by supervisors during development and were also based on observations of my initial journey on the WHW to explore the route in May 2021 and during the Phase 1 study.

3.7.3 – Data analysis (Phase 2 study)

The demographic data collected by a questionnaire at the start of the interviews was processed using Excel to create basic graphical representations of the participants. The age range and gender of participants can be seen over the page in Figure 8.

Figure 8. Pie charts for age and gender of Phase 2 study participants (Munro)

This shows a reasonable diversity of age range, with only the 18-25 age group significantly lower than the other age groups, this does not represent a significant threat to the generalisability of the results. The gender breakdown of participants was 52% female and 48% male, this was in contrast to the Phase 1 study, where gender was represented as 46% female and 54% male, so is arguably more representative of female perspectives. However, across both studies the balance is 48% female and 52% male, so the points made earlier about the Phase 1 study in regard to more focused representation of female perspectives still stand. A table displaying the demographics of the participants is set out below in Table 5.

	Age group (years)	Gender	Nationality	Place of residence	Walked WHW before	Walked other long-distance route
Participant 1	46-55	Male	German	Germany	No	Yes
Participant 2	56-65	Male	German	Germany	Yes	Yes
Participant 3	36-45	Female	American	USA	No	No
Participant 4	46-55	Male	American	USA	No	No
Participant 5	56-65	Male	American	USA	No	Yes
Participant 6	46-55	Female	American	USA	No	Yes
Participant 7	26-35	Male	French	France	No	Yes
Participant 8	26-35	Female	French	France	No	Yes
Participant 9	36-45	Male	Australian	Australia	No	No
Participant 10	26-35	Female	American	USA	No	Yes
Participant 11	36-45	Male	American	USA	No	Yes
Participant 12	26-35	Male	Dutch	Netherlands	No	No
Participant 13	18-25	Female	Dutch	Netherlands	No	No
Participant 14	56-65	Female	British	UK	No	Yes
Participant 15	56-65	Female	British	UK	No	Yes
Participant 16	36-45	Male	Belgian	Belgium	No	No
Participant 17	36-45	Female	Canadian	UK	No	Yes
Participant 18	56-65	Female	Canadian	Canada	No	No
Participant 19	65+	Female	Canadian	Canada	No	Yes
Participant 20	56-65	Female	Canadian	Canada	No	No
Participant 21	65+	Male	British	UK	No	Yes
Participant 22	65+	Female	British	UK	No	No
Participant 23	26-35	Female	Canadian/American	UK	No	No
Participant 24	36-45	Male	British	UK	No	No
Participant 25	26-35	Male	Scottish	UK	No	No

Table 5. Demographic data for Phase 2 study (Munro)

The range of nationalities of participants included: German, American, Canadian, French, Dutch, Belgian and UK. Only one participant had previously walked the WHW before, while 13 had previously done some other form of long-distance walking versus 12 who had not done so. Other long-distance walks undertaken by participants included, part or all of: Coast to Coast, Hadrian's Wall, Rob Roy Way, Southern Upland Way, Appalachian Trail, Northville Placid Trail, Dales Way, Cumbrian Way, North Norfolk Coastal Path, Camino de Santiago and the Pennines Way.

The qualitative data gathered through the semi-structured interviews was transcribed, only by myself, using transcription software, in this case Otter AI. Once transcribed, the interview data was subjected to thematic analysis.

A table of the macro themes and linked micro themes is presented over the page in Table 6.

Macro themes	Micro themes
• Embodied information	• Environmental, experiential and sensory embodied information • Embodied information from within • Embodied information from others • Embodied information recorded using technology
• Hektor's information behaviour model • Emergent theme of low information needs	• Search & retrieve • Browse • Monitor • Unfold • Exchange • Dress • Instruct • Publish
• Initially contemplation and positive mental wellbeing benefits • Then changed to NEF/NHS 5 ways to wellbeing	• Connect • Be active • Take notice • Learn • Give

Table 6. Summary of themes from thematic analysis of Phase 2 study (Munro)

The transcription process formed an early iteration of the thematic analysis, as signs of emergent themes present themselves during the process, suggested as one of the six stages of thematic analysis according to Braun & Clarke (2006).

Further iterations were then conducted on printed paper versions of the transcripts, initially highlighting relevant sections using colour codes related to broad macro themes from the research questions of embodied information, Hektor's information behaviour model (Hektor, 2001) and contemplation and positive mental wellbeing benefits. Annotations were made next to the highlighted sections of the macro theme, followed by a dash, or linked line, to what key word or instance of embodied information related to this macro theme. From this, further iterations concentrated on each of these macro themes in turn. An example of the thematic analysis used in this

Phase 2 study is provided in Appendix E. As the thematic analysis proceeded, the contemplation and positive mental wellbeing macro theme was changed to using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) as a macro theme to cover both of these areas. This was done simply by assigning the coded findings related to contemplation and positive mental wellbeing benefits to the take notice stage of the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), then coding the rest of the transcripts according to the other stages of the framework.

Embodied information was categorised into four sub-themes from handwritten notes made next to each highlighted section: environmental, experiential and sensory information, embodied information from within, embodied information from others and embodied information recorded using technology. Initially, relevant sections of the transcript were highlighted on paper copies according to whether they were representative of embodied information. From notes made next to these highlighted sections, the four sub-themes stated above were identified. A further iteration made a note of the key words or characteristics of embodied information within each of these sub themes, such as the different types of sensory information: visual, somatosensory, aural, olfactory and gustatory. These key words and characteristics were then extracted and collected under each of these sub themes in a paper-based code book, with two developing iterations of this process used to connect, organise and group information within these sub themes. From the final iteration of this thematic analysis process, the code books were used to begin the writing up process with initial drafts of analysis and discussion, which then formed the final findings in this thesis.

For Hektor's information behaviour model (Hektor, 2001), the eight detailed stages of the model were used as themes: search & retrieve, browse, monitor, unfold, exchange, dress, instruct and publish. The process for this stage of analysis was the same as for embodied information. Starting with highlighted sections on paper transcripts related to Hektor's information behaviour model (Hektor, 2001). From this, annotations were made of key words and characteristics of information in highlighted sections of interview transcripts related to Hektor's model (2001) and the eight information behaviours stated above. These were extracted and organised in a paper-based code book according to further sub themes of whether they occurred in

the planning stage of the activity or during the activity, with separate sub themes of whether information was published publicly or privately for the publish theme. A detailed visual example of the thematic analysis process related to Hektor's model (2001) is provided in Appendix E.

A key theme emerged inductively outside of the eight information behaviours of the model, that of low information needs. This was observed in participant's descriptions related to Hektor's model (2001), whereby there was discussion of not needing a great deal of information day to day, or that the information required had been easy to find. This finding, along with all the others identified in the thematic analysis of the interview data related to Hektor's information behaviour model, were written up as draft versions of findings and discussion, before being written up in their final form in this thesis.

Thematic analysis of the wellbeing aspects proceeded in much the same manner although went through some different iterations. Initially, the interview data was coded for the macro themes of contemplation and positive mental wellbeing. At the time of analysis there was a consideration to focus on this aspect of wellbeing solely. Further into the analysis and writing-up stages it was decided that using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) was a more useful way of demonstrating the wellbeing benefits in an academically rigorous manner. The thematic analysis was then adapted to using the NEF/NHS 5 ways to wellbeing as a macro code and the 5 ways within them as micro codes: connect, be active, take notice, learn and give. The data that had been coded for contemplation and positive mental wellbeing was re-analysed and re-coded according to these, primarily being used in the take notice stage. From this stage, similar steps were taken as for thematic analysis of embodied information and Hektor's information behaviour model, whereby initial analysis was conducted by highlighting according to the macro code on the same paper copy of the transcript. From this, annotations were made next to each highlighted section with an assignment to one of the 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), with a linked key word or instance next to the relevant stage. Again, these were extracted from the coding on the transcript into a code book and through further iterations were grouped and organised so that writing up of the analysis could begin according to these themes.

As described, once these code books were completed, they were then used to structure writing up of the analysis according the themes emerging from the interview data. Within this process, notes were also made on the transcript and then in the relevant sections of the code book where particular sections of the interview were suitable for direct quotation.

This whole process of reflexive thematic analysis began deductively according the macro themes for each research question, then developed into inductive thematic analysis as micro themes within each of the topics presented themselves. For example, thematic analysis according to Hektor's information behaviour model (2001) began deductively using the eight information behaviours presented in it, then developed inductively to identify the findings related to low information needs. Use of both deductive and inductive methods is one of the ways that Braun and Clarke describe as a fruitful way to conduct thematic analysis (2019). Using a combination of deductive and inductive thematic analysis is common (Byrne, 2022). For more detail of the thematic analysis adopted in this study, an excerpt of coded transcripts and subsequent code book entries is included in Appendix E at the end of this thesis.

From here, the thematic analysis of interview data related to embodied information is detailed in chapter 4. Analysis of the data in relation to Hektor's information behaviour model (Hektor, 2001) is contained in chapter 5. Finally, the analysis for the wellbeing benefits described by participants is analysed using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) in chapter 6. A holistic consideration of links between these chapters and comparison of analytic approaches is given in chapter 7 of this thesis.

4. Embodied information on the West Highland Way

The thematic analysis of the interview data collected in May 2022 focused on three key areas: embodied information from the activity of walking the WHW, how participants' information behaviour can be classified using Hektor's information behaviour model (Hektor, 2001) and what positive mental wellbeing benefits may result from doing the activity and how these can be classified using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011). These are directly linked to the research questions of this thesis and these three key areas also represent the macro themes used in the thematic analysis of the interview data. Findings and discussion are presented together, according to these three key areas in separate chapters in this corresponding order.

4.1 Embodied information

In considering embodied information, from the thematic analysis of the interview data, there were four emergent types of embodied information discussed by participants: environmental embodied information, embodied information from within, embodied information from others and embodied information recorded using technology. These four types are summed up and represented in Figure 9 below.

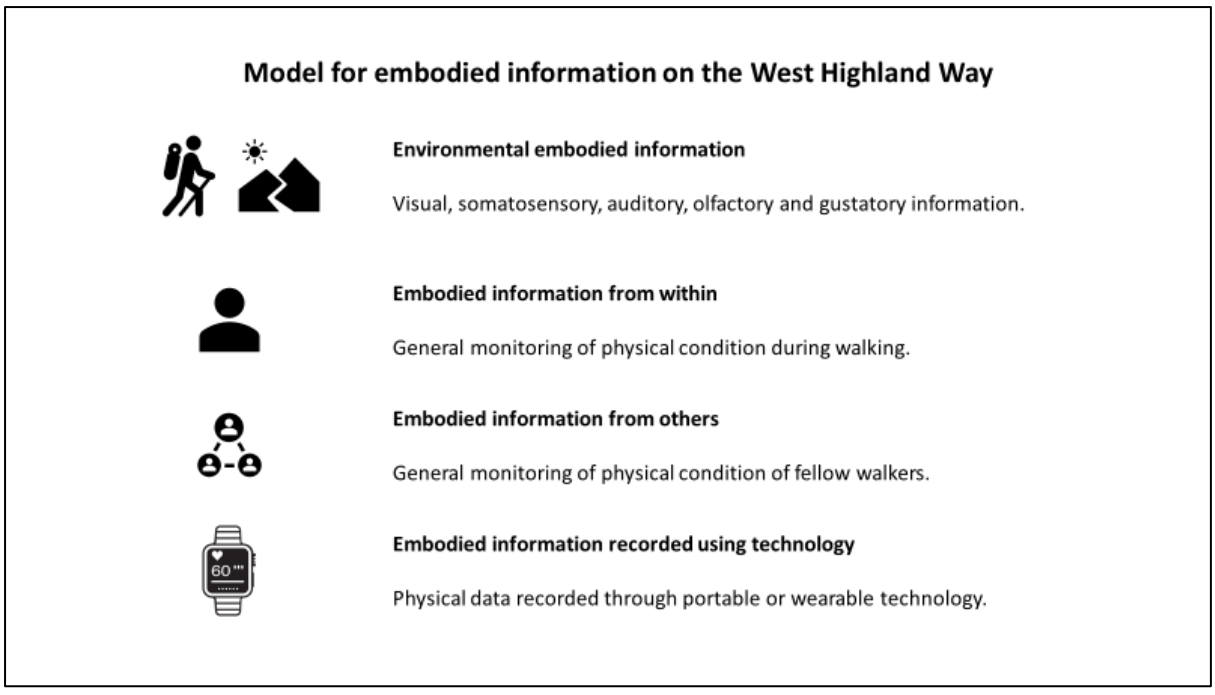

Figure 9. Model for embodied information on the West Highland Way (Munro)

4.2 Environmental embodied information

The most prevalent type of embodied information described by participants was what can be classified as experiential information from the surrounding environment. Indeed, for some experiencing this was a motivating factor in walking the WHW (P11, P12 and P19). Participants also described how this sensory information from the environment was good for mental wellbeing; *"I think being in nature really helps calm my mind"* (P3) and "*it's an important part of my mental health to walk a lot in general, but also just to be out here"* (P17). The types of environmental and experiential embodied information were classified during the thematic analysis according to types of sensory perception: visual, somatosensory, auditory, olfactory and gustatory.

4.2.1 Visual embodied information

The most commonly related form of environmental and experiential information was visual. The vast majority of participants talked about visual information related to the landscape, the scenery and natural sights being a memorable part of their journey. Natural features discussed included a number related to bodies of water: lochs, waterfalls, rivers and streams. In particular Loch Lomond (P4 & P21) and Loch Tulla (P12) were discussed as memorable visual experiences. A photo of Loch Lomond is shown below in Figure 10.

Figure 10. View of Loch Lomond from the West Highland Way (Munro)

The mountains and hills along the route were also commonly stated to be a memorable sight with specific examples given of Conic Hill (P6 & P7), Buachaille Etive Mòr (P12, P13 & P17), Devil's Staircase (P21) and Ben Nevis (P21). Further noted amongst participants was the moorland, with Rannoch Moor being given as a highlight (P7 & P17). A photograph of Buachaille Etive Mòr from the ethnographic record is displayed below in Figure 11.

Figure 11. View of Buachaille Etive Mòr from the West Highland Way (Munro)

Another commonly cited example of a memorable landscape feature was that of forests (P1, P6, P15, P17 & P18) and trees (P1, P4, P9 & P10). This links with a

variety of plant life being discussed by interviewees as a visual memory: ferns, gorse, moss, grass, wildflowers and bluebells. Visual memories of plant life were also linked to vivid recollections of colour amongst participants, especially greens and blues. The variety and depth of greens was described in the following terms: *"lush, like a salad"* (P6), *"the greens have been amazing, there have been some stellar green things"* (P17) and *"green velvet hills"* (P19). The blues present in the landscape came from the aforementioned bluebell flowers, typically in bloom around the time of the data gathering in May, and were remarked on by a number of participants (P10, P15 & P18), as well as being described in the following terms:

> *"You looked up into a field and there were just so many bluebells your eyes were almost just hurt by how bright it was"* (P3)
>
> *"That was gorgeous"* (P4)
>
> *"It just looked like it wasn't real. I was absolutely shocked"* (P3)
>
> *"From a distance it looked painted"* (P4)

Figure 12. Photograph of bluebells on the side of the West Highland Way (Munro)

An example of the bluebells that were in bloom shown above in Figure 12 was taken as part of the ethnographic record, two days before the interview with these participants was conducted. The photo was taken as the WHW passes alongside Loch Lomond.

Beyond the scenery of the landscape and the plant life, participants also recalled observing a mixture of wildlife: birds, deer, sheep, cows, frogs, slugs and beetles. Further to this, although not directly connected as in folklore, were memorable visual recollections of a rainbow (P12 & P13), *"we saw this huge rainbow… that is gonna stay with me forever"* (P13), and some gold (P5 & P6), "*she stepped across a nugget!"* (P5).

Taking in the visual information from the environment was also described as key to memory making (P1, P2, P10 & P11), and was described by participants in the following way, *"I want to place this picture in my mind of this landscape, and I want to make sure it's part of my memory"* (P1), and:

> *"I'm seeing this and I'm taking a photo but I hope that ten years from now I truly remember"* (P10)
>
> *"Yeah, because there's only so much you can remember through photos"* (P11)
>
> *"It's like a feeling and over time I know it's gonna fade a bit".* (P10)

As well as being memorable, this visual information from the environment was credited with helping to deal with pain associated with the exertion of hiking:

> *"The most memorable thing about this journey is how lovely it is and how easy the scenery makes it to walk. You don't feel the pain, well, you feel the pain… almost don't feel the pain anymore when you see this beautiful country around you."* (P12)

An example of part of the scenery on the route is shown over the page in Figure 13, this was taken as part of the ethnographic record of the Phase 2 study conducted in May 2022 and shows the view from near the top of the Devil's Staircase down towards the path as it winds towards Kinlochleven.

Figure 13. Photograph of the view from the top of the Devil's Staircase on the West Highland Way (Munro)

What these findings demonstrate is that visual information from the natural environment of the WHW was key to the experience, particularly what had made it memorable. This memory making helps situate the activity as a higher thing (Kari and Hartel, 2007), a lived experience set against everyday life. It also helps to illustrate a form of embodied information present in the activity, as posited to be likely observed in physical activities (Cox, Griffin and Hartel, 2017). While it can be viewed as similar to the visual information that runners interpret as they survey the path in front of them (Hockey, 2004;Hockey, 2006;Hockey, 2013;Hockey and Allen-Collinson, 2013;Gorichanaz, 2015), here it plays less of a functional role in terms of plotting where to place your feet and can be viewed as more pleasurable. This ties in with descriptions by participants in studies on Camino de Santiago and St. Olav's Way of memorable experiences resulting from their immersion in the natural environment as they walked these paths (Slavin, 2003;Jørgensen *et al.*, 2020;Innocenti, 2023). The description of how the visual information from the natural

environment eased pain while walking the WHW also ties in with Lueg's assertion that embodied cognition has a material effect on mood and the body (2014; 2015).

4.2.2 Somatosensory embodied information

Somatosensory information from the environment, that which relates to the perception of touch, such as temperature, body position and pain, was commonly described by participants in relation to memorable experience. Principally, this was the weather and how it was experienced physically. When the weather was good, it was *"fabulous"* (P21). More commonly, the types of memorable experience were related to bad weather and rain and were not always positive, usually described as having presented a significant challenge to the activity (P2, P7, P14, P21, P24 & P25). Although the rain could be perceived negatively, there was light hearted observation by some at the wide range of types of rain experienced on the WHW, from drizzle all the way through to torrential rain (P7 & P14). Further to this, it was suggested that, *"you can only get wet once"* (P16).

Beyond the weather, the going, that is the conditions underfoot, were frequently discussed by participants. Tough and challenging sections of the path were recalled, especially the section of path alongside Loch Lomond between Inversnaid and Inverarnan (P21 & P23). An example of this section of path is shown below in Figure 14, this was taken as part of the ethnographic record of the Phase 2 study in 2022.

Figure 14. Photograph of a section of the West Highland Way next to Loch Lomond (Munro)

The rocky nature of the way was also remarked upon as a challenge (P4 & P23). Wet feet over a number of days walking and camping were noted as an unpleasant somatosensory experience (P23 & P24), but an equally pleasant sensation of drying feet and boots at accommodation was also related. Other somatosensory information noted included the unpleasant sensation of being swarmed or bitten by midges (P2, P6 & P17).

There were positive comments about the quality of the path compared to other long-distance walking routes in the north of England (P14). Monitoring the going was also credited with being able to remain *"present"* (P5), a positive association with a relaxed state of mind. One participant also described a pleasant somatosensory sensation of walking through forests on the route: *"the really damp, drippy forests, I really liked them a lot"* (P6).

Somatosensory embodied information from the environment was also central to making the WHW a memorable experience, albeit it not always pleasurable. This is important to note as memorable does not always mean positive. The weather and conditions underfoot presented a challenge to participants at times, but this was balanced out with taking pride in overcoming difficulties, humour and a heightened appreciation of when conditions were favourable. This links with findings related to hikers on the Camino de Santiago and the St. Olav's Way that suggested aches and pains related to walking the path could negatively affect mood (Jørgensen *et al.*, 2020;Innocenti, 2023). This is also the flipside to Lueg's assertion that embodied information is central to how people feel emotionally and physically in response to an environment. (Lueg, 2014;Lueg, 2015). The findings on visual environmental information shown here suggest that the pleasure derived from other forms of sensory information can override physical discomfort from another form. Indeed, not all forms of somatosensory information from the environment were perceived negatively, some were attributed to positive emotions and calm mindsets, further placing the activity as a higher thing (Kari and Hartel, 2007) and that embodied information encountered in other long-distance walks was key to memory making (Slavin, 2003;Jørgensen *et al.*, 2020;Innocenti, 2023).

4.2.3 Auditory embodied information

Participants recalled a range of auditory information that was described as memorable or notable. Most commonly this related to wildlife heard along the route, with birds and their birdsong cited by many to be pleasurable, with particular bird noises identified as belonging to a cuckoo (P9, P15 & P22), a song thrush (P22) and woodpecker (P22). Other participants noted the animal noises of cows and sheep as they walked.

Another natural noise recalled pleasantly was the sound of nearby running water at night (P24). Rather than a specific sound, the quietness of the West Highland Way was described as memorable (P4 & P16). In particular this related to the "*absence of sound"* (P16), or a lack of urban noise, *"we live in central London, so like it's about as far from that as it's possible to get"* (P24).

Other memorable auditory information described by participants included the unpleasant sound of road traffic near the path (P2), but also the pleasant sound of the Scottish accent (P5) and the pubs along the route, specifically the sound of pints of cask beer being pulled (P2). Only one participant mentioned listening to music as they walked (P17). Finally, sound was linked with positive mental wellbeing during the walk, *"yeah, it's calming listening to the water, the trees, the birds"* (P9).

Auditory information was another form of environmental embodied information that was strongly associated with positive memories of walking the WHW. These memorable sounds help further situate the activity as a higher thing (Kari and Hartel, 2007). The natural sounds encountered along the route also tie in with the pleasure derived from interacting with the natural environment on a long-distance route (Innocenti, 2023), particularly the idea of "nature bathing" described on the St. Olav's Way (Jørgensen *et al.*, 2020).

4.2.4 Olfactory embodied information

A number of recollections were made by participants related to olfactory sensations as they walked the West Highland Way. This mainly included smells related to plant life: the smell of pine trees in forests (P10, P18 & P24), the coconut like smell of gorse bushes (P3) and the pungent smell of wild garlic (P3 & P23). For wildlife, the smell of wild goats was also recalled (P5 & P6). A non-naturally occurring smell

noted by interviewees was the strong smell of cooking oil encountered when walking near one of the pubs or restaurants on the way into a village (P18, P19 & P20), this was found to be slightly off-putting.

Olfactory information from the environment is another key area of memory making from walking the WHW. Participants were able to recall sections of their journey based on smells from trees and plants that they passed along the route. This demonstrates how multiple forms of sensory information from the environment are absorbed by hikers as they walk. This ties in with research on Camino de Santiago where embodied information was used to build a mental map of the route (Slavin, 2003). Creating memories of the journey based on sensory experiences also further situates the activity as a higher thing (Kari and Hartel, 2007).

4.2.5 Gustatory embodied information

There was also some discussion of gustatory sensations during participants' journeys. In general, food was mentioned as a highlight of their trip (P5 & P19), with haggis (P7) and Scottish breakfasts (P2 & P8) given as memorable examples. Enjoyment of food was also stated to be a benefit of the activity, *"it's something about hiking too, even like the normal food tastes better"* (P11). In terms of drink, beer was noted as a particularly pleasurable part of the experience (P2). A photograph of a pleasurable meal I had during the Phase 2 study is shown below in Figure 15, taken in Rowardennan after walking 27.5km in a day.

Figure 15. Photograph of a meal at the Clansman Bar, Rowardennan (Munro)

Gustatory information was a key part of the journey for some. There was evidence that the activity itself heightened the appreciation of food. This also demonstrates that all forms of sensory environmental information are involved in making memorable experiences occur along the WHW, showing that, in this activity, embodied information is central to making the journey a higher thing (Kari and Hartel, 2007).

4.3 Embodied information from within

Separate to the embodied information present in the sensory experience of walking the WHW was embodied information from within. This was most commonly described as a general monitoring of their physical condition as they walked. This involved checking on any injuries that may have occurred during the walk up to that point. Injuries the participants were monitoring included: hip (P5), knees (P18 & P25), back (P25) and, most commonly, feet and blisters in particular (P9, P12, P13, P16, P17 & P21). As well as checking on current injuries, a number of participants were also monitoring their body for any issues related to previous injuries. Prior injuries mentioned by participants were: cruciate ligament in the knee (P5), previous hiking injuries (P11), debilitating blisters on a previous attempt to walk the WHW (P17) and back and knee injuries (P25). Despite this, there was discussion that although they could be experiencing pain as they walked, they were still experiencing positive mental wellbeing benefits, exemplified as, *“my body’s in pain but my mind is clear”* (P4).

While walking the route, participants also described monitoring their body for signs of thirst and hunger. Staying hydrated was noted as key to staying healthy while walking (P6, P23 & P24). Two participants even noted that they would check the colour of their urine as they walked to gauge whether they were sufficiently hydrated (P23 & P24). Hunger and eating regularly were also noted as important to stamina while walking the way (P6, P17 & P23). Particular observations were made about the relationship between hunger and energy levels, with participants mindful that their ability to walk the required distances could be negatively impacted by not eating at the right time (P17 & P23). It was also noted that eating certain types of food resulted in significantly improved levels of energy while walking (P17 & P23). Further

to this, one participant stated that they would monitor if their fingers were swollen, if so, it may be a sign that they were low on electrolytes (P23).

Participants also discussed being aware of their fitness levels as they walked, these were typically broader and based on their own sense of their body, rather than the specific metrics of measuring fitness using technology. Participants were aware of their age (P2, P21 & P25), their weight (P2), the weight of their backpack (P12, P13, P17, P23 & P24), their heart rate (P6), their speed (P21), their pain levels as they walked (P10 & P25) and a general sense of a lack of fitness (P2, P6 & P20), although this was felt to be improving as the walk progressed.

Other instances of participants observing embodied information from within included checking on whether they needed to go to the toilet (P6 & P23). There are not a great deal of fixed toilet facilities between towns and villages on the route, so being aware of needing to go was related to finding an opportune time and place to go. Another example of embodied information from within was monitoring temperature during and after rainy weather conditions (P9), this was to ensure they were not too cold and at risk of falling unwell.

While the embodied information from within described here could be classified as relating to basic needs, there was discussion that by concentrating on these a simplification of life occurred that was relatively profound;

> *"I said, you know, if you can pee when you need to pee, drink when you need to drink and have a little snack when you need a snack, and you don't have an injury, you just feel like you have everything you need. You're fine, you know?"* (P6)

Embodied information from within was key to monitoring how walkers on the WHW were doing in relation to the physical challenge of the activity. This is important for the health and safety of walkers as they progress along the route, using this embodied information to determine their ability to complete their journey. Links between this and recent studies on long-distance hiking and walking pilgrimage demonstrate that monitoring physical condition is a key component of the activity (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022;Innocenti, 2023). There are clear links between this monitoring of embodied information from within while walking and that observed in the activity of running (Hockey, 2004;Hockey, 2006;Hockey,

2013;Hockey and Allen-Collinson, 2013;Gorichanaz, 2015). There is also some similarity with the use of embodied information by health professionals to assess physical condition (Lloyd, 2009;Lloyd, 2010;Bonner and Lloyd, 2011;Lloyd, 2014), although in this instance it is embodied information from within, as opposed to embodied information from others. Although embodied information from within during this activity sometimes involved pain or discomfort, concentrating on what their body was telling them allowed participants to remain present in the moment, which was described as having positive mental wellbeing benefits and helped to negate painful sensations. Observations of this also occurred in research on walking pilgrims on the Camino de Santiago (Innocenti, 2023). This links with the research of Christopher Lueg that embodied information can have an effect on how people feel and how their bodies respond (Lueg, 2014;Lueg, 2015). That focusing on embodied information from within can lead to mindful headspaces also helps to further position the activity as a *higher thing* (Kari and Hartel, 2007).

Embodied information from within is key to this particular physical activity, as observed among backpackers on a technical hiking challenge (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022) and with walking pilgrims (Jørgensen *et al.*, 2020;Innocenti, 2023), as well as in running (Hockey, 2004;Hockey, 2006;Hockey, 2013;Hockey and Allen-Collinson, 2013;Gorichanaz, 2015). Further studies in physical activities should seek to deepen understanding of the types of embodied information from within and how they are used by participants. Beyond physical activities, future research could benefit from understanding how people use embodied information from within when they are engaging with information services, so as to give a more holistic view of user's needs. Understanding where information services may create embodied information from within that leads to pain and discomfort may also help reduce barriers to information for those who need it.

4.4 Embodied information from others

Separate to the embodied information from within described by participants was embodied information from others. Predominantly this was observing the fitness and health of fellow walkers on the WHW. One of the most common themes to emerge was that participants noted the older age of some of the hikers and thought this to be a positive (P7, P12, P15, P17, P18 & P24), *"I've noticed that some of the older hikers*

are in extraordinary shape" (P5). Further than considering it a positive, a number of participants found it inspirational (P5, P7, P10, P11, P15 & P18). This was described in the following terms: *"it does inspire you"* (P6) *"I hope I'm doing that"* (P10) and *"if they can do it, then I can too, even though they may be fitter than me"* (P11). The speed of older hikers was also noted (P2, P6 & P12), *"they go fast!"* (P6).

The speed of other hikers was also commonly observed by interviewees, particularly different speeds to themselves and others (P4, P7, P24 & P25) and how often they were being overtaken (P2, P4, P6, P24 & P25). Being overtaken frequently could be perceived as a negative but was usually treated with humour, *"it's disgusting!"* (P2) and *"I've kept a tally…"* (P5). One participant, described being a bit wary of walking very quickly, concerned that they were not taking in all the environmental and experiential sensory information, *"I've seen many people who think they are just walking to finish the walk"* (P1).

Participants also described an awareness of the size and weight of fellow walkers, in some cases being impressed by the fitness levels of fellow walkers that they had perhaps presumed would not be fit based on their physical appearance (P12, P13, P14 & P24). Gender of fellow walkers was also noted amongst interviewees, with some describing groups of women hikers as a positive memory, this was linked with the age of fellow walkers, *"one thing I will say is just the number of groups of older ladies and I really love it"* (P10), and:

> *"I've been, as a woman, I've been really inspired by the women. There is groups of older women from probably early 60's to mid-70's that are, you know, girlfriends from grade school, who are now kind of on a whim, like let's do this and… I'm impressed"* (P6).

Amongst participants this embodied information from others would be interpreted comparatively with themselves, in relation to speed of walking (P12, P13 & P24), perceived fitness levels (P4, P12, P13, P14 & P20), injury (P16) and weight of bags carried (P12, P13 & P17). Although this embodied information from others was perceived in a comparative manner, it was not perceived competitively, *"not that it's a competition of course"* (P12). This comparative embodied information was also said to be *"non-judgy"* (P10) and *"I'm not judging"* (P16).

Beyond observations of fellow walkers' physicality, participants commonly had concern for fellow walkers' health and wellbeing. This was most clearly demonstrated in looking out for injuries in fellow walkers (P9, P15, P16, P22 & P25). The most common injury that participants were looking out for in others were foot related injuries, usually blisters (P16, P22 & P24), as well as concern for their brother's knee injury (P16). Offers of assistance were made to fellow hikers with injuries in the form of sharing blister treatments (P22). These injuries were a concern but also noted to not always affect fellow walkers negatively, *"they still seem to be happy about it, myself included, everyone's got loads of niggles, it's not as if they're down in the dumps"* (P25). However, the perceived bad mood of walkers based on their body language was noted when weather or underfoot conditions were challenging (P4).

Embodied information from others on the WHW typically involved assessing the physicality and performance of other walkers. The nature of the activity, a long-distance hike, meant that this was not related as being competitive. Participants often perceived the physical performance of others to be better than theirs in a self-deprecating manner. Many participants found the physicality and fitness of older walkers to be an inspiration. Further research looking at embodied information in physical activities should consider how this may differ in competitive sports, both individual and team based.

Observation of the physical condition of others also allowed for participants to notice if other walkers were injured and to offer them assistance. This ties in with how health professionals observe patients for condition based on embodied information (Lloyd, 2009;Lloyd, 2010;Bonner and Lloyd, 2011;Lloyd, 2014) but places it in a non-work situation. Further studies should consider how embodied information from others may function not just in serious leisure pursuits or healthcare environments, but in physical spaces where information services are provided. This should consider embodied information from others from both the user and provider perspective, so as to give a complete picture of how this may affect the provision of the information service.

4.5 Embodied information captured using technology

Another type of embodied information identified in the interview data was that of embodied information captured using technology while walking the WHW. This was data recorded through portable or wearable technology, such as smartphones and smart watches. The type of data logged related to fitness, health and performance. Fitness and health related data monitored by participants included: heart rate (P6, P13, P16 & P19), calories burnt (P13 & P14), sleep phases (P16) and oxygen saturation (P19). Performance related data recorded by participants covered: steps taken in a day (P10, P12, P13, P19 & P25), distance walked (P14, P17, P19 & P25), speed (P17) and ascent and descent (P12 & P13). One participant (P19) would consult their smart watch to see their fitness, health and performance data on a graph in real time.

Different types of devices used by participants to record embodied information were; Fitbit (P10), Apple Watch (P12 & P13), a non-specific smart watch (P19), a non-specific sports watch (P16) and a triathlon watch (P23). Applications used in conjunction with a smart device included Strava (P17 & P23) and AllTrails (P14). Some problems in using the technology while walking the WHW were noted: forgetting the charger for the device so being unable to use it for the whole journey, or being able to source a replacement (P12 & P13); and in forgetting to press stop at the end of the day's walking, thus altering the data (P14). Positives in using technology to record the journey were also noted, one participating simply stating that seeing the data made it *"fun"* (P10), and another *"we like data"* (P12). Another positive associated with technology was in family and friends being able to track the journey of participants (P17 & P23), a means of sharing their journey by proxy. This positive means of connecting with family was described as;

> *"So, my mom and both my sisters, they get emailed the link where I start out so you can follow along, and then they've been having conversations and sending me questions like 'Oh, how are these mountains that you're near?'"* (P23).

Another positive use of embodied information captured using technology was that some participants would incorporate this data into journals they were keeping of their journey (P18, P19, P20 & P23). These journals were being kept with the intention of

memory making and it was hoped that the data recorded from technology would reinforce memories, *"just as a memory tool for when we're back"* (P18).

Embodied information from technology on the WHW was not just functional, but also pleasurable and linked to memory making. The functional information to do with physical performance can be viewed as an extension of monitoring physical condition from within, using data from technology to add statistics to how the body is feeling from doing a physical activity. This ties in with the socio-technical form of storytelling and sharing of their journeys seen amongst walking pilgrims on the Camino de Santiago (Innocenti, 2023). Recording of embodied information using wearable tech was also central to the design and analysis of research on the information practices of hikers on a technical backpacking challenge in Scotland (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022). There is an element of crossover with runners monitoring their physical performance during their activity (Hockey, 2004;Hockey, 2006;Hockey, 2013;Hockey and Allen-Collinson, 2013;Gorichanaz, 2015), albeit using technology to formalise this information in to hard data rather than an interpretation of sensation. Moreover, embodied information from technology was used to enhance the experience of walking the WHW, making it more enjoyable for participants. Further to this, sharing of this embodied information from technology was used to meaningfully connect with family away from the walk. This provides deeper evidence of the activity being considered a higher thing (Kari and Hartel, 2007), a memorable experience set apart from everyday life. Embodied information from technology was also used by participants to accompany traditional memory making methods, such as journaling, which suggest it can be used to augment memory making using environmental embodied information from the journey. Evidence of this was also seen amongst walking pilgrims on the Camino de Santiago (Innocenti, 2023) and this represents a development of using both types of embodied information in creating a mental map of the route, as observed amongst walkers on the Camino de Santiago (Slavin, 2003).

Further research considering embodied information should consider other ways in which embodied information from technology is used. For example, in other physical activities with a competitive element, where this embodied information may be used for tactical and performance reasons. Research that looks at embodied information from users of information systems could also consider how to quantitatively measure

embodied information. This research demonstrates that qualitative data is a valid means of representing the depth and range of embodied information in an activity but quantitative data measuring physical responses would enrich understanding in this area.

Findings and discussion in this chapter were designed to provide a richly detailed account of embodied information reported by participants in this study. The next chapter will consider information behaviour more holistically by using Hektor's information behaviour model (Hektor, 2001) to classify all the information behaviour described by participants before and during their journey. Within the call for more widespread adoption of this model as a lens for analysis is to consider how usefully it can be used to classify embodied information in a serious leisure activity (Hartel, Cox and Griffin, 2016). Findings and discussion in the next chapter will situate the embodied information reported here within this model and assess its suitability for considering embodied information in other activities.

5. Hektor's information behaviour model and the West Highland Way

Following on from the findings and discussion of embodied information on the WHW, this chapter presents analysis and discussion of Hektor's information behaviour model (Hektor, 2001) and how it relates to the information behaviour of hikers on the WHW. Notably, there was an overall characterisation of walking the WHW as having relatively low information needs while walking the route. This observation is then followed by using the structure of the model and it's four information behaviours of seeking, gathering, communicating and giving, with particular focus on the eight information activities within those behaviours: search, browse, monitor, unfold, exchange, dress, instruct and publish. A table summarising the findings according to each information activity is set out below (Table 7).

Information activity	Summary of activity on WHW
Search & retrieve	• Before & during journey • Searching for information about the WHW online through official website, social media and tour company websites while planning and during the walk
Browse	• Before & during journey • Browsing guidebooks, other literature and materials from tour companies in the planning stage • Browsing same sources during the walk
Monitor	• Before & during journey • Checking weather updates before starting the walk • Monitoring embodied information, mainly from within, but also from others

	• Monitoring weather updates during journey
Unfold	• During journey • Experiential embodied information • Constantly unfolding sensory information as walk progresses including visual, somatosensory, auditory, olfactory and gustatory
Exchange	• Before & during journey • Exchange of interpersonal and informal information • Advice from acquaintances in planning stage • Swapping of experiences and information about WHW during the walk
Dress	• During the journey • Documenting journey using photos, videos and journaling
Instruct	• During the journey • Tour company and friend's itineraries
Publish	• During the journey • Sharing journey both publicly and privately • Publicly on social media • Privately with family and friends

Table 7. Summary of findings related to Hektor's information behaviour model (Munro)

Walking the WHW can be classed as a serious leisure activity, an NCA specifically (Davidson and Stebbins, 2011), where it represents the development of a pursuit for hikers who have done other long-distance walks, applying their experience of hiking in a new environment and deepening their knowledge of the activity. For those who are undertaking their first long-distance walk on the WHW, this represents a potential

gateway activity for it becoming a serious leisure pursuit by taking inspiration from walking the route to explore other long-distance walking routes and begin a career in this pursuit. For those who walk the WHW as onetime event and do not do any further forms of long-distance walking, the activity can also be considered project-based literature (Stebbins, 2005;Davidson and Stebbins, 2011), involving a similar level of information and commitment as those who are walking the route as a continuation, or commencement, of a serious leisure pursuit. This also demonstrates that the level of information and dedication of time and resources separates walking the WHW from casual leisure forms of walking, which do not require significant amounts of information or preparation to undertake. The appreciation and perceived benefits of the activity is similar for those developing and beginning long-distance walking as a serious leisure pursuit, as they are for those engaging in project-based leisure.

Within the definitions of serious leisure, as well as project-based leisure, particularly relating to hiking as an NCA (Davidson and Stebbins, 2011), it is relatively straightforward to link them to hikers on the WHW. This differs from some pursuits where there is a blurred line between it being professional or leisure, such as DJing (Munro, Ruthven and Innocenti, 2022). Therefore, this research does not provide any significant challenge to the definitions of serious leisure as they currently exist (Stebbins, 1982;Stebbins, 1992;Stebbins, 1996;Stebbins, 2004;Stebbins, 2005;Stebbins, 2007;Stebbins, 2009;Davidson and Stebbins, 2011), but does place them in a novel context.

Classification of hiking as a serious leisure activity and NCA has also been established in studies on the TGO and on Camino de Santiago (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022;Innocenti, 2023). Through the consideration of serious leisure comes the potential study of pleasurable or meaningful activities and experiences that can be called higher things (Kari and Hartel, 2007). Adoption of Hektor's information behaviour model (Hektor, 2001) in this chapter can also identify information activities that link to this concept related to memorable moments in people's lives.

Contained within the call to consider further use of Hektor's information behaviour model (Hartel, Cox and Griffin, 2016), there was a question posed as to the potential

suitability or not as to whether it was useful for capturing and classifying embodied information in an activity. Having provided a rich and detailed description of embodied information in the previous chapter, analysis and discussion in this chapter can assess the model's suitability in doing so.

The use of Hektor's information behaviour model (Hektor, 2001) in this research was designed to aid the classification of information behaviour in a manner which would make it comparable to other studies in the information behaviour field. This improved comparability between information behaviour studies, especially in serious leisure pursuits, is something that has been called for with the adoption of this model (Hartel, Cox and Griffin, 2016). Selection was also based on the question from the same paper as to whether Hektor's model was suitable for classifying embodied information present in serious leisure activities. Using this model also helps to build on the use of this model in studying the information behaviour of walking pilgrims on the Camino de Santiago (Innocenti, 2023).

In this study, the use of Hektor's model (Hektor, 2001) also allowed for the emergence of a key theme related to information behaviour, that of low information needs. Discussion of the findings are contained within each of the different sections in this chapter.

5.1 Low information needs on the WHW

Before grouping participants' information behaviour within each of these classifications, there is one overriding aspect which emerged from the analysis, that the activity of walking the WHW is characterised by low information needs, commonly highlighted by participants (P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P17, P21, P22, P23, P24 & P25).

Low information needs are defined here as occurring during an activity or experience where the information needed to take part is easily accessible and simple to comprehend. This runs counter to everyday life where work or stressful life events can create large volumes of information, which can be overwhelming and difficult to understand. Low information needs create the conditions where cognitive load is reduced and more pleasant thought processes, such as entering a flow state or being present in your surroundings, can occur during the activity. Low information needs do not occur where there is no information required, merely that the

information is readily available and easy to understand. Low information needs in an activity or experience can enhance a serious or project-based leisure pursuit, where information is key, and are not necessarily indicative of them being considered casual leisure due to a lack of information required.

On the WHW, this was a combination of: the ease of navigation on the route; being able to easily follow signage along the path; only requiring basic day-to-day general information about the route; as well as the relative ease of planning the journey through online resources, guidebooks and tour companies.

The most commonly described low information need was in terms of how well signposted the route was. For walkers, this vital information to complete the activity was easy to follow simply by being there and doing it and required little in the way of navigating via paper maps or navigational technology. In some of their own words, *"you don't need a map for walking the West Highland Way, it's very well signed and you have no chance to get lost"* (P2), *"I don't need a compass to navigate my way"* (P9), and *"it's a very straightforward walk in terms of signposting and all that, so it's not technical"* (P17). The ease of navigating the route due to the information from signposts was even given as motivating factor for doing the route (P9).

Most participants described just needing general information about the route and needing to book accommodation as their main information needs. One participant cited prior experience of the route as meaning they had needed very little information to plan their journey (P2) and other participants had felt able to plan their journey ad hoc as they went, feeling that they could book accommodation and find information as they went (P9, P12 & P13), *"there wasn't that much planning"* (P9). Another way in which the information needs of participants could be described as low was how some chose to use a tour company to organise their itineraries, meaning that beyond finding out general information about the route, they outsourced the need to search for accommodation (P3, P4, P18, P19, P20, P21 & P22). This ease of planning was described as: *"we found a company that actually is capable of portaging our stuff while we hike with our daypacks and that sounded fantastic, so that made it much easier to do"* (P3) and *"we left the job to them and it's been great"* (P19). This is not to say that there isn't a rich seam of information present within the journey, as shown in the findings on embodied information, but that participants felt relaxed about their

information needs, primarily navigation, and were able to find much of the information they needed relatively easily through online resources, literature, tour company information and interpersonal sources.

In the field of information science, the key paper relating to information needs is written by Reijo Savolainen (2012), which situates information needs as a motivator for approaching tasks. From this, consideration of information needs has primarily focused on work related or more functional activities (Sigaard and Skov, 2015;Maungwa and Fourie, 2018;Savolainen, 2018). The concept of low information needs has appeared in information science studies but only in work or formal contexts: diabetes self-management (Jennings *et al.*, 2009), public libraries in Africa (de Jager, 2002), the information environment of women in Nigeria's public service (Mabawonku, 2006) and the effect of electronic word of mouth communication on purchase intention (Albayrak and Ceylan, 2021).

The findings amongst hikers on the WHW situates low information needs in a new area, a serious leisure activity that does not have complex information needs to participate in and that the information required is readily available and easy to understand. Although acquiring new information is a key component of serious or project-based leisure pursuits (Stebbins, 2005;Davidson and Stebbins, 2011), low information needs on the WHW does not contradict defining it as either of those. It is not that there is no information required, simply that the information is easily accessible when required and straightforward to comprehend.

Low information needs represent a break from everyday information environments, such as work or challenging tasks, where information needs are more pressing. Even though the WHW is an environment rich in environmental embodied information, the functional information required to complete the journey is simple and easy to follow. This shows that low information needs can occur in information rich fields.

This has some similarities with research amongst walking pilgrims on the Camino de Santiago (Innocenti, 2023), which is a well waymarked route and is similarly well catered for in terms of infrastructure for food and accommodation for walkers. Useful, easy to follow signage was also identified as key in a report considering the successes of the St. Olav's Way in Norway (Visit England, 2016). Running counter to

this is research on backpackers on the technical TGO hiking challenge in Scotland (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022), which involves hikers embarking on a two-week journey across the Scottish Highlands. In this activity, hikers are navigating their own routes to traverse the country and require a great deal of functional information from maps and digital devices to be able to do so, there were no signposts on this challenge.

5.2 Search & retrieve

In this component of Hektor's information behaviour model (Hektor, 2001), findings can be split between searching and retrieving before the event in the planning stages and then during the activity, with most occurring in the planning stage. Most commonly this was using the internet to search for information about the WHW, with some specifically mentioning Google (P10, P11, P21, P22, P23, P24 & P25). The most commonly referenced website was the official website of the West Highland Way (P3, P4, P7, P8*, P9, P12, P13, P14, P15 & P16), "from the website we planned it out"* (P16) and *"yeah, the West Highland Way website a lot, it's quite useful"* (P17). After this, tour company websites were also used by participants to look for proposed itineraries and places to stay along the route, mostly this was with the intention of booking their trip with them (P3, P4, P18, P19, P20, P21, P22), although for some this was just to use them as a source of information (P14, P15 & P25), *"we actually planned it through Travel Lite, the accommodation and that"* (P25). The website booking.com was also mentioned as a source for planning accommodation (P7, P8 & P16). Social media was also used in the planning stages to find out information about the route, with participants using Facebook and Instagram (P5, P6, P10, P11 P12 & P13). Use of social media was described as: *"Facebook was a big source of learning for me"* (P6) and;

> *"Social media too because we had the Facebook page and I was checking hashtags on Instagram and seeing photos and… actually the Facebook page was helpful because you're already kind of getting a sense of the people that were going to be out there, sharing information and helping each other and it just kind made it feel at ease I think"* (P10)

Other internet resources searched for during planning included YouTube (P17), Google Maps (P7 & P8) and blogs (P9).

In terms of searching and retrieving for information during the activity, this involved looking for accommodation amongst those who were planning their journey as they went (P9, P12 & P13), campsite facilities such as drying rooms (P23 & P24), gluten free food availability (P23 & P24) and where to source replacements chargers for devices (P12, P13 & P25).

Participants' searching and retrieving was found to take place in two distinct stages, before the journey and during the journey. In planning, participants often went directly to the official WHW website for information about the route. This ties in with the type of information and means for sourcing it discussed among walking pilgrims on the Camino de Santiago (Innocenti, 2023). A report on the St. Olav's Way walking pilgrimage route in Norway noted that a useful website was important to the successful management of a long-distance hiking route (Visit England, 2016). This also ties in with a Scottish Natural Heritage report on long-distance walking, which found that walkers wanted readily available information about the path (Scottish Natural Heritage, 2010). While analysis of runners' information behaviour using Hektor as a framework (Hartel, Cox and Griffin, 2016) showed that they would be looking for information around training, diet, equipment and injuries, hikers on the WHW were looking for information about the route itself, possible itineraries and accommodation. There was some crossover with runners in searching for available food options, some with a view to meeting dietary requirements.

This study contains findings related to participants' experiences before and during their journey, while the study of walking pilgrims on Camino de Santiago (Innocenti, 2023) also contained findings related to how they would share information after their journey. This included the sharing of their journey on social media channels, YouTube and through blogs, allowing for their experiences to help inform future pilgrims. While beyond the scope of this study in terms of data collected, it can be taken that if people's WHW experiences are shared through similar channels, they will influence and inform future hikers on the route, thus creating an information cycle that is constantly being updated. This can be useful at a macro level to do with issues to do with planning an itinerary or selection and packing of appropriate equipment, but also at a micro information level where if a section of path is damaged and a diversion in place, this can be relayed to hikers who are a few days behind people who are currently walking the route. From this, it is possible to

suggest that searching & retrieving for this activity is about finding the most up to date, relevant information.

5.3 Browse

Browsing for information on the WHW also took place in both the planning stages and during the journey. In the planning stages browsing typically took place in guidebooks on the WHW (P2, P5, P6, P7, P8, P10, P11, P14, P15, P17, P18, P19, P20, P34 & P24), with the Loram and Newton book (Loram and Newton, 2019) and the Cicerone guidebook (Marsh, 2022) specifically mentioned. Indeed, for some interviewees browsing in guidebooks was more important to their planning than searching and retrieving information on the internet (P5, P6, P7 & P8). This was elaborated on in the following ways: *"I looked more at books"* (P6), *"the main stuff was the guidebook"* (P7), *"we bought a guidebook and that constituted a lot of the planning"* (P11) and *"the book, I have to say that's what we've mainly used as a guide"* (P14). Some participants also browsed literature to do with the history and culture of Scotland's Highlands more broadly (P1, P5 & P6). Those who had booked with a tour company would browse information materials sent to them as part of their planning process, *"I mean, we've got a lot of literature from them, guidebooks and stuff, so that's been very helpful"* (P19). Paper maps of the route (P12, P13, P17 & P25) were also used to browse the route before and during the journey: *"I'll review the map the night before, usually in terms of what I'm doing the next day"* (P17) and

> *"Well I use the map, just look at the roads, which way it is, look at the mountains and stuff like that, where we are. That kind of information. The heights and the lows"* (P12)

As well as maps, a DVD about the route (P21 & P22) was also consulted for information before walking the WHW.

During the journey, guidebooks were also browsed for information about the next day's walking and facilities at stops along the route (P10 & P11). Paper maps were also browsed, typically the night before the next stage, for information about distance, ascent and descent (P12, P13 & P16). Some also browsed the itinerary sent to them by their tour company (P21 & P22).

As with searching and retrieving, browsing took place before and during the journey. Most browsing took place in guidebooks about the WHW, both in the planning stage and while walking the route. This is broadly consistent with runners' information behaviour in seeking to consult with literature on the topic (Hartel, Cox and Griffin, 2016), in this case specific information about the route. There is also reported evidence of hikers on the Camino de Santiago browsing printed materials for information about the route (Innocenti, 2023). A slight divergence in classification of this analysis was that evidence of looking at online material was classified as searching and retrieving, while consulting printed materials was considered browsing, whereas the study on Camino included online sources in browsing. In this study this was justified by considering online information seeking to have contained an active element of searching and retrieving specific information about the route, while browsing in printed materials was relatively passive but focused on a small selection of sources like books or tour company information. Future studies using Hektor's information behaviour model (Hektor, 2001) will have to compare and contrast how they classify certain information behaviours and activities.

As with searching and retrieving, these findings are consistent with recommendations in a Scottish Natural Heritage report on promoting long-distance walking routes in Scotland (Scottish Natural Heritage, 2010), as well as a Visit England report on the St. Olav's Way (Visit England, 2016), which identified the types of information walkers on the route required.

There was also evidence of participants browsing literature to learn about the cultural heritage of the WHW and Scotland more broadly, tying in with concept of considering the WHW as a cultural heritage experience (Falk, 2006;Falk, 2013) and in classifying it as a cultural heritage route (UNESCO, 1994).

In comparison to the information activity of searching & retrieving, this shows that the information behaviour in the browsing stage for walking the WHW was perhaps more about gaining a broader understanding of the route and the best way to approach it, rather than very granular information about individual accommodation locations or specific tour companies.

5.4 Monitor

There was only one described monitoring of information before the journey on the WHW, this was monitoring the weather in locations along the route before departing (P23 & P24). All other forms of monitoring occurred during the activity.

A form of monitoring described by every single participant was monitoring of embodied information from within, this was as set out in the section on embodied information: general monitoring of physical condition, monitoring for injuries occurring, checking on prior injuries, hydration, hunger, temperature and general fitness levels. General monitoring of physical condition would involve checking for pain levels, "*just like checking in on soreness"* (P10). Another common form of monitoring physical condition was checking on feet, *"yeah, mostly my feet"* (P17) and *"yeah, I mean, obviously the main thing is feet"* (P21). Monitoring of physical condition between a dyad of a married couple was described as, *"yeah, we check in with each other pretty frequently"* (P3). Participants who were monitoring for injuries talked of this as: *"yeah, I've had kind of like injuries hiking in the past, so definitely monitoring…"* (P11) and *"I've got a bad back, so I focus on my posture and try to get that better as I'm walking"* (P25). Also monitored by all participants was embodied information from others, typified as the speed, age, fitness and observing of, and concern for, injuries of fellow walkers.

Participants also described monitoring technology for embodied information as they walked (P10, P11, P12, P13, P16, P17, P18, P19, P20, P23 & P 24). Examples from participants' descriptions included: *"with my sports watch I follow my heartbeat"* (P16), *"yeah, we keep track of how many steps we do on each day, how much mileage we've done"* (P25) and *"I have oxygen saturation, heart rates and um kilometres. I've got it on a graph on my watch."* (P19).

Closely linked to embodied information, in terms of how the environment was experienced, was participants regularly monitoring for weather updates, typically on applications on their smart phones (P7, P8, P10, P11, P14, P15, P16, P17, P21, P22, P23 & P24). Beyond the weather, participants also regularly checked some kind of navigational or map application using GPS on their phones to check their position on the route, distance still to travel and the ascent and descent on the rest of a day's walking (P3, P4, P7, P8, P12, P13, P16, P18, P19, P20, P21, P22 & P25).

One participant (P17) would regularly check a paper map as they walked and, as discussed at the start of this section, participants would regularly monitor for signposts to make sure they were on the right path. Interviewees also mentioned monitoring information on their smart phones as they walked for facilities; places to eat (P5, P6, P7, P8, P9, P10, P11, P14, P15 & P16), toilets (P5, P6, P7 & P8), drinking water (P10 & P11) and pubs (P25).

Monitoring, as most typically described in Hektor (2001), on the WHW most commonly took the form of keeping an eye on weather updates, this information was sought during the journey, usually in the evening ahead of a day's walk, in the morning or sometimes as people walked. This is similar to the type of information required by hikers on the more technically challenging TGO in Scotland (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022), due to the remote nature of that journey, this was even more of a key concern. This can also be viewed as similar to the types of monitoring that runners did (Hartel, Cox and Griffin, 2016), in order to stay as informed as possible about the weather conditions.

Where there is a development in what can be classified in monitoring came from participants' descriptions of monitoring their own bodies, as well as the bodies of fellow walkers, for embodied information. This was done to assess their physical condition to look out for any possible injuries or signs of fatigue or dehydration. There was also a sense of looking out for others' physical condition in case any assistance had to be offered. Instances of this are present in the reporting of walking pilgrims on the Camino de Santiago (Innocenti, 2023). This is consistent with runners assessing embodied information from within to monitor their performance levels (Gorichanaz, 2015) and health workers monitoring the embodied information of others (Lloyd, 2009;Lloyd, 2010;Bonner and Lloyd, 2011;Lloyd, 2014). A study on DJs also demonstrated that they monitor embodied information from the crowd in front of them (Munro, Ruthven and Innocenti, 2023), the ebb and flow of people on a dancefloor in particular, as well as being aware of their own embodied reactions as a performance progressed.

Monitor was a useful means with which to classify certain types of embodied information, specifically embodied information from within, embodied information from others and embodied information from technology. This suggests that Hektor's

information behaviour model (Hektor, 2001) can be appropriately utilised for the consideration of embodied information in some activities, in this case physical activities, but also for creative pursuits (Munro, Ruthven and Innocenti, 2023).

5.5 Unfold

For participants, information that unfolded during their journey could all be classified as the environmental, experiential and sensory embodied information present in the activity and detailed in the previous chapter. This principally includes the visual and somatosensory embodied information which unfolded with every step along the route, the constant assessment of the state of the path immediately in front and the conditions underfoot. This was described by one participant as, "*well and you do have to stay in the moment or you would fall down, because there's rocks in front of you and you know…"* (P6). Auditory, olfactory and gustatory embodied information were mentioned more sporadically.

The distinction between embodied information that is monitored and that which unfolds is not clear cut, in this instance the way in which embodied information was described by participants was vital. With embodied information from within, embodied information from others and embodied information from technology, participants did not describe constantly checking it, even though it could be argued that each body is constantly assessing sensory information from within, participants did not describe being cognizant of it all times. However, the description of constantly assessing the going suggests that the environmental embodied information, as experienced by the participants, was constantly unfolding as they walked with every step. This suggests that the unfold stage can happen literally as information emerges as an activity is undertaken, but can also refer more broadly to an overall experience unfolding.

The thematic analysis of the interview data shows that the unfold stage of information behaviour was an appropriate way to classify another form of embodied information, environmental embodied information. This is sensory information from the environment around the hikers as they walk along the WHW. Evidence of hikers absorbing this experiential embodied information constantly as they walked was present amongst walkers on the Camino de Santiago pilgrimage route (Slavin, 2003;Innocenti, 2023) and the St. Olav's Way (Jørgensen *et al.*, 2020). This also

links with runners assessing their surroundings as they pass through them (Hockey, 2006). Experiencing the sensory information from the environment was described in the previous chapter as having been particularly meaningful and memorable to participants, suggesting that this information activity helped to make the experience a higher thing (Kari and Hartel, 2007).

Unfolding information can be considered a useful means of classifying embodied information present in a physical exercise activity, this may well be extended to other activities where constant physical movement or actions can be observed. The concept of constantly assessing embodied information as an activity proceeded was also present with DJ's observing their audiences (Munro, Ruthven and Innocenti, 2023). While some embodied information was monitored for, how often people were leaving the dancefloor to go for a drink or the make-up of the crowd for example, they were also constantly scanning the crowd for micro reactions to the music being played during a performance. This dynamic unfolding of information from the crowd, in the form of embodied reactions, informed decision making for the DJ. This distinction between embodied information that is monitored and that which unfolds would also potentially be of benefit to comparing future studies considering embodied information from an information behaviour perspective and using Hektor's information behaviour model (Hektor, 2001) as a frame for analysis.

5.6 Exchange

For information behaviour that falls under the exchange category, this again fell into before the activity in the planning stage and then during the activity as well. Further to this distinction, some of the information behaviour doesn't strictly meet the definition set out in Hektor's behaviour model (Hektor, 2001) of a direct exchange of information, instead what occurs in some instances in this study is an interpersonal exchange between two parties where information is given from one to the other in an informal social setting.

Typically, this took place in the planning stages of the activity where family (P3, P4 & P16), friends (P3, P4, P18, P19 & P20) and colleagues (P1, P12 & P13) with previous experience of the WHW would offer general advice on walking the route, as well as sharing tips on places to stay, itineraries and specific tour companies to use. Another interpersonal source of information about the route was fellow walkers on

other long-distance walking routes (P14 & P15), hearing about others' experience on the WHW was key to their motivation in doing it.

During the journey the most common exchange of information between walkers was to share their experiences of their journeys to date (P2, P3, P4, P5, P6, P7, P8, P9, P12, P13, P14, P15, P16, P21, P22, P23, P24 & P25). This was typically described as simply: *"How's your day been? How's your journey gone?"* (P15). There was also a general swapping of information about the walkers, often where they were from (P5, P6, P18, P19, P20 & P25). This was noted to be a nice type of interaction to have and was not too focused on details of your life away from the journey, *"not a lot of talk about what you do"* (P6). These interpersonal exchanges of experiences on the journey were considered by participants to be a highlight of the journey: *"It's fun to see like friendly faces, we all share it like a big family, we are all sharing the same experience"* (P8) and *"a community on the road, that's really fun, it's a good experience"* (P12). There was also interpersonal sharing of practical information about the journey as participants walked. This social sharing of information about the route was summed up in the following way:

> *"Most of the information that we need we get from people like you. We ask you a couple of things and people that pass by. People just randomly talk to us and tell us a bit about the weather and stuff like that."* (P12).

Typically, this was advice on accommodation, weather and places to eat (P9, P12, P13, P18, P19 & P20).

There was evidence of a social exchange of information before walking the WHW, as well as during the course of the activity. Information was shared amongst family and friends who had experience of the WHW with participants while they were planning their journey. There was also a sharing of information between hikers as they walked the route, this would encompass general information about their lives away from the activity, as well as the swapping of practical information about the route relating to accommodation or places to eat. Findings from the study of walking pilgrims on the Camino de Santiago suggest similar information behaviours (Innocenti, 2023). This is also consistent with runners swapping information about the activity in situ (Hartel, Cox and Griffin, 2016). The sharing of experiences along the route was also described by participants to be a pleasurable part of the journey, as on a walking

pilgrimage (Jørgensen *et al.*, 2020;Innocenti, 2023). This helps to situate the activity further as a higher thing (Kari and Hartel, 2007) and illustrates how the social sharing of information that could be considered slightly more perfunctory in the search & retrieve and browse stages, is elevated to a higher thing through human interaction. Thus, future studies of serious leisure activities that adopt Hektor's information behaviour model (Hektor, 2001) as a frame for analysis should consider this pleasurable side of social information exchange. Studies of physical activities, but also creative pursuits may be fertile grounds for this type of informal, social exchanging of information.

The distinction in this section between a formal exchange of information between two parties and an informal social interaction where information is imparted is important and should be considered in future information behaviour studies where there is evidence of social sharing of information that is informal. Information can be given as part of a social exchange but may be one-sided if one person has experience of an activity that the other does not.

5.7 Dress

Dressing information amongst participants occurred only during the journey, not prior to it. All participants described using mainly photos, *"lots of photographs"* (P21), as well as some videos to document their journey, typically using their smart phone to do so.

Some participants were also journaling their journey as a means for memory making so that they could remember their journey in the future (P5, P6, P16, P18, P19. P20, P21, P22, P23 & P24). Interviewees described their journaling practices in the following ways*: "small notes on a notepad on my phone, but just to remember that on day one we saw this and on day two we had a crazy guy with a bike"* (P16), *"we've been keeping a journal, at a certain time we get together and talk about the day"* (P18) and:

> *"I've been journaling, which I never do ever. Yeah, I'm pretty happy I did. I mean, recording things like what meal I had that day, like what dried meal and what rating it was out of ten, what the weather was like, some stats about how long it took that day, how far we went, where we camped. Just things that are*

not necessarily like just what we did today but just like some little stats that would remind me of…" (P23).

One other participant (P25) was making notes on a paper map as an alternative to journaling.

Thematic analysis of the Phase 2 study data showed that there was evidence of walkers on the WHW dressing information about their journey by recording aspects of the route as they walked. This typically took the form of taking photos and videos of the landscape as they passed through it. Strong evidence of this being a method for documenting their journey was present among walkers on the Camino de Santiago (Innocenti, 2023). This crosses over with evidence of runners recording their journey through similar methods (Hartel, Cox and Griffin, 2016). There was also evidence of participants using journaling to record their journeys, again something that was commonly reported among hikers on the Camino de Santiago (Innocenti, 2023), where the adoption of digital and analogue methods of journaling were reported. These methods of journaling their trip on the WHW was described as a means of memory making, using recollections of their day and sometimes combined with embodied information recorded using technology to build a picture of what each day had been like. This helps to further demonstrate the activity as being a higher thing, a memorable experience that people want to create vivid memories of (Kari and Hartel, 2007). Future studies on information behaviour in serious leisure activities that use Hektor's information behaviour model (Hektor, 2001), or indeed another lens for analysis, may well fruitfully find evidence of how participants dress their activity by documenting it.

5.8 Instruct

There were only two observed instances of information being instructed during the journey from the interviews. The first was participants following instructions from their tour company about what itinerary they were following and where they were staying (P3, P4, P18, P19, P20, P21 & P22). The other was following a specific itinerary provided by friends who knew the route (P7 & P8), *"actually my friend make me a kind of plan saying day one, you can do that"* (P7).

This was in part due to the low information needs described by the participants, as navigation was relatively straightforward there was little need for instructions from

others. Information issued as instructions may be found more in physical activities that require some form of formal training, as opposed to this form of long-distance walking.

There was limited evidence of instruction on the WHW, partly due to what were described as low information needs while walking the route in terms of ease of navigation. Where there was instruction was from planned itineraries sent to participants who had booked their journey through a tour company, as well as one participant who had had a friend provide them with a specific itinerary. Due to the nature of walking being a relatively intuitive activity (Davidson and Stebbins, 2011), there was little need for the types of instruction associated with running, where techniques, and how best to apply them, were discussed. Evidence of this stage of Hektor's information behaviour model (Hektor, 2001) may be more fruitfully explored in other more technical activities, both physical and creative.

5.9 Publish

Information that was published by participants all occurred during the journey, with one exception where a participant was proposing to write a book about the WHW at a later date (P2). The forms of publishing were divided into public and private, some was in public online spaces like social media, while for others they were shared in limited access online spaces, typically with family and friends. For those that shared information publicly this took the form of sharing photos and videos using social media, with Facebook (P2 & P20) and Instagram (P9, P10, P11, P12, P13, P14, P16 & P17) mentioned by participants. One participant described sharing their journey on Instagram in the following way, *"we take a lot of photos, actually I make a daily Instagram post"* (P7). For most these were personal profiles, but for one, this was also a function of running a tour business based in Germany;

> *"I have a lot of followers on Facebook and I shared with a lot of people and I will hope that they would get a taste of the West Highland Way and come with me next time to share that unbelievable thing."* (P2)

One participant made a point of expressing that they were deliberately not sharing their journey on a public platform, *"so I'm anti-social media, I have a group chat to my immediate family and my husband and close friends individually"* (P19).

In terms of publishing information about their journey privately amongst family and friends, this was something that every participant described doing and involved sharing photos, videos and details of their journey. Typically, this occurred through WhatsApp and other text messaging services (P5, P6, P7, P8, P12, P13, P14, P15, P16, P18, P19, P20, P23 & P24), as described in the following ways; *"Yeah, I've texted a number of my buddies back home"* (P5), "*my sister and my girlfriends, I've sent them messages everyday with pictures"* (P6), *"WhatsApp with my family"* (P7), "*we've got a ward WhatsApp group, a friends WhatsApp group and they are great to share information"* (P14), *"WhatsApp, pictures to my wife and family at home"* (P16) and *"I've been texting my family everyday"* (P23). A private channel on Discord (P3 & P4) and Google Photos (P9) were two other applications mentioned by participants for sharing their journey with family and friends. There was also discussion that this form of sharing information was not only a nice way to share their journey with loved ones but doubled as an effective means of demonstrating that they were safe and well (P7, P8, P17, P23 & P24). This was described by participants as; *"so they know what I do and that I'm still alive"* (P1) and *"yeah, we're still alive"* (P8). Beyond this, some participants shared their location and performance data using the Strava application (P17 & P23), although they all described how they would limit who could see this information to family and close friends. One participant described how their family could track their progress using this app;

> *"So, Strava has been good because I know my parents follow me on Strava, so they kind of follow along on that."* (P17)

This was noted as a memorable part of the journey for one (P23), as their family were tracking their progress in real time and able to ask them questions about how the landscape they were passing through looked.

Evidence of hikers on the WHW publishing information typically took the form of sharing their journey via photos and videos, both privately with family and friends, and more widely via social media. Walking pilgrims on the Camino de Santiago also widely reported this as their means of sharing their journey (Innocenti, 2023). In both cases, this can be considered a social form of narrating journeys. This also ties in with evidence of how runners publish information related to their activity (Hartel, Cox and Griffin, 2016). This social form of sharing journeys was an important means of

connection with family and friends for walkers away from the route, helping to further situate it as a higher thing (Kari and Hartel, 2007), an experience that is meaningful enough to participants to want to share with people, and that has meaning added to it by doing so. Again, this shows the link between how the more functional information activities of searching & retrieving and browsing for information about walking the route can be lifted to a higher thing when people record their journeys with others, creating a virtuous cycle where people's meaningful individual experiences contribute to the collective knowledge of how to walk the route.

This distinction in whether information is published in a public or private domain, formally or informally, is an important point for future use of Hektor's information behaviour model (Hektor, 2001). The term publish could be softened to *share* for information behaviour studies where the information is less formal. Future studies on serious leisure activities using Hektor's information behaviour model should consider this when classifying how people share their experiences.

Having detailed the embodied information described by participants in the previous chapter, this chapter has set out to provide a more holistic view of the information behaviour of hikers on the WHW by using Hektor's information behaviour model (Hektor, 2001) to classify their information activities before and during the activity. This has been useful on a number of levels: it has shown the functional types of information required by walkers to walk the route; demonstrated that some forms of embodied information can be classified using components of the model; and shown that elements of these information activities can be attributed to higher things, suggesting that the experience of walking the route could represent a meaningful and memorable journey.

Emerging through the inductive analysis of the interview data in relation to Hektor's information behaviour model (Hektor, 2001), was the finding of low information needs on the WHW. This is a novel area for low information needs to be applied to, a serious leisure pursuit that relates to an experience set apart from everyday life, where the simplicity of the information required to engage in the activity led to positive mental wellbeing benefits and offered a form of information holiday from high information environments like work. This can be a perceived criticism of the model, as one of the key findings emerged outside of the classifications contained within it.

Therefore, further use of Hektor's model (2001), should consider that key discoveries may arise outside of its functionality, even though it is being used as a framework for analysis.

The holistic view that the model provides is one of its strengths, as is posited by Hartel, Cox and Griffin (2016), this can aid comparability between information behaviour studies, helping to generate a connected understanding of serious leisure activities through this lens. This would particularly benefit future information behaviour studies looking at a novel activity where there has been no previous investigation. In previous studies on DJing I have worked on (Munro, Ruthven and Innocenti, 2022;Munro, Ruthven and Innocenti, 2023), I can see how use of the model would have been beneficial in providing an easily comparable overview of information behaviour that could inform other studies in musical or other creative pursuits.

However, this strength can also be a weakness where a certain concept or theme is being explored in a research project. In this project, the focus on exploring embodied information required its own chapter to adequately give the prominence to the detail and discussion of what was found in the study. If all the embodied information data had been contained within the analysis of Hektor's information behaviour model (Hektor, 2001), this would have led to key discoveries being somewhat buried in there and presented on the same level as the more functional aspects of the activity. Therefore, future use of Hektor's information behaviour model may be best applied to novel fields, or in conjunction with more detailed analysis and discussion of a key concept or theme that is being explored in a research project. Another possible solution to this problem would be to create new definitions of embodied information within the model, as suggested in the original call to adopt it (Hartel, Cox and Griffin, 2016). However, as demonstrated in the previous chapter, fully studying embodied information may be best served by creating models directly related to this concept, rather than by incorporating it into broader information behaviour models.

A further weakness of Hektor's model is that, in this study, the eight specific information behaviours on the outside of the model diagram: search & retrieve; browse; monitor; unfold; exchange; dress; instruct and publish, were much more useful categories for thematic analysis than the more general four information

behaviours in the centre of the model diagram: giving, seeking, communicating and gathering. The more general ones were so broad and covered multiple specific information behaviours, so as to make them too loose for detailing findings related to information behaviour described by participants. Therefore, a large chunk of the model was redundant in this instance.

The next chapter looks at how the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) can be used to frame, analyse and discuss the possible wellbeing benefits present in the activity of walking the WHW, as well as look for links to embodied information and low information needs. Analysis and discussion in this chapter has shown that low information needs are a key component of information behaviour on the WHW, as well as touched on how aspects of information activities related to embodied information, cultural heritage experiences and social connections along and away from the route help to situate the journey as a site of meaningful experience that can be considered a higher thing (Kari and Hartel, 2007). These findings will help enrich analysis and discussion of how these information activities in a meaningful life experience can be classified and considered as identifiable wellbeing benefits. Thus, the adoption of Hektor's information behaviour model (Hektor, 2001) has been a helpful structure on which to build the extended exploration of embodied information and wellbeing benefits, as well as introduce the concept of low information needs in relation to serious leisure pursuits.

6. NEF/NHS 5 ways to wellbeing and the West Highland Way

To frame the research findings and discussion in this chapter, the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) were used to describe and analyse the wellbeing benefits present in walking the WHW. The 5 ways to wellbeing are: connect, be active, take notice, keep learning and give. Discussion of findings related to wellbeing benefits identifiable with the 5 ways and links to information behaviour is presented within each section.

Use of the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) was selected for this portion of analysis as the concept of wellbeing can be quite nebulous and hard to pin down. Adopting the 5 ways as a framework allows for the classification of wellbeing benefits found amongst hikers on the WHW clearly and in relation to a credible form of policy guidance aimed at promoting public wellbeing and a healthy society. Classification of wellbeing benefits in this serious leisure activity also opens the door to its use in looking at possible wellbeing benefits in other pursuits, from physical to creative, through an information behaviour lens.

6.1 Connect

In the 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), to connect is to is to create new social relationships with people you have not met yet and to strengthen existing social bonds with family, friends, colleagues or neighbours.

6.1.1 Social connections

Amongst walkers on the WHW there was evidence of strong social connections, both on the route between walkers, and away from the route with family and friends. This is facilitated through the exchange and sharing of information before and during the journey, as set out in sections 5.2 and 5.6, relating to the search & retrieve and exchange stages of Hektor's information behaviour model, as well as section 5.9, the publish stage, where participants described sharing information with family and friends away from the WHW. When viewed through the lens of the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), this social exchange of information and experiences fosters strong social connections along the route and with loved ones at home.

6.1.2 Social connections before journey

Interpersonal sharing of information about the WHW was a motivating factor in walking the route. This begins with hearing about the WHW from others leading to motivation to walk the route and was evidenced by one participant who was walking with his father and brother;

> *"There was always talk, should we do it? My brother did 3 or 4 days with a mate of his, and he said, I want to do it the whole way, are you into it?' And after two years of COVID and waiting, we finally concluded that we should do it together as father and two sons."* (P16)

Other participants were motivated by hearing about the WHW from work colleagues, with one saying, *"I talked to my manager, and she's from Glasgow originally, and she told me about the West Highland Way"* (P1). Another said, "*Yeah, my colleague she does all these long-distance walks and she's been to Scotland several times, so I asked her, what's a nice walk to begin with?"* (P13).

Beyond hearing about the WHW through family and acquaintances, some were recommended it from fellow walkers on other long-distance walks, as evidenced by a participant who had done a number of others;

> *"I think we knew from other long-distance walking routes, people will tell you what they have done and the West Highland Way was one of the ones that always comes up, so you just think well, you've just got to do it."* (P15)

The interpersonal sharing of information beforehand was also part of planning the journey. This came from family members (P3, P4 & P16) and a colleague (P13), who helped provide practical tips for planning their journey.

6.1.3 Social connections during the journey

There were a number of social connections that occurred over the course of walking the WHW, these included: interpersonal sharing of information; a deepening sense of connection due to repeated interactions along the route; social connections despite introversion; social connections amongst groups and dyads on the WHW; and social connections away from the WHW.

6.1.4 Interpersonal sharing of information

The interpersonal sharing, or exchanging, of information about their journeys amongst fellow walkers was commonplace. These interactions start off with simple verbal exchanges, as described in the following terms, *"let's talk about the West Highland Way and the things around us"* (P2). This was described by another as:

> *"You know that after like one day or two you notice that you always meet the same people so you have like a small talk about the weather mainly and the track and stuff like that."* (P7)

These regular, repeat interactions were then described to help foster enquiring about others' journeys:

> *"I think you're seeing the same people on the journey, so when you get to the end of the day you ask them 'How's your day been? How's your journey gone?'"* (P15)

Some of these repeat interactions were aided by staying in the same accommodation as other walkers:

> *"Yeah, just sort of sharing experiences, where they're going, where they've been, you know, what they've enjoyed. And then, yeah, I think the hostels give a chance to sit and chat with them and know who they are."* (P9)

In conversation with other walkers, people would share personal information about their lives. Most commonly this was where they were from (P5, P6, P18, P19, P20 & P25). Participants were positive about the international makeup of the fellow hikers they met on the WHW:

> *"What I think is fantastic is the world is in a very crazy place right now but, you know, you walk and you talk to people from all over the world."* (P19)

This was echoed by another participant:

> *"I think what has been memorable Is the camaraderie of other walkers, the variety of nationalities who are walking it."* (P21)

Linked to this, there were perceived cultural differences in walking the WHW versus places that participants were from. For one participant from the Netherlands;

> *"We always say hi to everyone in our own country, which is the Netherlands, and you just get a bit of a nyeh response, and that's it. But (here) people talk you know, they wait"* (P12)

This was described in similar terms by a Belgian participant;

> *"If you walk in Belgium, for instance, you say hi and that's it, even if you pass them three or four times, that's it. But here you can talk with everyone. It's not just a shallow hi, it's more than that"* (P16)

Although some personal information like nationality was shared, this was noted to be a pleasant interaction to have and was not too intrusive. This was described by one participant as;

> *"It's very supportive and it's mostly people talking about the experience of being here, it's not a lot of talk about what you do and you know, do you have any kids or anything like that. It's more like, how did you like the loch side today?'"* (P6)

These interpersonal exchanges of experiences on the journey were considered by participants to be a highlight of the journey. With one describing it as, *"just wonderful conversations and exchanges of friendly remarks"* (P5). For another participant, who was describing what had been memorable about their journey so far, it was;

> *"meeting people along the way who are doing the same thing, so you tend to have a lot of commonalities with these people"* (P9).

6.1.5 Deepening social connections over the course of the route

Regular interactions amongst walkers created a shared experience which deepened the social connection over the course of the journey. The sense of a shared activity strengthening social connections was commonplace. This was described by one participant as:

> *"The trail kind of connects everybody, I feel like there's already the shared background, so it's easy to strike up conversations with people."* (P11)

This sentiment was echoed by other participants, *"yeah it's fun to see like friendly faces, we all share it like a big family, we are all sharing the same experience"* (P8),

while for another it was, *"a community on the road, that's really fun, it's a good experience"* (P12), while another said;

> *"You are impressed by the camaraderie, there's a feeling of you're part of a community who are mobile in the same thing, so you're facing the same challenges and we share the same experiences."* (P21)

Further encounters with fellow walkers was also considered by one participant to be something they were looking forward to about the rest of their journey, *"meeting more people, that's sort of what I'm looking forward to"* (P9).

6.1.6 Social connections despite introversion

Introversion was not a barrier to strong social connections on the WHW. Some participants described how they were normally introverted or shy in their everyday life, with one half of a married couple saying:

> *"We're both introverts, but it seems like everybody kind of has a friendly mindset out here, and that's nice."* (P10)

This was echoed by another participant who talked of their introversion at home:

> *"Yeah, normally I'm not so… I am talking to you but not with strangers. But here, yeah, because you see each other's face all the time."* (P13)

Another participant talked of having a balance of time alone and socialising, *"it's a nice mix of solo/you can socialise when you want to"* (P17).

6.1.7 Social connections amongst groups and dyads on the WHW

Social connections were also strengthened amongst dyads while walking the WHW. For one participant, walking with her husband had been memorable:

> *"I think that, you know, travelling with my partner, it's been very… he's been very patient with me and that has been memorable"* (P6)

Similarly, for another participant who was walking with their partner, what was memorable for them was *"spending time with my girlfriend"* (P25).

For another walker, travelling with his father and brother, this was also memorable;

> *"The time with my father and my brother, it's the first time we're just doing this with us three together. So, it's a family thing, which is absolutely a plus"* (P16)

This was a similar sentiment in motivating a group of three sisters, whose mother had recently passed away, to walk the route:

> *"We decided we wanted to do something as a group, just kind of in memory of our Mom. That was one of our influences."* (P18)

6.1.8 Social connections away from the WHW

Social information about the journey was shared with family and friends away from the WHW, as discussed in section 5.9, relating to the publish stage of Hektor's information behaviour model (Hektor, 2001). This typically took the form of photos and videos that participants took as they walked the route and was shared privately through direct communication such as email or text message, or publicly through social media or fitness applications.

Many participants chose just to share their journey with family and friends through private communication rather than using public platforms. Sharing information with family and friends away from the route was not just a means of sharing photos and videos but of demonstrating they were safe and well. Interviewees described this in the following ways, *"my partner, I check in with him every day"* (P17) and *"I sent my parents one photo at the start to let them know I'm alive and I'll send them one when we're finished to let them know I'm back"* (P24).

For some the sending of information was a reciprocal arrangement and a means of keeping in touch with home life away from the route;

> *"I made a deal with my mother, she is looking after our cat at the moment for two weeks and I have to send her pictures and just tell her a bit about what we're doing and where we're camping and stuff like that. And in trade for that she gives me a picture of the cat and tells me how he's doing."* (P12)

For those that shared information publicly this took the form of sharing photos and videos using social media, participants discussed using Facebook (P2 & P20) and Instagram (P7, P10, P12, P13, P15, P16 & P17). For one interviewee, sharing on Instagram was a means of memory making, *"I've been doing like an Instagram post*

every day because I think it's a nice way to like show people but also, it's nice for me to revisit those" (P10). Another participant who was using Instagram to document their journey said that this was unusual for them, *"normally I don't post stuff on Instagram but I post a nice picture on my story because it's too beautiful"* (P13).

One participant noted that they were opposed to using social media (P19), while another had a differing approach to sharing the journey privately with family and more publicly with social media;

> *"Yeah, the views I share with Instagram and like, you know, the beautiful side of it, also the weather. But if we had a blizzard or something like that, that's what you share with your family."* (P16)

The sharing of information during their walk along the WHW can be considered a sharing of journey by proxy. This was done privately with one participant using a private Discord channel to share details with family and friends;

> *"Yeah, we've been using Discord for our friends and family to kind of interact and they can send us their kind of comments in real time somewhat."* (P3)

Another participant used Google Photos to share his journey with his family;

> *"Yeah, Google Photos and I send them the link and they'll uh they'll have a look and I update every day, so they get to see… so hopefully through my eyes, so no photos of me, but of the landscape."* (P9)

Hikers also used data from fitness applications to allow family members to follow their journey by proxy. One talked of how data from their smart watch allowed their family not just to see where they were but to interact and ask them questions about landscape features around them (P23).

One of the strongest themes to emerge from the thematic analysis was that of social connections related to walking the WHW, encompassing social connections: before the journey; during the journey; through sharing of information; strengthening over the route; despite introversion; amongst groups and dyads walking the route; and with family and friends away from the route. Many of these are consistent with descriptions of walking pilgrims on both the Camino de Santiago (Slavin, 2003;Innocenti, 2023) and on the St. Olav's Way (Jørgensen *et al.*, 2020), where

similar interactions amongst walkers on the routes, and with family and friends away from the routes, were reported. For many in this study, these social connections were a highlight of their journey and created strong positive associations with the activity. This also chimes with descriptions of walking pilgrimage fostering positive interactions with fellow walkers (Slavin, 2003;Jørgensen *et al.*, 2020;Innocenti, 2023). Strong social connections that develop over the course of the journey are clear evidence of wellbeing as described in the NEF/NHS 5 ways (New Economics Foundation, 2008;Aked, 2011), as these connections with other humans are central to the experience.

These findings also helps to situate the activity as a higher thing (Kari and Hartel, 2007), demonstrating that for many this type of camaraderie and communal experience runs counter to everyday interactions. Social connections are partly informed and grown through the interpersonal sharing of information among walkers along the route, this shows that information shared through the information activity detailed in Hektor's information behaviour model (Hektor, 2001) has a higher purpose than just being functional. This helps to demonstrate how this model may be used in conjunction with other frames of analysis to strengthen findings. Future studies looking at information behaviour in serious leisure should consider this added value to the social sharing of information. Possible future avenues for exploration in this area include other physical activities, especially those done in groups, as well as in social hobby activities such as board games or in creative pursuits done collectively like music, where similar life enhancing social connections may be found.

The positive wellbeing benefits resulting from social connections along and away from the WHW should also be central to the promotion of the route, encouraging potential walkers that positive and memorable social interactions are regularly encountered. They add greatly to the richness of the experience of walking the WHW.

6.2 Be active

The be active stage of the 5 ways to wellbeing is described simply as participating in physical activities and exercise (New Economics Foundation, 2008;Aked, 2011). These activities include many outdoor pursuits and includes walking as a primary

example, therefore, being active can be seen as intrinsic to walking the WHW, as walking is its central activity.

The most prevalent theme to emerge from analysis of the interview data in terms of physical activity was that participants considered walking the WHW to be a *"challenge"* (P1, P5, P9, P17, P23, P24 & P25). Further to this the activity was considered to be *"very tough"* by one participant (P2), while another revealed that they questioned their decision to undertake the activity, *"what have we done?"* (P12). One participant even described one of the sections of the WHW alongside Loch Lomond as akin to an *"assault course"* (P21). However, the physical challenge of walking the route was not always perceived negatively, it was described as *"fun, but difficult"* (P23), and for another the activity itself was central to their motivation to walk the route, *"I like walking"* (P16). Closely related to the sense of challenge was participants describing the WHW as representing an *"adventure"* (P16, P17 & P19).

From this sense of physical challenge present in the activity came a number of strongly positive associations with the activity. This ranged from one participant simply stating that it was *"enjoyable"* (P5), while for another they were enthused by their increased *"fitness"* (P19). Deeper than this was a strong sense of fulfilment from walking the route, this was described as feelings of *"pride"* (P17), *"achievement"* (P21), *"satisfaction"* (P21) and *"accomplishment"* (P24). This deep sense of gratification from doing the activity was also related as wanting to repeat the journey, that it *"makes you want to do it again"* (P6).

The centrality of walking to the activity was also observed to be a key component of what made the WHW memorable, with reaching the end point not considered to be as important as enjoying the walk itself. This was described by one interviewee as being *"it's the journey, not the destination"* (P16), with another positing *"it's better to travel hopefully than to arrive"* (P21).

For the be active step of the 5 ways, the central theme was that of the WHW representing a physical challenge to be overcome. In doing so, participants related feelings of pride and accomplishment in being able to meet this challenge. These are similar benefits to the ones noted in a report on long-distance walking routes in Scotland (Scottish Natural Heritage, 2010). This clearly demonstrates the wellbeing benefits of walking the WHW in relation to the 5 ways (New Economics Foundation,

2008;Aked, 2011). This centrality of a physical challenge being key to the appeal of an activity was also present in information science studies on hikers on long-distance routes, backpacking challenges and walking pilgrimage (Hyatt, 2017;Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022;Innocenti, 2023). Again, this links with the concept of higher things (Kari and Hartel, 2007), in creating a memorable lived experience for participants from which they take a sense of achievement.

6.3 Take notice

The 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) describe the take notice stage as a means to remaining present in the moment, aware of your surroundings and being receptive to profound moments in life.

6.3.1 Positive mental wellbeing benefits and contemplation on the WHW

An area of thematic analysis was that of positive mental wellbeing benefits described by the participants in relation to their experience walking the WHW, as well as an exploration of contemplative processes occurring during their journey. These tie in with the take notice stage of being present, taking in the environment around you and remaining open to memorable experiences.

6.3.2 Positive mental wellbeing benefits of walking the WHW

An emergent theme from the analysis of the interview data collected in May 2022 was that of positive mental wellbeing benefits arising from walking the WHW. As part of the interview, participants were asked if they had felt any positive or negative effects on their state of mind since starting their journey, all 25 participants stated that they had encountered positive effects from their experience. These effects were described in the following effusive terms: *"positive effects only"* (P1), *"absolutely positive"* (P3), *"very positive"* (P12), that it was like a *"mental holiday"* (P9), *"mentally it's fantastic"* (P15), *"I haven't been this content consistently in a while"* (P17) and that *"there's nothing to mess with your mind"* (p19). Participants had a wide range of descriptions of these positive mental wellbeing benefits: of feeling "*at peace"* (P3), *"calm"* (P3 & P16), *"present"* (P5), *"relaxed"* (P9), *"chill"* (P10) and *"zen"* (P12). Further description of these positive effects included that the activity was *"meditative"* (P5), akin to a *"walking meditation"* (P17), that they had an *"ease of mind"* (P16) and they felt that they were *"clearing the head"* (P4 & P15).

One caveat to these descriptions of positive mental wellbeing benefits is that two of the participants (P2 & P5) pointed out that they felt that although they experienced positive effects, the felt they were in a good place mentally before starting their journey. Another caveat is that one of the participants (P21) described experiencing negative mental effects from the physical challenge of the journey and from some of the adverse weather conditions but that these had diminished over the course of the route and the positive effects became more prominent. These positive effects on their state of mind were also described to run counter to, or alongside, negative physical effects associated with tiredness or bodily pain (P4, P9, P10, P21, P23 & P25). This was described by participants in the following terms: *"my body's in more pain but my mind is clear"* (P4), *"you feel a little sore and stuff, but it feels good too"* (P10) and *"makes you feel good even when your feet are sore"* (P23).

Central to these positive mental wellbeing benefits described by participants was a theme of low information needs leading to simplified thought processes that were key to the stated positive effects of walking the WHW (P1, P4, P5, P6, P7, P8, P10, P12, P13, P14, P15, P16, P23, P24 & P25). The low information needs resulted from participants stating how relatively easy navigation was due to the route being well signposted, meaning more complex forms of navigation using a map and compass were not necessary. Further to this, participants described concentrating on simple goals and aims, such as reaching the daily destination of their itinerary, described as having *"only one thing to do"* (P4), and ensuring that they were eating sufficient food for fuelling the activity, staying hydrated and taking comfort breaks, *"what am I gonna eat tonight, where we're gonna sleep"* (P7). These low, or simple, information needs were described in the following terms:

> *"To have this um activity where you get up and the only thing you have to do is get to where you're going to be the following night. So, you know, what could be better than that?"* (P14)

These low information needs led to a number of simple thought processes that participants described to have a positive effect on their mindset: *"you got this one goal and that's just the finish line"* (P12); *"it simplifies things"* (P16); and;

"It's quite nice, from like a psychological perspective, to be concentrated on the stuff that you're doing and not think about the other stuff, you're just so focused on the things you need to do." (P23)

Many participants talked of how the benefits from these low information needs and simplified thought processes were an antidote to stress and anxiety experienced in their everyday work lives (P1, P6, P8, P9, P12, P14, P15, P16, P24 & P25*), "to fight against stress and against burnout"* (P1). Others talked of how walking the WHW helped combat work related stress in the following terms:

"Yeah, I've felt much mental health improvement, because everything was quite stressful for me, over the past few months, just have had some work stress." (P6)

"Yeah, like, you know, like just thinking up and doing some basic steps like walking, eating, sleeping and not all the stuff you have at work." (P7)

"Positive effects, you know, to have a break from any routine, you know sort of stressful work routine, it is gonna be beneficial." (P14)

"I have a very busy job, not classic nine to five, but longer hours and when you come here you forget it. Every minute you're not thinking about work." (P16)

"It's nice not to think about work, for me that's true of any kind of holiday, but this one is like maybe particularly true because you're more off the grid." (P24)

These positive effects were observed by some of the other participants who were in groups or dyads, P5 said they *"agree"* with the above statement from P6 and P15 said they had seen, in a positive manner, a *"huge impact"* on P14's mindset. Beyond work stresses, some other participants felt the activity to be antidote to everyday stresses more broadly (P4, P6 & P12), *"I was really stressed out for different reasons and now I'm not"* (P12).

Further to the description of low information needs and simplified thought processes leading to positive mental wellbeing benefits, were description of how connections to the natural environment and fellow walkers resulted in these positive effects. These

natural connections with the environment on the WHW were described in the following terms: *"I think being in nature this much really helps calm my mind"* (P3), *"I become just calm from everything I see and hear and pick up"* (P16) and *"I think for me, at least, like being in nature always has like a positive boost on your mindset"* (P23). Specific elements of the natural environment were also mentioned: the *"fresh air"* (P9 & P25), the *"sound"* (P9), the *"scenery"* (P15) and the *"animals"* (P24). Also commented on by a number of participants was how concentrating on the going, the terrain underfoot, helped to foster a positive mindset (P6, P13, P15, P20 & P24). This was described as: *"we sort of like put one foot in front of the other… and don't trip you know and get to the top of this hill"* (P6) and *"to be honest, you don't think about anything, you're just too busy admiring the scenery, looking where you're going"* (P15).

6.3.3 Thought processes while walking the WHW

Another key theme emerging from the analysis of that of contemplative processes encountered whilst walking the WHW, these thought processes were identified by participants after being asked what they thought about as they walked the route. Linking with the positive mental wellbeing benefits, the most common type of thought process described was of a simplified thought process brought about by concentrating on the task of walking, this in turn was fostered by low information needs resulting from following a well signposted path and just needing to know where to eat and drink that day (P1, P4, P5, P6, P7, P8, P10, P12, P13, P14, P15, P16, P23, P24 & P25). This was linked with a reduction in stressful thought processes for some (P1, P14, P15 & P16). These simplified thought processes were described as not being *"deep"* (P6) and were mindful mainly of the activity as they went (P5, P6, P8, P10, P16, P17, P20, P23 & P24). This was related in the following terms:

> *"I've been very, very present with what's going on in the moment, and when my thoughts do meander, I've had a few thoughts where I'll drift back to my work or things like that, but they're very, very light. They're not really going into that… if they just kind of… they'll pop down like a cloud and float away very quickly. Yeah, it's being here."* (P5)

Closely associated with these simplified thought processes were participants talking of not thinking about anything in particular, or almost an absence of thought (P10, P12, P13, P16, P23 & P24). This was described as, *"well sometimes I don't think about anything"* (P10) or *"I try to think as little as possible, just let everything come to me"* (P16). As demonstrated in the positive effects on mindset, some participants found their thought processes dominated by concentrating on the ground as they walked (P6, P13, P15, P20 & P24). One participant also talked of being in a *"daydream"* as they walked (P17).

Running counter to this, one participant mentioned thinking about *"lots of things"* (P21), while another related how thoughts could range from something quite simple to something much deeper and *"philosophical"* (P11). Indeed, two participants described considering existential thoughts about the nature of existence and place in the universe while they walked (P11 & P19).

For some, thought processes focused on the natural environment around them (P3, P16, P21, P22, P23 & P24). Another common thought process was one of gratitude to be doing the activity (P9, P19, P21, P22 & P23). Thinking about family was also expressed by a number of interviewees (P5, P6, P18, P19, P20, P21, P22 & P23), with some contemplating grief from having recently lost a parent (P6, P18, P19, P20 & P23). The physical condition of some participants was also something thought about as they walked (P4, P20, P20, P21 & P22). The notion of *"simplifying"* (P1) life away from walking the WHW was also discussed, of reconsidering *"priorities*" (P19). One participant talked of thinking about an important life transition, in this case retirement, which was taking place around their journey (P18). Another talked of considering their future plans in terms of career (P9). One participant did discuss how they were thinking about their work as they walked (P2), but this comes with the caveat that they run tours on the WHW and they were planning on writing a book about the route. Another thought process as participants walked was in considering the history of parts of the route and how it made them feel to be walking the same path as soldiers or drovers would have done in the past (P10 & P23). Finally, one participant described thinking about memory making, the hope that they would remember the scenery of the route in later years (P10).

Analysis of the interview data showed that for the take notice stage there was strong evidence of participants reporting positive mental wellbeing benefits from their journeys, as well as indications of contemplative through processes. Interviewees recounted how walking the WHW encouraged a sense of mindfulness, of being very aware of your surroundings and your place in them that fostered a positive mindset. This places the findings in relation to the take notice stage of the 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) as one of the most significant in this activity, with all participants having described the experience to have had a positive effect on their state of mind. Linking with the emergent theme of low information needs on the WHW in the previous chapter, participants described how their low information needs during their journey had a key role in the reported wellbeing benefits. This represents a development of the concept of information needs (Savolainen, 2012) into a novel area, a serious leisure activity that runs counter to everyday activities, where low information needs provide respite from high information needs and are linked to positive mental wellbeing benefits, a form of information holiday.

This also very much links with reporting of positive mindsets and thought processes in previous studies on Camino de Santiago (Slavin, 2003;Innocenti, 2023) and the St. Olav's Way (Jørgensen *et al.*, 2020), as well as in broader literature around walking (Shepherd, 2008;Davidson and Stebbins, 2011;Pujol, 2018). From this, these research findings clearly demonstrates that walking the WHW has positive mental wellbeing benefits that can be linked to the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), of being present in the moment, meaningfully engaging with the environment around them and being receptive to profound experiences. This also further illustrates how walking the WHW should be considered one of life's higher things (Kari and Hartel, 2007) and that it can be considered a serious leisure activity with the opportunity to experience profundity, in contrast to negativity in other areas of life (Stebbins, 2009). Therefore, these positive mental wellbeing benefits should be central in encouraging people to walk the route and in managing the route to protect the natural environment which helps foster these positive mindsets and provide memorable experiences which can last a lifetime.

These findings also provide nascent understanding of the possible role of information behaviour in consideration of contemplation as an activity. With environmental embodied information from their surroundings and the low information needs while navigating the route, participants reported encountering a range of positive contemplative states, including getting into a flow state. This ties in with the meditative qualities of long-distance walking reported on walking pilgrimage routes (Slavin, 2003;Jørgensen *et al.*, 2020;Innocenti, 2023) and backs up Robert Stebbin's assertion that flow states could be encountered in walking as an NCA (Davidson and Stebbins, 2011). These findings suggest that if information science is to delve into the connections between information behaviour and contemplative practices, identifying activities posited as being linked to contemplation, such as walking (Duerr, 2011), could be fruitful. Latham, Hartel and Gorichanaz (2020) suggest that information science should take an adjacent position to contemplative studies that is equal to the other fields described by Louis Komjathy as orbiting and informing it (Komjathy, 2017). In doing so, information science can help develop understanding of how humans engage in contemplative practices and, symbiotically, information science can broaden its scope and understanding of a profound area of existence. Designing future studies based on activities identified in foundational texts in contemplation studies as being primary contemplative activities, such as those in Duerr (2011), coupled with a clear focus on identifying what information feeds into these contemplative practices, or indeed the absence of it, this could yield novel findings and links between the fields of information science and contemplative studies. Activities where there may be low information needs, as described in this thesis, could also be a fruitful area of exploration. Findings from this study indicate that the consideration of embodied information and the contexts which might create low information needs could be an area ripe for investigation.

6.4 Learn

The learn stage of the 5 ways to wellbeing is described as participating in new activities and experiences, developing a deeper interest in a pursuit, often exercise, and personal development through education, in both formal and informal settings (New Economics Foundation, 2008;Aked, 2011).

6.4.1 Long-distance walking as an opportunity to learn

The activity of walking the WHW represents an opportunity to learn in itself, for some this represented an extension in their development of a pursuit, long-distance walking, while for others it was their first experience of the activity and offered the possibility of generating an understanding of it and developing it into a longer-term pursuit. The split between walking the WHW being a development of long-distance walking as an activity and it being a novel experience was roughly even, with thirteen participants having done some other form of long-distance walking (P1, P2, P5, P6, P7, P8, P10, P11, P14, P15, P17, P19 and P21) and twelve who had not (P3, P4, P9, P12, P13, P16, P18, P20, P22, P23, P24 & P25).

Of those who had done some other long-distance walking only one (P2) had previously walked the WHW before, meaning that, for the rest who were developing long-distance walking as a hobby, the route offered an opportunity to learn about their surroundings as they walked and also to deepen their knowledge of the activity. For the participant who had walked it before, this was linked to his business offering guided tours to German tourists. Amongst those who were developing their practice of long-distance walking were dyads who had previously done the activity together on different routes, including three couples (P5 & P6, P7 & P8 and P10 & P11), as well as a pair of work colleagues (P14 & P15).

For some who were undertaking a long-distance walk for the first time there was an explicit intention that this represented an opportunity to learn about the activity before embarking on other journeys (P23 & P24). Through walking the WHW they were able to test equipment, practice route planning and assess physical performance to better understand their ability to consider other long-distance walking challenges. Among some dyads there was also a mixture of those who had done other long-distance walking and those for whom it was a novel experience, a group of three siblings (P18, P19 & P20) and a married couple (P21 & P22). This demonstrates how one member of a group with greater experience was able to share knowledge of the activity with inexperienced participants.

6.4.2 Learning through cultural heritage

Another opportunity to learn while walking the WHW came from experiencing the cultural and natural heritage present along the route. Indeed, the appeal of the

cultural heritage of the WHW was a motivating factor for many participants to walk it. For those who were visiting from another country it was viewed as a means to experience the culture of the country as they perceived it. An Australian walker said he was eager to "*see Scotland through hiking"* (P9) and also indicated that walking the route was helping to develop a deeper appreciation of the country, having visited on previous occasions. For one participant originally from Scotland, but who now lives and works in England, it was a means to showcase the country to their companion, who was from England but had never been to Scotland, *"I always really wanted to show her a bit of Scotland"* (P14). For one walker who lived abroad half the year, and the other half in England, but who had visited Scotland before it was a chance *"just to see Scotland again"* (P22).

Cultural exchange with local people along the route was also a motivating factor to walk the WHW. For a German hiker who had walked the WHW multiple times before as a walker, and as a tour guide who was planning on writing a guidebook for the route, he said, *"I like Scotland very well, the people of Scotland"* (P2). This participant also viewed walking the WHW and its associated cultural experience as a chance to develop his understanding of the English language, with a view to assisting the guidebook he was writing. An American couple, who had got engaged on a previous visit to Scotland, spoke of being drawn to walk the WHW as they, *"enjoy the people, the culture"* of Scotland (P4).

The food and drink of Scotland was a part of the local culture that walkers on the WHW had been enthused to experience. One American walker said *"the food has been great"* (P5), while another said, *"we've had a lot of really good food"* (P11). For both a French and a German visitor the *"Scottish breakfast"* was something they greatly enjoyed (P2) and were looking forward to having more of (P8), while another French participant found the dish of *"haggis"* to have been a highlight (P7). One participant talked of drinking local beer to have been an enjoyable part of their journey, *"the tastes of the beers tastes good"* (P2).

Historical heritage was reflected on as walkers walked the route. For one American visitor, they thought about others who had walked the paths before them when they had different uses:

> *"Honestly, I think a lot, I guess maybe because I'm a history person, I think a lot about the long journeys that people have historically taken by foot and this… this like feeling how it's like if they can do it, and they don't have you know nice hiking shoes and hiking gear, and I'm out here and there's nothing to complain about and people did these kinds of journeys, you know, for… with a purpose."* (P11)

A participant with dual American and Canadian nationality, who currently lived in London, also considered the relative challenges they faced in walking the route versus those who had walked it in historical times:

> *"Yeah, I think yesterday I was… we like arrived at the section where there was like, there's some like information panels and yesterday it was about how this path was like an old cattle path, like for farmers to bring their cattle down to the lowlands. And I was… I randomly said to him like, 'Oh, isn't it weird that like back in the day, this was a path that people had to walk down every day because they have to like go sell cattle to feed themselves, whereas now we're just doing this thing for fun, you know?' Before it was like life or death you have to get down this path."* (P23)

6.4.3 The WHW as a secular pilgrimage

Before covering the rest of the learning wellbeing benefits, it should be noted that a key theme that shaped the design of the Phase 1 study, and the structure of the original PhD proposal, was that walking the WHW represented a secular pilgrimage and that this PhD thesis could study this from an information behaviour point of view. The move away from the WHW being considered a site of pilgrimage, towards viewing it as a cultural heritage route was informed by findings from the Phase 1 study. As part of establishing whether secular pilgrimage was a valid framing of walking the WHW, all participants in the online interviews were asked whether their journey felt like a pilgrimage or not. From this question only two participants said that it did feel like one and eight said it did not.

Of the two participants who said yes, one said that it felt like a pilgrimage as they were seeking solitude in nature, while the other said that it felt like one as they were dealing with a chronic illness while walking the route.

Amongst those that said it did not feel like a pilgrimage was a common sentiment that walking the WHW was less about the end point but the journey itself. Much of the appealing landscapes were located during the walk and it was commonly stated that, although it had lots going for it, Fort William is not what they considered a pilgrimage destination. Of the participants who said it did not feel like a pilgrimage there were some who had recently recovered from life-threatening illness and experienced the death of a parent, both serious life events which may make someone more likely to consider the journey as a pilgrimage.

This data suggested that the WHW should not be considered a walking pilgrimage in shaping the focus of this thesis. However, it was clear that there was still a great deal of crossover between the activities. Based on the gathered data and on literature on walking pilgrimage, both can be considered the potential site of profound experiences, or higher things; both represented a serious leisure activity, both activities encouraged a positive mental mindset and both are informed to a large extent by embodied information.

An analogy for the subtle distinction between the two activities would be to consider viewing art in a religious building or location, such as a church or temple, and viewing art in a gallery. They are arguably the same activity but it is their cultural context which distinguishes them. Both involve appreciating artistic creation, but one location has a religious heritage associated with it, while the other has a more straightforward cultural heritage association. Non-religious people will go to appreciate art in a cathedral for example, as a non-religious person may engage in a walking pilgrimage route with religious heritage, and religious people may go to a gallery to view famous art inspired by faith, as a religious person may engage with their faith as part of their journey on a more recently created long-distance walking route, such as the WHW.

The thematic analysis of this Phase 1 study was useful in indicating themes that aided the research design of the Phase 2 study, for example the presence of embodied information, natural and social connections as well as positive mental wellbeing benefits from walking the WHW (Munro, Innocenti and Dunlop, 2022). It also helped uncover that most participants did not consider the journey to represent

a pilgrimage, meaning that a shift in focus towards the emergent themes was required for the Phase 2 study.

6.4.4 Learning through natural heritage

The natural heritage of the WHW was central to walker's experiences. Almost all participants talked of the natural environment along the route informing their motivation, their memorable moments and what they were looking forward to for the rest of their journey. Some spoke of *"the nature"* (P2) and to be *"in nature"* (P12) being what had drawn them to walk the route. For others it was the landscape along the WHW that had motivated them, descriptions of *"the space, the countryside"* (P4) and *"the ruggedness of Scotland"* (P19).

Descriptions of what had been memorable about their journey so far featured the natural environment. A participant from Germany enthusiastically said, *"what I really loved was the landscape, it's really beautiful"* (P1), an American walker talked of *"walking through some beautiful landscapes"* (P11), a hiker from Belgium spoke of *"the nature of course, the views, superb!"* (P16) and a British hiker talked of *"magnificent scenery"* (P21). A participant from the Netherlands described how *"the most memorable thing about this journey is how lovely it is and how easy the scenery makes it to walk"* (P12). Specific points along the WHW were also cited as providing memorable experiences; Loch Lomond (P1, P3 & P4, P15 and P21), Conic Hill (P7), Loch Tulla (P12 & P13) and Rannoch Moor (P17). For another from France it was not specific landscape features that been memorable but; "*for me, I don't know if it's one place and one thing, it's more the progression of the landscape"* (P8).

As well as memorable experiences on their journey so far, for some seeing more of the landscape along the WHW was what they were looking forward to for the rest of their walk. For some participants it was *"different terrain, seeing more of the countryside"* (P4), *"different landscapes"* (P8), *"looking forward to the views"* (P10) and that *"the views will become even better"* (P16). Others were looking forward to specific features of the landscape as their journey progresses; Rannoch Moor (P7) Lairigmor (P16) Devil's Staircase (P17) Ben Nevis (P23).

Thematic analysis of the interview data in relation to the NEF/NHS 5 ways (New Economics Foundation, 2008;Aked, 2011) showed there were a number of ways in which participants were learning from the experience. There were some who were

developing a pre-existing hobby or interest in long-distance hiking, having completed other routes prior to this, and others for whom this was their first experience of the activity. Both are relevant to the concept of serious leisure (Stebbins, 1982), as they represent the development of a skills in an NCA (Davidson and Stebbins, 2011), or a possible entry point for engaging with a new pursuit. For some, this demonstrates their cultural heritage identity as a hobbyist (Falk, 2006;Falk, 2013), where the activity represents an extension of their keen interest in long-distance walking. This backs up the findings of a report by Scottish Natural Heritage on the benefits of long-distance walking routes, and that they represent an opportunity for life-long learning (Scottish Natural Heritage, 2010).

The findings in this section also indicate the WHW's possible classification as a cultural heritage route by using participants' perspectives in detailing aspects of their journey that are similar, or mirror, the definition of cultural heritage routes (UNESCO, 1994;Karataş, 2011;Durusoy, 2013). Immersion in the natural and cultural heritage of the WHW was central to many participants motivation to walking the route. There was evidence of hikers engaging with the cultural history of the route by contemplating what travelling the route would have been like in previous centuries for soldiers and for drovers (ScotWays, 2023). Comparison of long-distance walking routes, such as the WHW, with walking pilgrimage routes, such as Camino de Santiago and the St' Olav's Way, allow for a deeper understanding of the similarities and differences between these two types of cultural heritage route. The many overlap in findings reported between this research and studies on walking pilgrimage routes (Slavin, 2003;Jørgensen *et al.*, 2020;Innocenti, 2023) suggest that the two activities are very closely related and it is the cultural contexts that separate their classification as activities.

This is enough evidence to suggest that in considering the WHW a cultural heritage route, the body responsible for managing the route should consider seeking recognition of its cultural significance through the European Cultural Heritage Routes. Doing so could boost the profile of the route internationally, drawing more visitors to boost the local economy, while also enshrining a commitment to protect and promote the natural and cultural heritage components of the route.

Walking the WHW also represents an opportunity for participants to immerse themselves in the cultural heritage of the route, something that is seen on cultural heritage routes with a history of religious pilgrimage like Camino de Santiago (Slavin, 2003;Innocenti, 2023), the Fife Pilgrim Way (Bowman, 2020) and St. Olav's Way (Jørgensen *et al.*, 2020). This can also be seen in participants' enthusiasm for immersing themselves in the natural heritage of the WHW.

This immersion in the route can be viewed as evidence of adopting an identity during the experience, as posited by Falk (2006; 2013), in this case that of the pilgrim or recharger. These identities are given for people who are *"primarily seeking to have a contemplative, spiritual and/or restorative experience"* (Falk, 2013, p.116. The closeness between long-distance walking on an established cultural route and that of walking pilgrimage is again highlighted by the overlap in literal interpretation of the closest characterisation of cultural identity as a pilgrim, and then subsequently a recharger. This level of engagement with cultural heritage through the journey of walking the WHW also helps to position it further as a higher thing (Kari and Hartel, 2007), a cultural heritage experience set counter to everyday life (Falk, 2013). These identities resonate with the consideration of the WHW as a cultural heritage route and are useful in approaching how to classify people who walk long-distance cultural heritage routes. This, in turn, can better aid the design, maintenance and promotion of the WHW, as well as other routes, to those who may be seeking similar identity related experiences.

6.5 Give

According to the 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), to give can be to have positive, simple interactions with others in life without expecting anything in return, to offer help to others and includes activities such as fundraising for a charity.

6.5.1 Giving through social connections along the WHW

Evidence of giving can be seen alongside some of the social connections reported in the connect stage of the 5 ways. For example, strengthening social connections over the course of the route resulted in concern for fellow walkers' welfare. This was described by one as;

> *"I think there's like a lot of long-distance walks, ehm you meet people like yourself, you keep bumping into people along the way and then you find you've sort of invested a bit of emotion if you like into that and I keep wondering how people, if I haven't seen people, well how are they getting on?"* (P14)

This concern for a fellow walker was also based, in this instance, on appreciation of them walking the WHW to raise money for a charity, a hospice where their deceased wife was treated. Other participants showed concern about the physical condition of one of their fellow walkers;

> *"There's one guy who we keep seeing who has had terrible blisters the whole time, every time we see him it's worse"* (P24)
>
> *"He just shrugs it off."* (P23)
>
> *"We ask him if it's ok?"* (P24)

Another participant also showed concern of the physical condition of fellow walkers, *"one or two and I stopped and asked if they were alright and if they needed any blister plasters"* (P22).

Concern for others was balanced with *"support"* (P6) and *"encouragement"* (P22) from and to fellow walkers as the journey progressed. There was discussion of *"inspirational people"* (P6) helping to create an uplifting experience along the route. Another giving sentiment that was expressed was that of *"patience"* (P6), in this case between a married couple where one partner was appreciative of how the other was being mindful of their walking ability.

A further instance of giving amongst participants along the route was that for one participant the journey was a birthday gift from friends (P7) and they had chosen their partner to accompany them on this journey (P8). This participant was also greatly impressed by the concept of the honesty boxes that appear along the route (P7). These are small boxes, and in some cases fridges and freezers, containing food and drink items such as water, soft drinks, snacks and ice creams, typically outside private properties along the route, which are unmanned and stocked by local residents that ask walkers to leave cash for any items they take on an honesty basis.

Giving amongst hikers on the WHW was another way of demonstrating the wellbeing benefits of the activity. Participants described situations where help was given to fellow walkers and this elevated the experience. This can be seen as linked to the social connections evident in the connect stage, but were extended to the point where it went beyond a simple connection and developed into mutual support. This further helps to situate the activity of walking the WHW as a higher thing (Kari and Hartel, 2007). This also further demonstrates the cultural impact of the route and enhances suitability for seeking internationally recognised status as a route of significant cultural value.

Future studies which seek to expand knowledge of wellbeing benefits from an information science perspective using the same framework as a lens for analysis should look to activities were giving is more demonstrably central to the activity, such as in volunteering or fundraising work.

In totality, the findings in this study clearly represent significant wellbeing benefits from walking the WHW. They should be central to the representation of the route to the public and promotion of them could be encouraged by public bodies with a broader remit for promoting public health. Walking the WHW can be seen to offer the opportunity to encourage positive psychology to all who walk it, an opportunity to connect meaningfully with others, a challenging physical activity and an opportunity to learn, grow and to give

There are interesting implications for the field of information science as well, these wellbeing benefits are linked to a number of information behaviours which present further avenues of possible investigation. Embodied information, low information needs and the social exchange and sharing of information were central to the reported wellbeing benefits and all are present in the findings and discussion chapters in this thesis. This makes it possible for future studies to delve into the relationship between these concepts and wellbeing benefits in other activities where they are present.

7. Reflections across the thesis

This chapter contains personal reflections on the methods and frameworks utilised in this research project, seeking to draw links between them, as well as the research project in its entirety.

7.1 Reflections

At the end of this thesis, I have tried to reflect on the PhD studentship as a whole and provide personal insight into my experiences using the described methods of this thesis, the different frameworks used to analyse the data related to the research questions and interrelationships between them.

7.1.1 Reflections on methods

The primary reflection on the methods used in this study were that ethnographic methods were justified and fruitful for looking at the research questions, particularly those related to embodied information and wellbeing benefits. When participants were answering interview questions related to those areas, they were doing so while the experience was fresh in their mind, and conducting the data gathering in the field made this possible. Conducting the research in the field was a significant challenge though, I had not previously done a multi-day long-distance hike since 1997, so there was a personal challenge to be able to do the activity while still being able to conduct research. This is where engaging with increasing my walking and attempting hikes similar to sections of the WHW was valuable. During this I also practiced recording and journaling my experiences as a form of ethnographic record. There was also the challenge of carrying out the data gathering in a time where restrictions on travel and social mixing due to COVID-19 (Scottish Parliament Information Centre, 2023) meant that extra steps had to be taken to gain institutional approval for the studies. While these restrictions have eased for now, the challenge of organising research in the field which is safe for participants and researchers, as well as meeting institutional guidelines should not be underestimated. One thing that was evident before and during the data gathering exercises was that the risks that stemmed from the adoption of these methods were high. Injuries on the WHW are not uncommon and one twisted ankle would have represented a threat to being able to conduct interviews in situ. The risk of data loss was also high, inclement weather on the

WHW is common and interview recordings stored on an electronic handheld recorder could be vulnerable to water damage. Worries related to these risks were high but preparation was key to offsetting these concerns, learning skills about using correct equipment by engaging with hiking and audio recording before embarking on the data gathering exercises greatly helped in this regard. Indeed, the challenges and risks associated with gathering data in this manner resulted in great reward through personal satisfaction in carrying them out successfully. I found these methods to be personally fulfilling and I am very grateful to have selected the WHW as a site for the research, as I now have a meaningful connection to the route that goes beyond the research project.

Another challenging area of these research methods was in reducing the emphasis on pilgrimage that had been present in the research project at the outset, and through the earlier stages. Research projects can change throughout their process but changing or removing an aspect that was an original aim is difficult. It can also be risky but I feel that the study found a parallel path to that of walking pilgrimage, one that in its design and findings has a great deal of crossover with that activity. Being able to characterise the WHW as a cultural heritage route places it, and other long-distance walking routes without a historic pilgrimage link, in the same family and hopefully opens up the consideration of cultural heritage routes as representing an activity akin to a walking pilgrimage.

An area of the methodology I would have liked to have been able to develop more was in the use of field recording. A lot of time was spent learning how best to make recordings and in how to edit them for use in the research. Although an experimental form of introducing them to the interviews was attempted in the Phase 1 study online interviews, this had to be abandoned when conducting the Phase 2 study in situ while walking the WHW. This is an area that has the potential to uncover rich findings in regard to embodied information, memory making as well as the design of wellbeing applications and cultural heritage installations. While not featuring as prominently in this research project, I am still grateful for the time invested in it as it helped as part of developing a practice of keeping an ethnographic record using audio recordings, helped in the conducting of audio recorded interviews in the field, created recordings which have been shared online, used in presentations and in this thesis.

7.1.2 Reflections on embodied information on the WHW

The most immediate reflection on embodied information was the confirmation that there was much evidence of its existing on the WHW. This perhaps should not be a surprise given the physical nature of the activity but it does bear out the suggestion that studies on embodied information should look to physical activities to uncover instances of it (Cox, Griffin and Hartel, 2017). The most widely discussed type of embodied information present in this activity related to sensory interactions with the environment of the WHW, this makes it unique to this setting, indeed unique to the days on which I interviewed participants. This suggests there is a wealth of opportunities to explore embodied information in other physical activities undertaken in different locations, each with sensory information unique to their environment. The types of environmental embodied information may vary wildly across a range of physical activities, those which are done in an indoor setting could be quite different to those in a rugged outdoor setting like the WHW. This presents a potentially large horizon of discovery for information behaviour studies, which also presents associated problems. If the types of embodied information to be uncovered differ to a large degree, then this presents an issue with how to report them in a standardised way. It may well be that a one-size fits all approach to investigating embodied information is not possible, or indeed wise. The types of embodied information that emerged during this study are valid and I believe they have been reported in a manner which suits the activity, that does not mean the same types will always be present or prevalent in other areas. Within analysis of the sensory information in this activity, some senses such as gustatory ones were not widely discussed, it is a reasonable assumption to make that gustatory information would be much more important in a study on chefs or sommeliers. Immersion in the topic and the field through ethnographic observation and data gathering has been a great help to letting the types of embodied information emerge reflexively through this project. I would encourage other researchers keen to explore this area to do the same, where possible safely and responsibly.

In terms of studying embodied information from within and embodied information from others, there was evidence of both in the activity of walking the WHW. However, further studies that seek to detail this further may find more fruitful findings in more organised forms of physical activity such as team sports. To develop this

further, it may be necessary to look at activities beyond the level of being a serious leisure pursuit and look at physical activities at an elite or professional level.

To look further at embodied information recorded using technology could potentially generate useful findings in the development of technological applications and systems that can support physical activity. Doing so can improve the design and delivery of such technology and seek to reduce barriers, as well as encourage and enable participation in physical activity.

One complexity with studying embodied information was having doubts around the validity of findings related to it. As it is a relatively new area in the field of information science, it was not uncommon to be doubtful about the acceptance and usefulness of its existence. I do not have a long career in research but I believe this level of doubt may be encountered no matter what area you are looking at, and may be heightened if it is felt that it is a relatively novel one. These doubts were assuaged somewhat by immersing myself in the activity of walking and in hiking the WHW, observing and journaling my own experiences to give me a sense of what others might encounter while walking.

An important thing to consider with embodied information, especially in regard to future studies, is that it is not always pleasurable. There were instances of people describing being in pain and discomfort during their walk in this study but this was offset by the pleasure of taking in the natural environment around them, so pleasure and pain are not mutually exclusive. This can reasonably be expected to be observed in other physical activities that require a deal of exertion. To consider embodied information holistically, it may be necessary to look at areas of life where this is unpleasant for people, perhaps in areas where people face physical barriers to accessing information. This would help to meaningfully develop the concept of embodied information within the field of information science by seeking to remove barriers and enable access to information for all. This represents an opportunity for embodied information to become relevant and useful to the provision of library and information services more holistically, in turn placing it as a relevant line of enquiry in future information behaviour studies.

A highlight of conducting this research has been discovering how central to the experience of walking the WHW embodied information was, particularly

environmental embodied information. That this helps establish the activity as a higher thing was a very rewarding discovery. To be able to report some of the joy and excitement that participants experienced as they walked the route truly made it enjoyable and memorable for me too.

7.1.3 Reflections on Hektor's information behaviour model

When reflecting on the use of Hektor's information behaviour model (Hektor, 2001), the primary sense of it is as a useful tool for structuring findings in an information behaviour study. For this research, it was particularly useful in providing structure, in this case a bridge, between two different chapters with diverse, relatively novel areas of discovery. This provided a steady base where most of the functional aspects of participants' information behaviour could be detailed, valuable insight that would have been missed from this thesis if the focus had solely been on embodied information and wellbeing benefits. For information behaviour studies to be useful to the field, it is important that elements of them are grounded in definable information behaviours. Anyone looking at novel areas in information science could benefit from anchoring their findings to such a model. The wider the adoption, the greater the benefits in allowing for a greater deal of comparability in human information behaviour studies. Indeed, if more studies incorporate it then it would be possible to conduct meta-analysis of findings that use it to develop and deepen understanding across information behaviour studies.

There were some issues around its suitability to cover more complex areas of information behaviour. For example, the characterisation of walking the WHW as having low information needs by participants is a key finding, but was hard to incorporate within the structure of the model. Important findings are in danger of getting lost when sticking solely to the structure. If a study is relying solely on using this model, then care needs to be taken to avoid missing out on key findings in the analysis stage by sticking rigidly to the stages of the model as codes. It is important to allow some findings to emerge inductively, even if outside the structure of the model.

Further to this, when it was used to classify relatively new concepts such as embodied information, it was useful for capturing some elements of it, but not all. To only cover embodied information using the model would be to risk diluting some of

the key findings in this regard. If findings are shoehorned into the different information activities then they do not stand alone, reporting phenomena such as embodied information should exist as they are reported and observed by the researcher, even if this does not aid comparability.

Within the different information activities there appears to be the possibility of usefully exploring some areas of life. Activities and pursuits with a great deal of social interaction may benefit from having some findings grounded in the exchange stage of the model. Similarly, to uncover instances of instructing it could be beneficial to look at physical activities that require coaching or learning to be able to participate at a certain level, something that was not apparent in this study due to the nature of long-distance walking.

So, ultimately, even though there were some issues with its use, overall it was still worthwhile to use Hektor's information behaviour model (Hektor, 2001) in this study. Using it in conjunction with other concepts and frameworks that are more experimental gives overall findings a sound basis. While there are limits to how it can convey more complex information behaviours, it also allows for more functional information behaviour to not be lost in highlighting more conceptual findings. This brings a balance to research projects looking at novel areas and provides a more holistic picture of information behaviour.

7.1.4 Reflections on wellbeing benefits on the WHW measured using the NEF/NHS 5 ways to wellbeing

Reflecting on the use of the NEF/NHS 5 Ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), the foremost thought was that it was very useful in grounding findings that can be hard to pin down and where subjectivity can be an issue. Further use of this as a framework would benefit information behaviour studies of a wide range of activities in life, particularly serious leisure pursuits. There were many findings in this study related to the physicality of walking the route, as well as the social interactions it provided. It is a reasonable assumption that there may be findings in further studies of sports and physical activities, as well as any hobby or activity that has a degree of sociability, that could point to the wellbeing benefits of these pursuits. Doing so gives the opportunity for information behaviour studies to have reach beyond the field, by offering recommendations to the provision of

information about activities that can enhance wellbeing for all. As with looking at embodied information, there were personal doubts about how to relate positive mental wellbeing benefits and findings related to contemplation that would be valid for this thesis. These concerns were eased by the adoption of this framework to give them definition and structure.

I believe that looking at the social benefits of serious leisure pursuits could be a fruitful endeavour for future studies. These types and means of sharing information about a hobby or activity could generate rich findings, but also point to the enrichment of people's lives by adding to their wellbeing. The social connections that were so evident amongst hikers on the WHW was another personal highlight of the research project and being able to capture some of them amongst the participants in this study was very rewarding. This echoed with my experience of walking the route the first time in a non-data gathering capacity.

As with the use of Hektor's information behaviour model (Hektor, 2001), there is an issue with whether prominence of certain findings gets lost amongst putting findings related to the 5 ways on an equal footing. With this study, there were more in-depth findings related to the connect, take notice and learn stages than the others. Within these, there were interesting findings related to the positive social interactions along the route, positive mental wellbeing benefits related to contemplation and engagement with the cultural heritage of the WHW that were prominent. Care is needed in reporting these, so that they fit within the stages but are described in enough detail to ensure their importance is not diminished by flatly reporting all stages as equal.

One important reflection I had on this aspect of the research was that the personal wellbeing benefits were evident not just in participants but for myself as well. This started from increasing my participation in walking as a serious leisure activity, then in walking the WHW in a non-data gathering capacity, as well as both of my field trips to the WHW to conduct data gathering. Talking about the research through the recruitment and interview process allowed me to make social connections with fellow walkers that were memorable. On the WHW, I have experienced connections, being active, taking notice and learning, while hopefully being able to give by reporting on participant's experiences on the WHW. Doing research of this type, at this level and

beyond can be stressful and having the research topic itself provide succour to a researcher is valuable. This obviously comes with the caveat that there is a risk in being immersed in the topic and having a personal conception of wellbeing benefits related to an activity creating a bias in reporting. However, this can be mitigated by acknowledging this risk, thinking reflexively about the topic and opening the research up to scrutiny from fellow academics not immersed in the activity. Being open to lines of enquiry that can bring wellbeing to researchers through the process should be encouraged.

Another thing to note in this regard is that obviously not all research topics are going to present these opportunities for experiencing wellbeing benefits. Looking at serious events in life will be difficult for researchers as well as participants and the reward for researchers is perhaps different, taking satisfaction in knowing that research is shining a light on an unreported matter, or by providing findings that make a real-world difference to difficulties experienced by people. This mirrors the balance in reporting on different topics in the field of information science highlighted in the call to consider higher things and serious leisure, as well as serious life events and work practices. Perhaps looking at these positive aspects of life can be seen as a balance to studying more difficult areas.

When considering future avenues for looking at wellbeing, I feel that care should be taken to be inclusive and that future work should consider barriers to wellbeing. There is a possible link between experiencing barriers to information and experiencing barriers to personal wellbeing that research could uncover and seek to remedy, using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) could help structure this. Another possible avenue for looking at wellbeing benefits using this framework would be to use it for the consideration of contemplation in activities from an information behaviour viewpoint. Findings on this topic could be challenging to report, use of the framework can add validity. The links between the learn stage of the framework and cultural heritage were also of note and suggest that further research looking at cultural heritage could seek to further strengthen understanding of this. Doing so would allow cultural heritage organisations to better pitch the importance of their activities to outside stakeholders and funders by pointing to the wellbeing benefits present in cultural heritage activities. One other reflection on future directions for using this framework would be

to look at an area of life that may contain more evidence of the giving stage, while there was some present in this study, looking at activities such as volunteering may provide richer findings.

Again, as with embodied information a nuanced view of reporting on wellbeing benefits is needed, some aspects of activity can be described as challenging or uncomfortable at a micro level, like tough sections of the path, but beneficial at a macro level, participant's perceptions and experience overall.

Ultimately, uncovering and reporting findings related to personal wellbeing was very rewarding and another personal highlight of the research project, improving my personal wellbeing in the process.

7.1.5 Reflections across the findings

So far, this chapter has focused on the use of the three different concepts and frameworks used to analyse the findings in this thesis, this section will provide reflections across and between the use of them. When considering embodied information and Hektor's information behaviour model (Hektor, 2001) together, there was some useful overlap in some of the findings related to embodied information being classified in Hektor's model. This allowed for some embodied information to be placed within an existing information behaviour model, lending it some validity. However, the types of embodied information most easily classified using Hektor's model (Hektor, 2001) were more functional in nature and if that model had been used on its own, it may have lessened the impact of reporting on all the embodied information present in the activity in its own right. As discussed in the reflections on Hektor's information behaviour model (Hektor, 2001), it is perhaps best utilised in conjunction with more complex concepts, giving space for them to be reported separately but still giving research a solid backbone of reportable information behaviour.

When reflecting on the consideration of embodied information and wellbeing benefits measured using the NEF/NHS 5 Ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), there are clear links between the two. The sensory information from the environment as people walked the WHW was commonly linked to connecting with nature and with taking notice of their surroundings. Using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) as a

framework allowed for the development of how this form of embodied information is used for a positive outcome. This does suggest that future studies looking at embodied information in a natural environment rich with sensory information like the WHW should consider using this framework to describe findings related to positive mental wellbeing benefits. Adoption of the NEF/NHS 5 Ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) may also open up opportunities to look at contemplative activities from an information science perspective, particularly those such as meditation which would also incorporate forms of embodied information.

Reflecting on the overlap between Hektor's information behaviour model (Hektor, 2001) and use of the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011), there was an interesting link between low information needs helping to generate positive mental wellbeing. Although the findings around low information needs on the WHW emerged inductively outwith the analysis using Hektor's model, they were of significance to the field of information behaviour studies. Much of the information needed for the activity was relatively functional and found easily through simple searching and browsing techniques in sources such as the West Highland Way website, social media and in guidebooks, this created the information environment where hikers mainly just had to concentrate on following the path and knowing where they were staying and eating at the end of the day. That this represents a break from everyday life in complex and dense information settings like work, or in the broad depth of available internet resources, suggests that walking the WHW is akin to an information holiday. This departure from everyday life links with considering the activity a higher thing and suggests that one form of higher thing in modern life is to seek rest from high intensity information settings.

Considering the use of all three frameworks together has brought the reflection that, together, they have created a path for this thesis. Looking at embodied information and wellbeing benefits through the NEF/NHS 5 ways (New Economics Foundation, 2008;Aked, 2011) were both rich seams of discovery but relatively novel in the field, using Hektor's information behaviour model (Hektor, 2001) acted as a bridge by linking both to functional and clearly defined forms of information behaviour. This allowed for the more complex findings around embodied information and wellbeing to stand on their own, illuminating the activity of hiking the WHW and hopefully paving the way for future work in both areas.

8. Recommendations and conclusions

This final chapter aims to give recommendations on how the findings of this thesis could be helpfully used beyond the scope of academia, proposes future work to develop on the findings of this thesis and looks to draw conclusions on this study related to the research questions selected at the start.

8.1 Recommendations

Some of the findings from this study point to actions that could be taken by bodies responsible for the WHW and for other long-distance walking routes in Scotland and beyond. The findings around wellbeing and cultural heritage are most pertinent to these recommendations, including: seeking cultural heritage route status for the WHW; the promotion, running and maintenance of other long-distance walking routes in Scotland and highlighting the specific wellbeing benefits uncovered in this study to promote the WHW and other long-distance walking routes.

8.1.1 Cultural heritage route status for WHW

Emerging from the findings related to the wellbeing benefits of walking the WHW using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) was how the route represented an opportunity to learn, particularly in a cultural heritage sense. Participants spoke of walking the WHW to experience some of Scotland's most iconic scenery, to immerse themselves in the historic heritage of sections of the route, to have a cultural exchange with fellow walkers and to experience local culture through food and drink, as well as interacting with local people and businesses. This helps situate the WHW as a cultural experience of great value to those who walk it.

These characteristics of the WHW situate it as being considered a European Cultural Route, as set out by the Council of Europe (Council of Europe, 2021). They are similar in nature to the St. Olav's Way in Norway for example (Jørgensen *et al.*, 2020), which has already received this status. It is therefore recommended that the body responsible for managing the WHW should consider applying for recognition as a European Cultural Route. Doing so would elevate the international recognition of the WHW, strengthen cultural ties with Europe that have been weakened as a result of the UK leaving the European Union, strengthen the ability to preserve the natural

heritage of the route in keeping with this status and promote businesses which are an important part of the local economy. Successfully gaining this accreditation could pave the way for other long-distance walking routes in Scotland, such as the Great Glen Way, Southern Upland Way or Hebridean Way to apply.

8.1.2 Dissemination of information for other long-distance routes in Scotland

From this study, another recommendation is for organisations with responsibility for other long-distance walking routes in Scotland to replicate some of the factors which participants identify as positive in their WHW experience. The low information needs identified in the findings showed that by not needing much information during their journey, participants were able to engage with their surroundings in a more meaningful way. This was mainly due to the ease of finding relevant information about walking the route, such as accommodation, itineraries, tour companies and baggage transfer services, as well as a clearly signposted path. These are basic, functional services but making them as easy to use as possible helps to create low information needs for walkers, which in turn can help boost wellbeing benefits present in the activity by allowing them to switch off from high information environments online and concentrate on their natural surroundings. Organising bodies should concentrate on the efficient and effective dissemination of information about their route, this can help create a virtuous cycle where hikers will be able to have a positive experience without requiring much information during their journey. They can then relay these positive experiences in real-life social networks and online to others who will be encouraged to seek a similar experience, which in turn can help promote natural growth for the route to support local businesses and promote the natural and cultural heritage of the routes.

8.1.3 Wellbeing benefits of walking the WHW disseminated in information about the route

A final recommendation based on the findings in this thesis is that the wellbeing benefits identified in the data using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) could be used to help promote the WHW. In disseminating information about the WHW, it could be useful in attracting walkers to highlight the wellbeing benefits identified, primarily: meaningful social connections with fellow walkers and with family and friends away from the route; memorable

natural connections and improved mental wellbeing through taking notice of the environment; being active through a physical challenge and having an immersive cultural heritage experience. This could help improve walker's experiences by being aware of these benefits and being open to them. This, in turn could help reinforce walker's positive memories of the walk, helping to attract new and repeat visitors seeking to experience these wellbeing benefits. While these reported benefits are based on studying the WHW, they may well be evident in other long-distance walking routes, as research on Camino de Santiago and St. Olav's Way has shown (Slavin, 2003;Jørgensen *et al.*, 2020;Innocenti, 2023), therefore they could be used to promote other long-distance walking routes in Scotland and beyond.

8.2 Extensions of research

From this study there are a number of different avenues for future work to develop and build on knowledge explored in this research. These include: looking at other long-distance hiking routes; looking at activities that could be classified as a secular pilgrimage; exploring other physical activities, as well as creative pursuits and other lines of work for embodied information; and other serious leisure activities where wellbeing benefits are present.

8.2.1 Research on other long-distance hiking routes

Through this, and other research on long-distance hiking routes in Scotland and in Europe (Hyatt *et al.*, 2021;Innocenti, Hyatt and Harvey, 2022;Innocenti, 2023), an understanding is being built of the activity from an information science perspective. For this research area to grow, it is important to carry out studies on other long-distance hiking routes, with many possibilities available. Within Scotland, there are a number of other long-distance walking routes, such as the Rob Roy Way, St. Cuthbert's Way and the Fife Coastal Path to give some examples. The number of possibilities grows enormously when you consider the number of long-distance routes internationally. The study of routes in other continents such as Africa, South America or Asia would widen the scope of research in this area and provide a more diverse range of experiences. Both walking pilgrimage routes and cultural heritage routes, or a combination of them, are ripe for exploration from an information science perspective. This could be done by further exploring embodied information, wellbeing

benefits or by utilising a different framework to explore the information behaviour of hikers on these routes.

8.2.2 Secular pilgrimage

Another avenue for future work would be to look at activities more readily identifiable as secular pilgrimages from an information science perspective. There has been illuminating research conducted on religious pilgrimage to Hajj (Caidi, Beazley and Marquez, 2018;Caidi, 2019;Caidi, 2020;Caidi, 2023), as well as walking pilgrimage on Camino de Santiago (Innocenti, 2023) and the St. Olav's Way (Jørgensen *et al.*, 2020). Looking at pilgrimage based on non-religious motivations or heritage would expand knowledge on the concept of pilgrimage in information science. Prime examples would be sites of cultural significance, such as famous restaurants, renowned music venues and iconic filming locations. This could present interesting opportunities to explore areas of fandom that could be linked to the concept of serious leisure, where being a fan of something becomes a hobby and an important part of someone's life and identity. Another potentially fruitful area of secular pilgrimage would be to study people who visit a location to engage with their ancestors' history, a personal form of cultural heritage. While it was not possible to fully explore the concept of secular pilgrimage in this study, these potential future lines of enquiry would present opportunities to do so.

8.2.3 Further work on embodied information

A primary focus of this study has been to explore the embodied information present in walking the WHW, there are a number of further paths that could lead to discovery of new findings in this concept, as suggested in the original call to explore the topic (Cox, Griffin and Hartel, 2017). One of these would be to look at other physical activities beyond long-distance walking. Previous research has touched on running (Hockey, 2004;Hockey, 2006;Hockey, 2013;Hockey and Allen-Collinson, 2013;Gorichanaz, 2015), but some obvious examples of other activities and sports would be to look at are cycling, rock climbing, caving or kayaking. Indeed using Stebbin's work on Nature Challenge Activities (Davidson and Stebbins, 2011) as a guide would present a number of interesting possibilities. Further to this is the suggestion that team sports should be studied, within these activities there would likely be more findings related to embodied information from others. While these

suggestions cover many activities that could be classified as serious leisure pursuits, future studies could look to elite sports, where the competitive use of embodied information from the environment, from within, from others and recorded using technology may have findings that could develop knowledge in this concept.

Another area ripe for further investigation is creative pursuits and lines of work that rely on embodied information. Previous work on DJing (Munro, Ruthven and Innocenti, 2023) showed how embodied information is central to the act, looking at other creative activities with a performance component, such as theatre or stand-up comedy, could bring forth new knowledge on the concept. Further to this, creative practices without a performance component such as painting, sculpture and photography could all provide fruitful discovery in embodied information. While previous research has looked at embodied information in the course of medical work (Lloyd, 2009;Lloyd, 2010;Bonner and Lloyd, 2011;Lloyd, 2014), there are other professions which may reveal interesting uses of embodied information. Chefs, sommeliers and whisky distillers, for example, would all require visual, olfactory and gustatory information from their processes as a key part of their work and could reveal fascinating examples of embodied information.

Finally, an important area for future studies to consider would be to look at embodied information in a library or other information service context. Doing so could provide a bridge between exploring the concept of embodied information from an academic perspective and finding real-world applications for improving the provision of information for patrons of these services. Building on the concept of how embodied information from within can be affected by your surroundings or activities (Keilty, 2012;Lueg, 2014;Lueg, 2015;Keilty, 2016), research could consider how physical and online spaces where information services are provided affect users, with a particular focus on groups and communities who may be adversely affected and therefore suffer from barriers to information. This would help strengthen the validity of the concept in the field by helping to enable access to information for all.

8.2.4 Further work on activities with wellbeing benefits

Another primary focus of this research has been on the wellbeing benefits present in the activity, using the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) to structure findings in relation to information behaviour. Further

work looking at wellbeing benefits using the same framework, or another, could find more findings by looking at other physical activities and, much like future work on embodied information, could focus on outdoor pursuits undertaken in natural environments, developing understanding of how nature can inform wellbeing. A key finding of this research was how low information needs on the WHW led to positive mental wellbeing benefits, by providing a break from every day high information environments, allowing for improved mental health and rewarding thought processes. This is another area that is ripe for further investigation, to see where other instances of low information needs have a similar positive impact on wellbeing.

Again, as with further work on embodied information, a focus on creative pursuits and other associated serious leisure activities would be beneficial in pointing to the value they bring to people and to society, helping information science studies to have a reach beyond the field. Within looking at these areas of serious leisure activities, and possibly higher things, future work considering wellbeing benefits could find rich findings related to social connections, and social sharing of information that these facilitate. Like embodied information, this softer form of information is one that information science should seek as full an understanding of as possible to provide a holistic view of human information behaviour and needs. Indeed, given the links between embodied information and wellbeing benefits in this study, future work considering both in tandem would be of great benefit to the field.

8.3 Conclusions

This final chapter has made recommendations for the promotion and maintenance of long-distance walking routes in Scotland and laid out potential future studies based on the topics of this thesis. Finally, in this section conclusions are drawn based on the research questions posed at the beginning of this thesis.

Firstly, this thesis has explored how embodied information was experienced by long-distance walkers and the conclusions are that hikers on the WHW use four types of embodied information: environmental embodied information, embodied information from within, embodied information from others and embodied information from technology. This develops new understanding of embodied information in a physical pursuit, in this case a serious leisure NCA (Davidson and Stebbins, 2011), answering the call for information behaviour studies to consider embodied

information (Cox, Griffin and Hartel, 2017). Within these, environmental embodied information included sensory information from the natural surroundings as participants walked: visual, somatosensory, auditory, olfactory and gustatory. The WHW was a rich field of environmental embodied information and participants described how this had made their journeys memorable and even meaningful. Taking in this form of natural experiential embodied information therefore places the activity as a higher thing (Kari and Hartel, 2007).

Embodied information from within was an important form of monitoring personal health and fitness during the journey, a key part of being able to complete the journey. Embodied information from others was characterized by being aware of the health and fitness of fellow walkers, not in a competitive manner, but in seeking to offer help and support where needed. Embodied information recorded using technology had functional aspects but was also key to memory making for participants, using it to journal their experience and to share with family and friends away from the WHW.

What these findings show is that long-distance hikers on the WHW experience embodied information in a number of different ways that are central to the activity, as posited in the call to further explore embodied information (Cox, Griffin and Hartel, 2017), and that this is not just a functional form of information, but one that creates a memorable lived experience. These findings help further studies in this area by giving a richly detailed description of embodied information in this activity.

The second research question that this thesis considered was how do long-distance walkers seek, gather, and share information in situ. Using Hektor's model (Hektor, 2001) to analyse the information behaviours, as posited to be a helpful means of classifying information behaviour in serious leisure studies (Hartel, Cox and Griffin, 2016) was selected. Emerging inductively from the thematic analysis of information behaviour, using Hektor's model (Hektor, 2001), was the discovery that hikers on the WHW described low information needs while walking the route. Following the well signposted path, looking at a weather forecast, knowing where your accommodation for the evening was and finding places to eat were the primary concerns of walkers. This was related as running counter to everyday information needs at work, or other

areas in life, and provided respite from stressful, heavy load information environments, a form of information holiday.

In terms of findings related specifically to Hektor's information behaviour model (Hektor, 2001), much of the seeking, gathering and browsing occurred before the journey started in the planning stages of the activity, this was also related as a relatively easy task involving searching and browsing online sources and guidebooks. The main aim of this information seeking stage was needing to plan an itinerary and sometimes using a tour company to do so. Embodied information from within and embodied information from others was monitored for during participant's journeys, allowing them to assess their performance and ensure they were fit to complete it. Environmental embodied information was also found to be something that unfolded over the course of the WHW, constantly changing as the path progressed. Information about the route was exchanged during the journey, allowing for opportunities to connect socially with fellow walkers. Social information about people's experiences on the route were also exchanged. Participants sought to document their journey by dressing information about their journey, this typically took the form of recording their journeys using photographs and videos, but also included journaling their experiences for posterity. Finally, participants shared their journey with family and friends through a wide range of digital means, some privately and some publicly on social media. This was a key part of the experience of walking the WHW, being able to share their journey as they went with loved ones was a meaningful aspect to participants.

Use of Hektor's model (Hektor, 2001) in answering this research question was justified by providing detail of more functional information behaviours alongside the more conceptual areas of embodied information and wellbeing benefits. The most significant findings of this portion of the study were that the activity of walking the WHW was characterized by low information needs, taking the concept of information needs (Savolainen, 2012) and placing them in a novel context, a serious leisure activity where the low information needs were a contrast to everyday life, making it pleasurable and rewarding.

Lastly, this thesis looked at what were the connections between long-distance walkers' information behaviour and their wellbeing. To do this, the NEF/NHS 5 ways

to wellbeing were used as a frame for analysis (New Economics Foundation, 2008;Aked, 2011): connect, be active, take notice, learn and give. Using these stages, a number of wellbeing benefits from walking the WHW were identified and found to have links to information behaviour. Social connections over the course of the journey between fellow walkers and with family and friends away from the WHW were reported to have been a very rewarding and meaningful part of people's journeys. On the WHW, these social connections developed through regular interactions with fellow walkers on the path, with the sharing of information and experiences of the journey key to these strengthening over the course of the walk. Away from the WHW, these social connections with family and friends through sharing information about their journey was commonly described as having been a meaningful part of their experience. Being active was central to the activity of walking the WHW and it was found that meeting the physical challenge, while tough in stages, was a source of pride and accomplishment for participants.

Significantly, the take notice stage of analysis found there to be widespread discussion of a positive effect on mental wellbeing from walking the WHW. This was in part due to the low information needs related by participants, the walk provided people with a break from stressful high information work settings and allowed them to experience an information holiday where they felt more present and grounded in their experience. Environmental embodied information from the natural surroundings, as well as focusing on embodied information from within, also allowed participants to engage in positive, contemplative mindsets which positively impacted on their mental wellbeing.

Walking the WHW also gave participants a chance to learn as they walked by engaging with the cultural and natural heritage of the WHW. This was frequently described as a memorable or meaningful part of their journey and suggests that the WHW should be considered a cultural heritage route. Finally, participants described instances of giving on the WHW which can be described as a wellbeing benefit, of reciprocating help and support to fellow walkers as they walked, in turn helping to strengthen social connections.

Overall, there was strong evidence of a number of wellbeing benefits from walking the WHW according to the NEF/NHS 5 ways to wellbeing (New Economics

Foundation, 2008;Aked, 2011), most notably through strong social connections on the WHW and away from it, positive mental wellbeing benefits from engaging with the natural environment as they walked and in immersing themselves in the natural and cultural heritage of the WHW. This takes the use of the NEF/NHS 5 ways to wellbeing (New Economics Foundation, 2008;Aked, 2011) into a new domain and shows that they can be used to classify wellbeing benefits in information behaviour studies, offering opportunities to demonstrate how environmental embodied information, low information needs, social exchange of information and immersion in cultural heritage can enrich people's lives.

Through these research questions, the adopted methodology and discussion of the findings, this thesis has presented original insight into the information behaviour of hikers on the West Highland Way.

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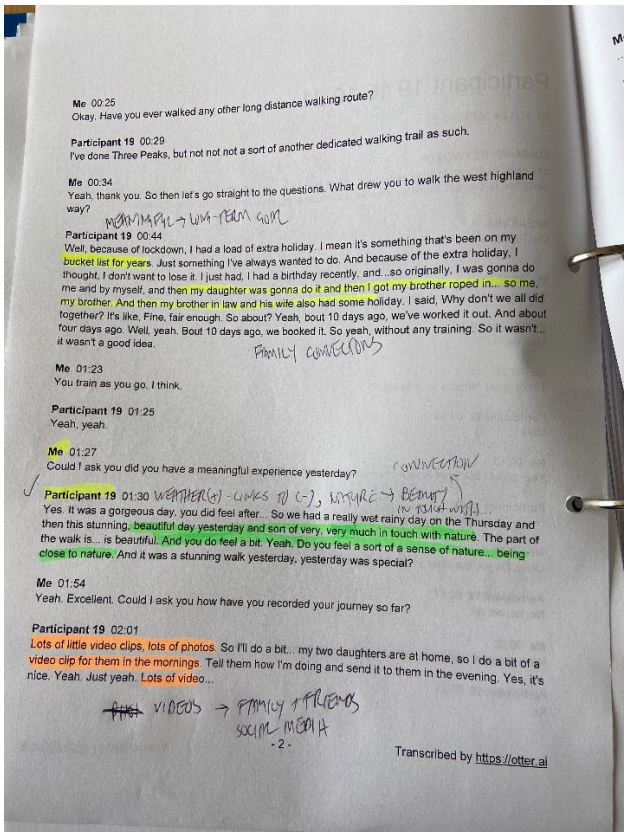
Appendices

Appendix A



Me 00:25
Okay. Have you ever walked any other long distance walking route?

Participant 19 00:29
I've done Three Peaks, but not not not a sort of another dedicated walking trail as such.

Me 00:34
Yeah, thank you. So then let's go straight to the questions. What drew you to walk the west highland way?

Participant 19 00:44
Well, because of lockdown, I had a load of extra holiday. I mean it's something that's been on my bucket list for years. Just something I've always wanted to do. And because of the extra holiday, I thought, I don't want to lose it. I just had, I had a birthday recently, and...so originally, I was gonna do me and by myself, and then my daughter was gonna do it and then I got my brother roped in... so me, my brother. And then my brother in law and his wife also had some holiday. I said, Why don't we all did together? It's like, Fine, fair enough. So about? Yeah, bout 10 days ago, we've worked it out. And about four days ago. Well, yeah. Bout 10 days ago, we booked it. So yeah, without any training. So it wasn't... it wasn't a good idea.

Me 01:23
You train as you go, I think.

Participant 19 01:25
Yeah, yeah.

Me 01:27
Could I ask you did you have a meaningful experience yesterday?

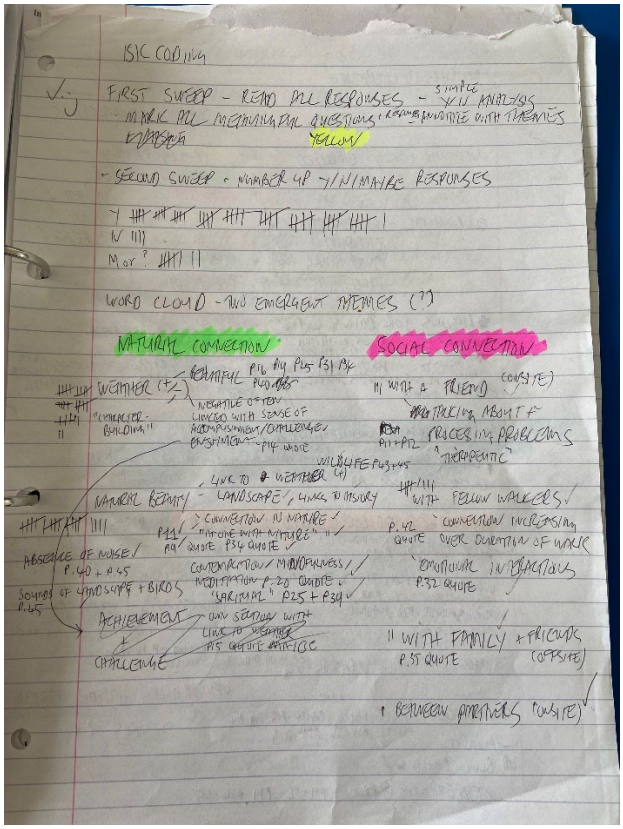
Participant 19 01:30
Yes. It was a gorgeous day, you did feel after... So we had a really wet rainy day on the Thursday and then this stunning, beautiful day yesterday and sort of very, very much in touch with nature. The part of the walk is... is beautiful. And you do feel a bit. Yeah. Do you feel a sort of a sense of nature... being close to nature. And it was a stunning walk yesterday, yesterday was special?

Me 01:54
Yeah. Excellent. Could I ask you how have you recorded your journey so far?

Participant 19 02:01
Lots of little video clips, lots of photos. So I'll do a bit... my two daughters are at home, so I do a bit of a video clip for them in the mornings. Tell them how I'm doing and send it to them in the evening. Yes, it's nice. Yeah. Just yeah. Lots of video...

- 2 -

Transcribed by https://otter.ai



Digital recreation of code book photo

ISIC Coding

First sweep – read all responses – simple y/n analysis

- Mark all meaningful questions + responses yellow – annotate with themes

- Second sweep – number up y/n/maybe responses

Y IIIII IIIII IIIII IIIII IIIII IIIII IIIII IIIII IIIII I

N IIII

M or ? IIIII II

Word cloud – two emergent themes?

Natural Connection

Weather (+/-) IIIII IIIII IIIII IIIII IIIII I

Beautiful – P16, P19, P25, P31, P34 & P40

Negative often linked with sense of accomplishment/challenge/enjoyment – P14 quote

"character-building"

Natural beauty IIIII IIIII IIIII IIII - link to landscape /link to weather/ link to wildlife/ links to history

Connection to nature

P11 "at one with nature" P19 quote P34 quote

Contemplation/mindfulness/meditation

P20 quote "spiritual" P25 + P39

Absence of noise P40 + P45

Sounds of landscapes and birds P45

Social connection

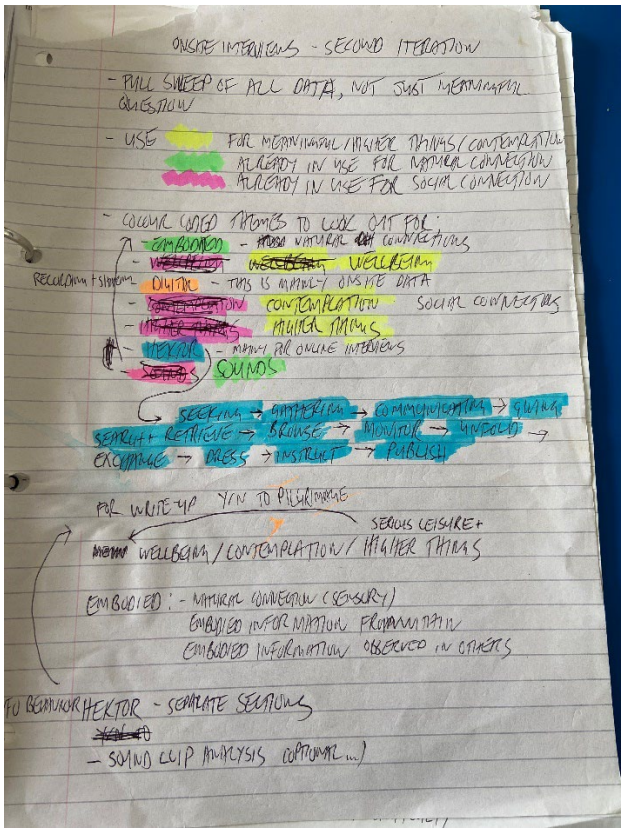
With a friend (onsite) III – talking about + processing problems- P11 +12 "therapeutic"

With fellow walkers IIIII IIII – Connection increasing over duration of walk P42 quote

Emotional interactions – P32

With family + friends (offsite) II P35 quote

Between partners (onsite) I



Digital recreation of code book photo

Onsite interviews – second iteration

- Full sweep of all data, not just meaningful question

- Use _____ for meaningful/higher things/contemplation

  _____ already in use for natural connection

  _____ already in use for social connection

- Colour coded themes to look out for:

  - Embodied
  - Wellbeing
  - Digital
  - Contemplation
  - Higher things
  - Hektor – mainly for online interviews
  - Sounds

Seeking -> gathering -> communicating -> giving ->

Search + retrieve -> browse -> monitor -> unfold -> exchange -> dress -> instruct -> publish

For write-up y/n to pilgrimage

Wellbeing/contemplation/higher things + serious leisure

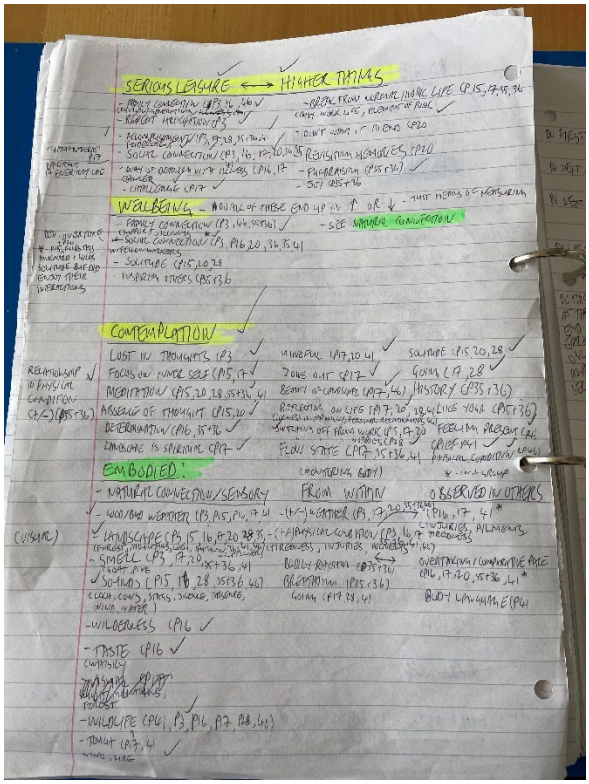
Embodied: - natural connection (sensory)

Embodied information from within

Embodied information from others

Info behaviour – Hektor – separate sections

- sound clip analysis (optional…)



Digital recreation of code book photo

Serious leisure ←→Higher things

- Family connection (multiple generations) (P3, 16 + 46)

- Repeat participation (P3)

- Accomplishment/achievement (P3, 17, 28, 35 + 36, 41)

- "Camaraderie" P 17

- Social connection (P3, 16, 17, 20, 36, 35, 41)

- Way of dealing with illness/cancer (P16, 17)

- Challenge (P17)

- Break from normal/work life (busy work life, element of risk) (P15, 17, 35, 36)

- Don't want it to end (P20)

- Revisiting memories (P20)

- Fundraising (P35 +36)

-Joy (P35 +36)

Wellbeing (do all of these end up in above section or in natural connection? Just means of measuring)

- Family connection (support/illness) (P3, 46, 35 + 36)

- Social connection w/fellow walkers (P3, 16, 20, 36, 35, 41) – develop over time P20 – *finds this awkward + likes solitude but did enjoy their interactions P15

- Solitude (P15, 20, 28)

- Inspiring others (P35 +36)

Contemplation

Lost in thoughts (P3) Mindful (P17, 20, 41) Solitude (P15, 20, 28)

Focus on inner self (P15, 17) Zone out (P17) Going (P17, 28)

Meditation (P15, 20, 28, 35 + 36, 41) Beauty of landscape (P17, 46) History (P35 + 36)

Absence of thought (P15, 20) Reflecting on life (illness in family, personal relationships) (P17, 20, 28, 41, 46) Like yoga (P35 + 36)

Determination (P16, 35 + 36) Switching off from work/worries (P15, 17, 20, 28) Feeling present (P4)

Landscape is spiritual (P17) Flow State (P17, 35 + 36, 41) Grief (P4) Physical condition (P46) Relationship to physical condition (+/-) (P35 + 36)

Embodied:

- Natural connection/sensory

- Good/bad weather (P3, 15, 16, 17, 41)

-Landscape (Visual) (Forest, mountains, lochs, autumn, wildflowers) (P3, 15, 16, 17, 20, 28, 35, 36, 41, 46)

- Smell (Goat, pine) (P3, 17, 20, 35 + 36, 41)

- Sounds (Lochs, cows, stags, silence, absence, wind, water) (P15, 16, 28, 35 + 36, 46)

- Wilderness (P16)

- Taste (Whisky) (P16)

- Wildlife (P41, 3, 16, 17, 28, 40)

- Touch (Wind, fire) (P17, 41)

From within

- (+/-) weather (P3, 17, 20, 35 + 36, 46)

- (+/-) physical condition (tiredness, injuries, ailments) (P3, 16, 17, 35, 36, 41, 46)

- Bodily rhythm (P35 + 36)

- Breathing (P35 + 36)

- Going (P17, 28, 41)

Observed in others

- (+/-) physical condition (Injuries, ailments, tiredness) (P16, 17 41)
- Overtaking/comparative pace (P16, 17, 20, 35 + 36, 41)
- Body language (P41)

Appendix B

Participant Information

PhD Computer and Information Science

Working title – An exploration of the information behaviour of walkers on the West Highland Way

Introduction

As part of studying for a PhD in Computer Information and Library Sciences, I am seeking participants to interview so they can share their thoughts, opinions and experiences of walking the West Highland Way (WHW). The focus of the interviews will be to explore your information behaviour related to your journey, your sensory perceptions of walking the route and what you think about while you are walking the route. This research can enrich understanding of the information behaviours of hikers and aid better provision of information to them, as well as assist in the design of more useful information systems. If you have any questions regarding your participation, please contact myself at keith.munro@strath.ac.uk .

What is the purpose of this research?
Walkers on the WHW have not previously been considered from the field of information science and the aim of this research is to explore the information behaviour of hikers on the route. This research aims to fill this gap in the knowledge by trying to classify the information behaviours of hikers on the WHW, to establish how they may use and interpret embodied information during their journey and how contemplation during the activity may lead to positive mental wellbeing benefits.

Do you have to take part?
No, participation in this process is voluntary and there is no obligation to take part. Participants have the right to withdraw from the research at any stage.

What will you do in the project?
You are invited to participate in an audio recorded interview during which you will be asked for some demographic data, followed by some questions about your West Highland Way experiences so far. The demographic data and interview questions will be recorded using a portable audio recording device and will be anonymised.

Why have you been invited to take part?
You have been invited to take part as you are walking the West Highland Way and therefore have valuable insight to offer into the research being conducted.

What information is being collected in the project?
From the interview basic demographic data such as age, gender and nationality will be collected, followed by qualitative data of your thoughts, opinions and experiences of the walk so far. Audio recordings will be made of the interview, these will be logged and stored anonymously on secure

University of Strathclyde servers. Audio recordings will be deleted at the end of the PhD project, scheduled to be September 2023. No other personal data will be recorded.

Who will have access to the information?
As a researcher, I will have access to the demographic and thematic data but this will not be shared with anyone else until it has been anonymised. During the data analysis stage, PhD supervisors will read drafts for feedback but the data will have been anonymised by this stage. Once written up any public version will feature only anonymised data with nothing to identify individual participants. Anonymised versions of the data will be shared to the Knowledge Base Research Information Portal, a repository for research data run by the University of Strathclyde to aid accessibility in research data, again no personally identifying data will be shared. If there are any questions, please contact the first PhD supervisor; Dr Perla Innocenti, perla.innocenti@strath.ac.uk

Where will the information be stored and how long will it be kept for?
Information will be anonymised and stored securely on University of Strathclyde servers in line with GDPR regulations for the duration of the PhD studentship, scheduled to end in September 2023. The anonymised demographic and interview data will be included in the analysis portion of any future published work. Any personalised information such as consent forms or audio recordings will be deleted at the end of the PhD project. Anonymised interview data will also be stored on the University of Strathclyde Knowledge Base Research Information Portal, for open access research data.

Assignment Approval
This project and the survey methods involved has been ethically approved by the University of Strathclyde Computer and Information Science Ethics Committee.

Chief Investigator details:
This research was granted ethical approval by the University of Strathclyde Computer Science Departmental Ethics Committee. If you have any questions or concerns, during or after the research, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact either the Departmental Ethics Committee or the Chief Investigator:

Secretary to the Departmental Ethics Committee
Department of Computer and Information Sciences,
Livingstone Tower
Richmond Street
Glasgow
G1 1XH
email: ethics@cis.strath.ac.uk

Chief Investigator;
Dr Perla Innocenti
Room 1203
Livingstone Tower
Richmond Street
Glasgow
G1 1XH

Email: perla.innocenti@strath.ac.uk

Appendix C

Consent Form

PhD Computer and Information Sciences Study

Working title - An exploration of the information behaviour of walkers on the West Highland Way

I confirm that I have read and understood the Participant Information Sheet for the above project and the researcher has answered any queries to my satisfaction. ☐ (Please tick here)

I confirm that I have read and understood the Privacy Notice for Participants in Research Projects and understand how my personal information will be used and what will happen to it (i.e. how it will be stored and for how long). ☐ (Please tick here)

I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences. ☐ (Please tick here)

I understand that I can request the withdrawal from the study of some personal information and that whenever possible researchers will comply with my request. This includes the following personal data:

- audio recordings of interviews that identify me;
- my personal information from transcripts. ☐ (Please tick here)

I understand that anonymised data (i.e. data that does not identify me personally) cannot be withdrawn once they have been included in the study. ☐ (Please tick here)

I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available. ☐ (Please tick here)

I understand that my anonymised data will be shared on the University of Strathclyde Knowledge Base Research Information Portal. ☐ (Please tick here)

I consent to being a participant in the project. ☐ (Please tick here)

I consent to being audio recorded as part of the project Yes/No

PRINT NAME	
Signature of Participant: Contact details (if you want information sheet emailed to you):	Time and date: Participant number:

Appendix D

Demographic questions

1. Which age group do you belong to?
   (a) 18-25
   (b) 26-35
   (c) 36-45
   (d) 46-55
   (e) 56-65
   (f) 65+

2. What is your gender?

3. What is your nationality?

4. Where is your current place of residence?

5. Have you ever walked the West Highland Way before?

   (a) Yes
   (b) No

6. Have you ever walked any other long-distance walking route?
   (a) Yes
   (b) No

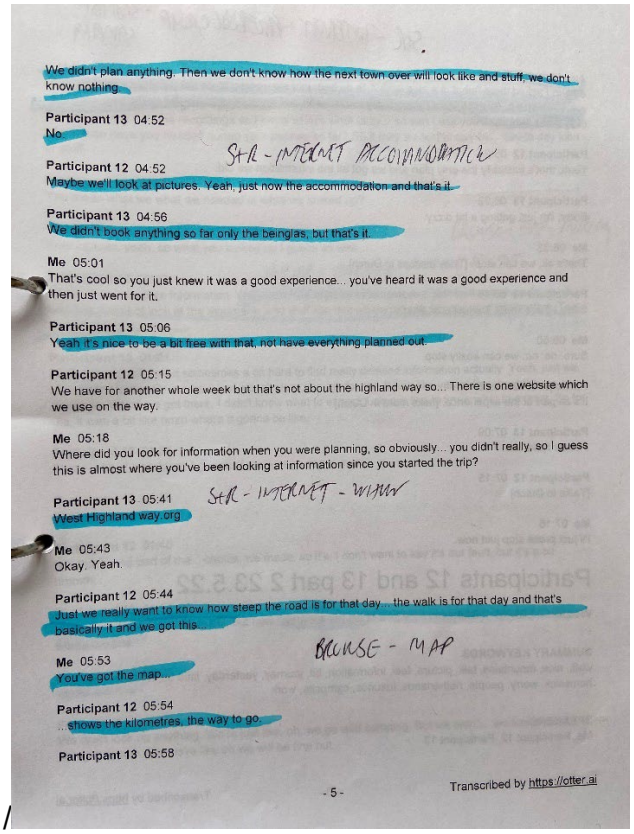
7. If so, which one(s)?

Interview questions

1. What drew you to walk the West Highland Way?
2. What has been memorable or meaningful about your journey so far?
3. How did you plan your journey?

4. Where did you look for information when you were planning?
5. What information have you needed during your journey so far?
6. How have you recorded your journey so far?
7. How have you shared your journey so far?
8. How have you interacted with fellow walkers?
9. Has anything memorable occurred on your journey so far based on a sensory experience?
10. What have you thought about as you have walked so far?
11. What have you noticed about your natural surroundings as you have walked?
12. Have you been monitoring your physical condition during your journey?
13. Have you noticed anything about the physical condition of fellow walkers?
14. Would you say you have felt any positive or negative effects on your state of mind since starting your journey?
15. What are you looking forward to for the rest of your journey?

Appendix E



We didn't plan anything. Then we don't know how the next town over will look like and stuff, we don't know nothing.

Participant 13 04:52
No.

Participant 12 04:52
Maybe we'll look at pictures. Yeah, just now the accommodation and that's it.

Participant 13 04:56
We didn't book anything so far only the beinglas, but that's it.

Me 05:01
That's cool so you just knew it was a good experience... you've heard it was a good experience and then just went for it.

Participant 13 05:06
Yeah it's nice to be a bit free with that, not have everything planned out.

Participant 12 05:15
We have for another whole week but that's not about the highland way so... There is one website which we use on the way.

Me 05:18
Where did you look for information when you were planning, so obviously... you didn't really, so I guess this is almost where you've been looking at information since you started the trip?

Participant 13 05:41
West Highland way org.

Me 05:43
Okay. Yeah.

Participant 12 05:44
Just we really want to know how steep the road is for that day... the walk is for that day and that's basically it and we got this.

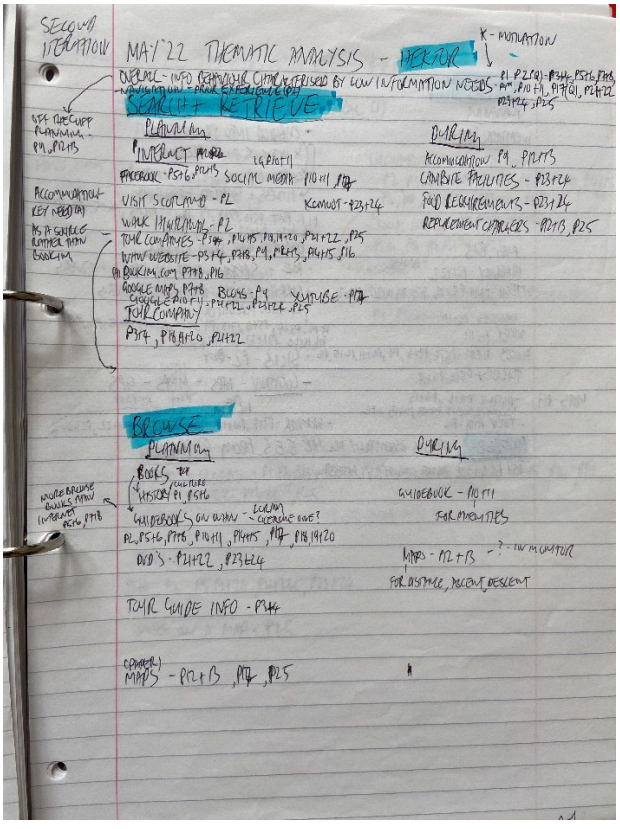
Me 05:53
You've got the map...

Participant 12 05:54
...shows the kilometres, the way to go.

Participant 13 05:58

- 5 -

Transcribed by https://otter.ai



Digital recreation of code book photo

Second iteration – May '22 Thematic analysis – Hektor

Overall – info behaviour characterised by low information needs – navigation, prior experience (P2) * - motivation – P1, 2 (Q), P 3+4, 5+6, 7+8, 9*, 10+11, 17 (Q), 21+22, 23+24, 25

Off the cuff planning (P9, 12 +13)

Search + retrieve

Planning

Internet

Facebook (P5+6, 12+13) Social media – IG (P10+11)

Visit Scotland (P2) Komoot (P23+24)

Walk Highlands (P2)

Tour companies (as a source, as well as for bookings) (P3+4, 14+15, 18, 19 +20, 21+22, 25)

WHW Website (P3+4, 7+8, 9, 12+13, 14+15, 16)

Booking.com (P7+8, 16)

Google maps (P7+8) Blogs ((P9) YouTube (P17)

Google (P10+11, 21+22, 23+24, 25)

Tour company

(P3+4, 18,19 +20, 21+22)

During

Accommodation (P9, 12+13)

Campsite facilities (P23+24)

Replacement chargers (P12+13, P25)

Browse

Planning

Guidebooks/books (Loram/Cicerone one?) P2, 5+6, 7+8, 10+11, 14+15, 17, 18, 19 +20)

History/culture (P1, 5+6)

DVD's (P21+22, 23+24)

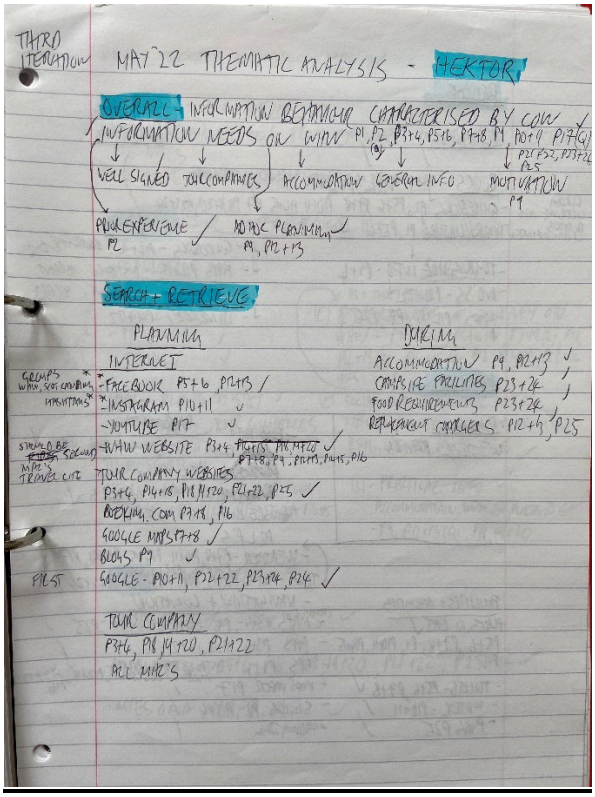
Tour guide info – P3+4

(Paper) Maps – (P12+13, 17, 25)

During

Guidebook – for amenities – P10+11

Maps – for distance, ascent, descent – P12 +13 - ? in monitor



Digital recreation of code book photo

Third iteration May'22 Thematic analysis – Hektor

Overall – Information behaviour characterised by low information needs on WHW P1, 2 (Q), 3+4, 5+6, 7+8, 9, 10+11, 17 (Q), 21+22, 23+24, 25

Well signed/ Tour companies/ Accommodation/ General info/ Motivation (P9)/ Prior experience (P2)/ Ad hoc planning (P9, 12+13)

Search + retrieve

Planning

Internet

-Facebook (Groups - WHW, Scot camping) P5+6, 12+13

-Instagram (Hashtags) P10+11

-YouTube P17

-WHW website P3+4, 7+8, 9, 12+13, 14+15, 16

-Tour company websites (Mac's, Travel Lite) P3+4, 14+15, 18,19 +20, 21+22, 25

Booking.com P7+8, 16

Google maps P7+8

Blogs P9

Google P10+11, 21+22, 23+24, 25

Tour company

P3+4, 18, 19 + 20, 21+22 (All Mac's)

During

Accommodation P9, 12+13

Campsite facilities P23+24

Food requirements P23+24

Replacement chargers P12+13, 25