

Two phenomenological studies of place

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We introduce our initial investigations into the phenomenology of place as part of the BENOGO project. BENOGO is concerned with giving people the experience of ‘being there without going there’. Employing a state-of-the-art mixture of photorealistic, real time rendered images, three-dimensional soundscapes and augmented reality to create a sense of place. The work reported in this paper we describe as ‘benchmarking’, that is, establishing how people experience and describe places in the real world. We then will be able to compare the BENOGO experience with these benchmarks. This approach should be seen to be more naturalistic and relevant than the use of *post hoc* presence questionnaires

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1 Introduction

Phenomenological studies of place may, at first sight, seem a little unconnected with human-computer interaction. However, as we hope to demonstrate, they are not. As virtual reality (VR) technology matures then the design of its application, as distinct from its ability to solve computation problems become more important. One important aspect of the use of VR is to create a sense of place as distinct from an impression of three dimensional space alone. While the latter is an ‘external’, coordinated based conception, the former is personal, subjective and filled with meaning. Harrison and Dourish (1996) have also distinguished between the two in the context of designing for collaboration. Space can be described and proscribed using geometry, place may, among other ways, be understood phenomenologically.

Dennett in his *Explaining Consciousness* helpfully distinguishes between phenomenology (lower case p) which is the study of phenomena and Phenomenology (upper case p) refers to the philosophical schools of thoughtⁱ of

which there are a number. The former type of phenomenology is concerned with describing experiences as they appear in consciousness, without recourse to explanation, theory, or other assumptions. Phenomenology has a long history, Thomas Caxton in the 16th century wrote of the phenomenology of magnetism while this year will witness an academic conference on the phenomenology of particle physics. Caxton's work was pre- or atheoretic and remained that way until Maxwell and Cavendish developed a theory of magnetism. Similarly phenomenological psychology, for example, is concerned with the study of personal experience and subjective perception of phenomena rather than 'objective truths'. Dennett again usefully suggests that they could be divided or grouped into (1) experiences of the 'external' world such as sights and sounds; (2) experiences of the 'internal' world such as daydreams, talking to oneself and (3) affect – pains, hungers and emotional responses such as surprise or desire. While these very different experiences could be divided and partitioned in a dozen different ways we can (probably) agree that they are direct (i.e. unmediated), subjective, personal and qualitative in nature. Investigating place from a phenomenological perspective may provide the kind of rich, thickly descriptive accounts which are required to inform the design of virtual places. Indeed this is situation is similar to that of CSCW (computer supported cooperative work) and its use of ethnomethodology and like CSCW we are looking to language as a means to unlock these personal, subjective experiences. As Heidegger (1971) has noted "It is language that tells us about the nature of a thing ...". In the same essay, Heidegger, demonstrates at great length, how language, the use of language and philology affords insights into the nature dwelling which he took to be central to the having a sense of place or being-there. "The Old English and High German word for building, *buan*, means to dwell. This signifies: to remain, to stay in a place. The real meaning of the verb *bauen*, namely, to dwell, has been lost to us. But a covert trace of it has been preserved in the German word *Nachbar*, neighbor. The neighbor is in Old English the *neahgebur*; *neah*, near, and *gebur*, dweller."

Building Dwelling Thinking, Heidegger *ibid*

We use language to describe place, our experience of place (e.g. Calvino, 1997), place-less-ness (e.g. Relph, 1976) and what we did on our Summer holidays (see section 4.3). But language is much more than just a descriptive tool as the work of cognitive scientists, philosophers of language and developmental psychologists have shown who have in their different ways convincingly argued that language may also affect our very cognition (e.g. Clark, 1997, Dennett, 1991, Vygotski, 1978 among many). It may be that language may both constrains our description of place and our cognition (and/or experience) of that place, cf the Whorf-Sapir hypothesis (Whorf, 1956). While this may be an unconscious inevitability of our everyday lives, it needs to be understood, quantified and qualified when we are faced with creating a sense of place using virtual reality (VR) technology.

The work reported here is part of the BENOGO project which is described in detail below in section 3. The authors are part of a team tasked with understanding the experience (or phenomenology) of place by people using the BENOGO VR technology. The first part of this task we describe as *benchmarking*, that is, describing the experience / phenomenology of place in the real world which we will use as a benchmark or baseline against which we will compare the BENOGO experience. Given the timescale and constraints on the project we are carrying out this work in parallel with its technical development. At the outset of the project (indeed during the project proposal writing phase too) we decided to adopt an explicitly phenomenological perspective. While our reasons for doing so are varied they all centred on evaluating its usefulness as a potential foundation or theory upon which virtual reality / presence research might be stood.

We now move to consider these issues in more detail before briefly introducing the BENOGO project. After this we introduce our two empirical studies of language and place and conclude with a discussion of the consequences of this preliminary work for the project.

2 Three senses of place

Sense of place has been considered extensively in environmental psychology, sociology, geography, literary and media theory and almost certainly other domains. It is also an element of the concept of 'being-in-the-world' in phenomenological thought, for example Heidegger's extensive exploration of the verb 'to dwell'. This paper references three of the more recent and/or influential studies from environmental psychology and humanistic geography: a more extensive literature review of sense of place with relation to presence is continuing. It should be noted that much sense of place research centres on the experience and affect of long-term inhabitants of a place. The models cited here are selected as supporting more general application to the type of place experience which BENOGO may provide. However, it will be necessary to develop a model of visited, rather than dwelled-in place for Benogo, and it is this aim that this pilot study addresses.

2.1 Relph's model of place identity

Relph (1976) is much cited in the sense of place literature. Relph's key monograph takes an explicitly phenomenological and therefore holistic stance, but nevertheless defines three components of 'place identity':

- physical setting
- activities afforded by the place
- meanings attributed to the place.

Relph describes his model as follows : "...the static physical setting, the activities and the meanings - constitute the three basic elements of the identity of places. A

moment's re suggests that this division, although obvious, is a fundamental one. For example, it is possible to visualise a town as consisting of buildings and physical objects, as is represented in air photographs. A strictly objective observer of the activities of people within this physical context would observe their movements much as an entomologist observes ants, some moving in regular patterns, some consuming objects and so on. But a person experiencing these buildings and activities sees them as far more than this - they are beautiful or ugly, useful or hindrances, home, factory, enjoyable, alienating; in short, they are meaningful." (1976: 47)

2.2 Gustafson's tri-polar model of meanings of place

This model (Gustafson, 2000) draws on empirical work in the form of an interview survey and builds on a review of earlier models. The poles of the model are listed below – the contributing factors use Gustafson's terminology.

- self - life-path, emotions, activities, self-identification
- environment - physical environment, distinctive features and events; type of place; localization)
- others [i.e. other people] – perceived characteristics, traits behaviour.

Other factors such as social relations and atmosphere lie between the poles.

2.3 Sense of place as attitude: Jorgensen and Stedman's proposition

Jorgensen and Stedman (2001) propose that the many interpretations of sense of place could benefit from the treatment of sense of place as an attitude, thus drawing on classical psychological theory. Just as any other attitude, sense of place then has cognitive, affective and conative (behavioural) components. In this particular case, these components are:

- beliefs about the relationship between self and place
- feelings towards the place
- behavioural exclusivity of the place compared with alternatives.

A sense of place scale has been validated using these components with a large sample of participants. However, the items rely on long-term familiarity with the place in question. The empirical work discussed in the remainder of this paper uses Relph's model of place identity to organise the reporting and discussion of findings. This has the advantage of taking an explicitly phenomenological stance, in particular in the prominence given to activity in relation to place.

From this brief survey of models of place we now supply a little context with respect to the EU's 'Presence' initiative.

3 The BENOGO project

BENOGO is a recently funded project under the European Community's Future and Emerging Technologies 'Presence' initiative. The BENOGO consortium comprises 6 academic institutions from Europe and Israel with expertise in virtual reality, photo-realistic panoramic image acquisition and rendering, the psychophysics of visual sensing and spatial perception, and the human aspects of new technologies. This project brings together a mixture of novel technologies that will enable real-time visualisation for an observer of recorded real places. The aim of the research is to develop new tools for empirical and theoretical studies of presence based on the concept of the observer's embodiment in the computationally created virtual environment. Furthermore, as real places (possibly known to the observer) with man-made and/or organic objects (like trees, foliage etc.) are otherwise hard to represent in a virtual environment, the objective is to bring about new insight into presence through comparison with the sense of presence experienced in the real world.

The BENOGO experience will be based on true-to-life visual and auditory information presented in real-time. The technology will be designed to support the observer's active exploration of the visual and auditory space, through the addition of a physical dimension to the experience. Through visual and auditory augmentation a sense of life will be added including objects for interaction. Projection technologies will range from Head Mounted Display (HMD) to large screens including a 6-sided CAVE.

The empirical research will exploit the possibilities to investigate the experience of 'being there' in relation to real places and objects. The theoretical framework will be based on the concept of embodiment in conjunction with presence and sense of place. This will be investigated in terms of fidelity of experience and presentation as compared to equivalent real-world places, and physiological and neurological aspects like consistency of sensory-motor co-ordination. The framework will be developed in close interaction with, and as a guide for, technical development by focusing on the particular strengths that the technology offers as well as on its weak points. The research will iterate through 11 demonstrators to achieve these goals. In order to structure the research, four main themes have been identified. These are:

- (i) the acquisition and real time rendering of places;
- (ii) the augmentation of this rendered images with synthetic virtual reality images and 3D soundscapes;
- (iii) an investigation in to the psycho-physiological aspects of presence and finally, for us the most important,
- (iv) establishing a sense of place.

Needless to say our focus is on theme iv.

4 Place and language - Two studies

Much existing work in both place and presence research uses free-form self-reports or retrospective descriptions which are then subjected to content analysis. The pilot study follows this paradigm. In this case the written reports were retrospective: we are also currently investigating the sense of place as described *in situ*. As in any pilot study, trialling the methods used was just as important as collecting data.

There were two phases of data collection. In the first phase descriptions were elicited of a range of places of the type which might be represented in BENOGO. The second phase focussed exclusively on descriptions of the glasshouse complex in Edinburgh's Botanic Gardens, since a glasshouse environment was to be used in the first of the series of BENOGO experiments with the technology.

4.1 *Participants and procedure*

The participants were 18 volunteers from [REDACTED]. They comprised an administrator, a research student, six other students and ten members of academic staff. None were directly involved with the BENOGO project at the time. A data collection instrument asked participants to describe a written description of a familiar place. It provided written instructions, collected basic personal data and provided space for subjects to supply their response. In the first phase, nine places were listed from which participants could choose one; in the second phase, participants were limited to the glasshouse location. The places were local to Edinburgh. They were also of the scale which might be captured for BENOGO (for example a city square rather than the city as a whole). Finally the list contained both natural and built environments and interior and exterior settings.

They are listed below. (Notes in *italics* were not provided to participants).

- Inside the one of the glasshouses in the Botanical Gardens
- Beside the lake in the Botanical Gardens
- Inside the JKCC – *The university's main open access computing facility*
- The main ground floor corridor at Craiglockhart (before the latest building work) – *part of a distinctive late 19th century building used until recently by the [REDACTED]*
- The central atrium at Jenner's – *a large department store*
- Charlotte Square – *a city-centre square with classical architecture, part of 18th century 'New Town'*
- The beach at Yellowcraig – *a popular location for walks and family outings*
- One of the narrow streets in the Old Town – *part of mediaeval Edinburgh*
- Princes Street near Scott's monument – *part of Edinburgh's main shopping street*

Participants were asked to provide a 150-350 word written account of the place, as if describing it to a friend who had never been there. They were further instructed

“You want the friend to have as vivid an impression of the place as possible.” It was hoped that this would stimulate accounts which attempted to communicate a sense of place. Instructions otherwise were deliberately unspecific to avoid suggesting particular elements or a particular structure.

Background details were collected of gender, occupation, familiarity with the place concerned, when it was last visited, duration of residence in or around Edinburgh and age group. Permission to quote anonymous extracts from their material was obtained. No descriptions were obtained of two places on the list. The descriptions supplied were distributed as follows:

Inside the JKCC (a large new computing laboratory on campus)	4
The main ground floor corridor at Craiglockhart (a 19 th century university building)	4
Inside the one of the glasshouses in the (Edinburgh) Botanical Gardens	6
Beside the lake in the Botanical Gardens	1
Princes Street near Scott’s monument (the main shopping street in Edinburgh)	1
The beach at Yellowcraig (a popular location for walks and family outings)	1
The central atrium at Jenners (Edinburgh’s most traditional department store)	1

4.2 Analysis

When returned, the descriptions were transcribed (if hand-written) or converted onto the plain text files required by the analysis software, ATLAS/ti¹. They were then analysed against (a) the Relph (1976) model of place identity and (b) the practical dimensions likely to be of immediate relevance for the design of BENOGO demonstrators and scenarios.

4.2.1 Individual differences

The most striking feature of the results was the differences between participants in overall richness of description, even where the same place was being described. For example, here are two accounts (in full) of Napier’s computer centre, the JKCC.

Description 4. There is sunlight. It slants through the small windows and strikes the blank walls. The room is filled with about 500 computers, on benches of 12. There are ventilation grilles in the floor through which I can see deep holes. The walls at the far, high end have mysterious cabinet doors which open to reveal even more mysterious recesses. One day I’ll climb in to one. Working there, there is as much isolation or contact as I need. The technicians’ open-plan desk in the centre is a source of friendliness and sociability. They are always happy to chat. There is an

¹ The software supports qualitative content analysis of text, images and audio material, in particular the selection, coding annotating and comparison of segments of raw data. A semantic network editor allows the building and modification of theoretical models.

open entrance area, carpeted but with no computers, which separates out those working from those passing through. It has a standing computer display of the system status, which itself is often faulty. The JKCC has a feeling of noise and disquiet, and it is difficult to concentrate fully.

Description 8. The room is full of computers about 500 of them on three levels. The computers sit in bays of about 10 computers. The monitors sit on benches each has a keyboard, mouse and mouse pad beside it. the box with disk drives etc, in sits on the floor. For each computer there is a swivel chair. In the centre is an area with a technician sitting behind a counter. There are a few students dotted around using some of the machines. The walls are blue, there are sky lights. The carpets are red. There were also notable differences between participants in the depth and amount of description devoted to the individual dimensions described below. Participant numbers are too few, however, to permit meaningful analysis against the places described and personal characteristics and background.

4.2.2 The physical setting

This section reports content relating to the physical features of the environment, contrasts made between the chosen place and others, and sensory modalities in the description of physical features.

The nature of objects populating the places described and the level of detail of object descriptions are difficult to categorise and naturally dependent on the place in question. That being said, inanimate objects are present in all descriptions, people in most accounts, and living non-human objects (primarily plants) are only in the descriptions of the Botanic gardens. The extracts below are typical of the treatment of inanimate objects and people.

Each tier has bays of computers. The monitors are arranged in rows. There are grey pillars. (Description 1, JKCC)

They are mostly coming and going to the refectory some with plastic cups of coffee in hand. (Description 11, Craiglockhart)

Comparisons of the place described with other places, or between different parts of the same place, are relatively common.

Everything enclosed with the garden's walls is exaggerated when compared with what lies beyond. (Description 3, beside the lake in the Botanic Gardens)

As you approach North Berwick, there are more people enjoying the beach. The atmosphere changes and even the quality of the sand changes. (Description 6, Yellowcraig)

The descriptions are overwhelmingly visual. Sound is mentioned in only six reports, touch/temperature in five and smell in two.

...you can hear lots of movement on the gravel, from cars, bicycles and people. (Description 10, Craiglockhart)

The air outside is quite chilly, so the interior of the glasshouse feels very warm. (Description 13, Botanic glasshouse)

There is a distinctive smell - a melange of wet earth, sweet rotting vegetation and the heavy non-odour of humidity. ((Description 13, Botanic glasshouse)

4.2.3 Activities

All descriptions have include some type of physical activity. Most are variants on bodily movement through the environment:

...you have to dodge the shoppers and workers on their lunch break (Description 2, Princes Street)

...students and staff moving around in the corridor... (Description 11, Craiglockhart)

There is gravel underneath, laid on sand, and this shifts pleasingly when walked on. (Description 13, Botanic Glasshouse)

Interaction with objects in the environment is less frequently described and occurs in less than half of the descriptions.

...swinging our shoes in our hands. (Description 6, Yellowcraig)

...a few students dotted around using some of the machines. (Description 8, JKCC)

Social interaction is similarly rare, and with the exception of description 1 (quoted in full above) usually relates to interaction between other people rather than the participant themselves.

...technicians trying to help users (Description 14, JKCC).

4.2.4 Meanings and affect

Most descriptions attribute some sort of meaning (in the Relph sense of the word) to the place or its features:

...the magnificent view of Edinburgh towering above (Description 2, Princes Street)

There is an important looking control centre, it looks like a fortress... (Description 1, JKCC)

I envy the near-fake perfection of the turf... (Description 3, beside the lake in the Botanic Gardens)

4.3 Study II: What we did on our Summer holidays

As we all know there is no respite for the dedicated researcher. While on holiday in a cottage in Yorkshire (July 2002) the authors found, read and subsequently made a photocopy of the visitors' book² we found there. The cottage is located in the village of Kettlewell in the North Dales. The name of the village is thought to be from the old Norse for a *bubbling spring*.

4.3.1 The visitors' book

The visitors' book is a standard A5 notebook which has been inscribed, "Visitors Please add any suitable comment". The entries run from 23rd April 1994 until 13th October 2001. There are over 250 handwritten entries ranging in size from 2 lines to more than 3 pages. The entries are signed usually in the form Mr. and Mrs. Smith, Our Town, Home Counties or John, Mary, Ben (7 years old) and Rebecca (5 years old) and a drawing of a sheep. Figures 1, 2 and 3 give a flavour of the contents of the book.

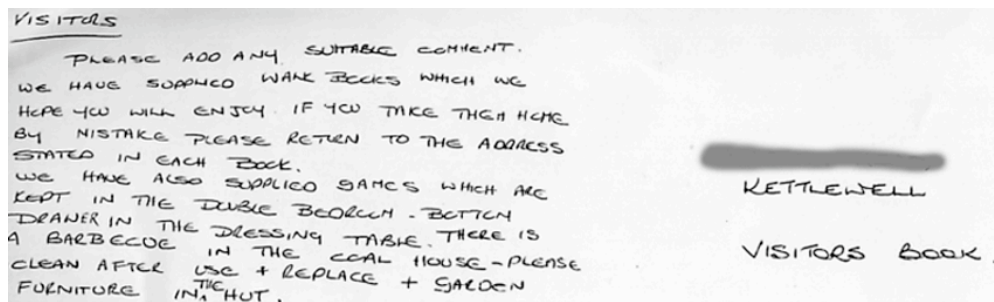


Figure 1 – An image of the front page the visitors' book complete with instructions. Names are been obscured in this and next two figures.

² It has not been practical to contact the authors of the entries in the visitors' book so we have been careful not to reproduce any details which might lead to their embarrassment, identification, or cause them to pursue us through the courts.

to fill up the water tank as the spring feeding Kettlewell is drying out. We return home reluctantly + will definitely be back.
 Many thanks for a lovely cottage

19th - 26th August.
 We have had a wonderful holiday. The weather at the beginning of the week was very hot but half-way through we had a shower of rain which cooled things down a bit. It has been cooler today but very welcome!
 Our two boys have had great fun playing in the beck every day. We have walked to Starbottan + back by the river, we did the Ingleton waterfall walk. The highlight of our visit for the boys was their introduction to canoeing. We hired helmets + lights at the local shop + took them to Dow Caves. We walked round Grass Woods, to Grassington + back via Ghaistrill's Stand, we walked from Bucken, to the top of the dale, via Cray + Hubbertholme and our last day we walked through the Ingleborough Estate at Clapham + visited Ingleborough Cave. The children (5+7) don't want to go home - neither do we!
 A lovely cottage. We have been very comfortable here - everything we need is here. We have also had great fun watching the sheep and chatting to the local farmer.
 We look forward to coming again next year. Thank you.

Figure 2 – A longer entry covering almost two pages.

23rd Oct - 29 Oct '99
 Must be one of the best cottages to stay in anywhere. Ideal situation, cosy, everything supplied that was needed. Excellent. Prettily good for some of year, heavy rain on arrival but cleared up later. Views + scenery as ever fantastic + not to be forgotten. Will be back.

29 Oct 99 Superb! Fab food glorious Tray. Cam Beck close and Bob with a delicious Drombaire Sauce at the Fox + Hounds. Thank you
 6 - 12 Nov 99
 Everything perfect - cottage, walking, pubs and even the weather!
 Many thanks.

29.12.99
 We have had a lovely peaceful, restful holiday in this beautiful cottage. Please may we come again.

March 18th - 25th 2000.
 Second visit and just as beautiful as the first.

April 8th - 15th 2000
 Beautifully located and equipped cottage. Excellent hostesses abound. The 'Buck Inn' at Buckden easily the best for quality, quantity, food. The Angel at Kilton is pretentious and ludicrously

Figure 3 – At the other extreme here are a pair of pages filled with 6 short entries.

4.3.2 The analysis of the contents of the book

On returning from holiday we took a random sample of 30 entries (approximately 12% of the total) transcribed them, saving them as plain text files to be analysed using ATLAS/ti which has been described earlier. Having read the entire visitors' book we had recognised a number of recurring themes – the weather, comments on the cottage and the adjacent beck (a small stream), recommended pubs / pub food, walks and attractions. In all this pointed to the presence of a well defined genre. Following Swales' five point definition of a genre (1990), the entries in the visitors' book meet most if not all of them. The entries are: (1) a class of communication events, (2) there is or are shared purposes to the entries – where to eat, where to walk, (3) they do vary as to their prototypicality, (4) they do appear to be constrained to a limited set of recurrent topics, and have afforded us insight into the experiences of Kettlewell (5). We now revisit the categories of description we identified in the first study.

4.3.3 The physical setting

This section reports content relating to the physical features of the environment, contrasts made between the chosen place and others, and sensory modalities in the description of physical features.

“We have had a wonderful week. Walks, food & drink and above all rest! The weather has been perfect for walking. The best walk for views we did was from Kettlewell - to Arncliffe and back - bit of a 'route-march' but well worth it.”

15th April 1995

First visit to North Yorkshire, scenery wonderful (even when the hills were covered by the mist!!). Weather changeable, but cottage always had a cosy welcome. Children enjoyed "fishing" in the beck. All recommended pubs well worth a visit. Cottage tea-room in Kettlewell visited frequently, lovely food and atmosphere.

13th August 1994

Again, the descriptions are overwhelmingly visual although the weather does feature frequently.

4.3.4 Activities

Not surprisingly for a holiday venue, visitors are directed to participate in festivals, walk or drive to places of interest.

A very attractive and well equipped cottage in a superb location. We enjoyed a rare "dry" week with sunshine at the beginning and end of the week. Superb walking country with walks starting right at the door. Highlights of the week included the walk up Great Whernside via Hag Dyke and returning along Top Mere Road and seeing a Dipper feeding in the beck outside the kitchen window while I was eating my breakfast. Asgarth Falls are worth a visit but not so Settle! Enjoyed the scones in the Dales Kitchen in Grassington as well as an evening meal in the Devonshire Arms.

19th September 1998

“A very pleasant and comfortable cottage in an ideal location. Our visit coincided with the Kettlewell Scarecrow Festival in aid of the local school. It was great fun to see all the different scarecrows popping up throughout the village. The scenery in this part of Yorkshire is great - particularly with Sun glittering off hill tops. However, if it is raining (and it sometimes does) and you don't mind driving, the Calderdale Industrial Museum in (Halifax), the Museum of Film and Photography (Bradford) and Urdale Glass (Masham) are all well worth visiting. “

20th August, 1994

“We had a good week staying in Kettlewell. The weather was mixed, more good than bad though. We visited many places during our stay including: Ilkley, Otley, Settle, Harrogate, etc. We also went to Malham and climbed to the top of Malham Cove, the view was well worth the climb. We enjoyed a very nice meal at the 'Old Hall' in Threshfield. We hope to return again.”

5th September 1998

4.3.5 Meanings and affect

Most visitors describe their stay as beautiful, wonderful and so forth.

“Our second visit and just as beautiful as the first”

18th March, 2000

“We would just like to say thank you. Everything has been perfect”

3rd October 1998

4.3.6 Individual differences

There are, of course, numerous examples of differences between the entries from the cottage's visitors varying in length, lyrical quality, detail, sophistication of

expression and a dozen other things. However despite this diversity they most fall into the same broad style or genre which we discussed earlier. One explanation for this is presence of all other visitors' description. We read the book and it is likely that everyone else visiting the cottage did so too.

5 Discussion

Let us leave this - did you say what you call it. 'Hill?' suggested Pippin. 'Shelf?' Step?' suggested Merry. Treebeard repeated the words thoughtfully. 'Hill.' Yes, that was it. But it is a hasty word for a thing that has stood here ever since this part of the world was shaped.

The Two Towers (2002:75)

At the outset of this paper we made it clear that we are interested in benchmarking the phenomenology of place; knowing what it is to experience a sense of (real) place will allow us insights what it is to (a) design a virtual place and (b) to evaluation / understanding the phenomenology of such a virtual place. So what have we learned?

5.1 Place versus space

We have not been surprised to find that descriptions of place are not the same as descriptions of space, nor are we convinced by the occasionally encountered shorthand 'place = space + meaning'. The creation of place from space is not an additive process but as Relph among others suggests, sense or place is an elusive, evanescent quality which is much more than the addition of its components, however well these are defined.

5.2 Language

Language presents more problems than opportunities for this research. Language is used to describe our sense of place but may in itself affect our experience of space (e.g. Whorf, 1956). Are we preconditioned to report place in 'conventional' ways, for example, what we write on holiday postcard, the travel articles we read in the Sunday supplements and what Relph (*ibid*) describes as 'inauthentic' experience of place. We also seem constrained to largely confine our description to the visual medium. As Dennett (1991) has shown our use of visual metaphor is inescapable - you see.

5.3 The Phenomenological approach

As we expected, the phenomenological description have proved to be rich and interesting but we should also add unwieldy and difficult to generalise from, except to say descriptions of place are personal and individual. We should also note that

these studies have highlighted a number of methodological problems in adopting such an approach. It may prove to be practically impossible to framing a question or line of enquiry without leading people (i.e. influencing their response). We also note that individual differences between people with respect to their linguistic style and ability is an important factor which we cannot (nor wish to) factor out.

5.4 Consequence for the BENOGO project

While we are confident that the Benogo project will solve the problems of creating a sense of photorealistic space augmented with a soundscape, the challenge of creating a sense of place is significantly more problematic. In essence how do we introduce (personal) meaning into a technical solution? One line of research which does present itself as a potential candidate is the field of environmental psychological specifically the design of meaningful *built space*.

Acknowledgments

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ⁱ Phenomenology has two broad meanings, the first is concerned with describing experiences as they appear in consciousness, without recourse to explanation, theory, or other assumptions from other disciplines. Phenomenology also refers to a number of schools of philosophy studying the nature of being in a variety of different ways using a variety of different methods. For the purposes of this essay, we have concentrated on the former.