The University Of Sheffield.

Barriers to Naturalistic Planting in Inner City Parks.

By
Jemima Taylor

A thesis submitted in partial fulfilment of the requirements for the degree of
Doctor of Philosophy

The University of Sheffield
Faculty of Architecture
Department of Landscape Architecture
12 January 2017

Abstract

The last few decades have seen an increasing popularity in naturalistic planting. It is widely accepted to be attractive and beneficial to wildlife. It is, however, still unusual to see it in inner city parks, where mown grass, trees, shrub beds and colourful annual planting still predominate. This two part study aims to identify where the barriers actually are to naturalistic planting. Firstly it explores park users' attitudes to naturalistic planting, both in the broadest sense and at vegetation level. It uses quantitative survey methods to explore how demographic factors such as age, gender and occupation, and behavioural factors, such as park visit frequency, reason for being in the park and access to other types of open space, might influence preference and acceptance of naturalistic planting. Park users in two cities were asked about areas of naturalistic vegetation specially grown for this study. The second part is an exploration of the attitudes of professionals within the Green space sector; both local authority employees and professionals from specialist organisations. This qualitative study takes an ethnographic approach; attitudes towards naturalistic planting are explored within the context of the personal, professional motivations of employees within the Green space sector. It is hoped that by probing deeper into the culture of organisations, and the individuals that work in them, a greater understanding of naturalistic planting, in inner city parks, might be gained. It was found that park users almost universally embrace the idea of naturalistic planting, that factors such as age, familiarity and context influence park users' views about planting. Diversity and "wildlife" were found be important to park users generally and the more familiar they are with these the more it influences their preference. Local authority employees were found to hold professional attitudes about naturalistic planting that did not reflect the attitudes held by the park users. Greenspace managers, while expressing approval of naturalistic planting, did not prioritise it as a vegetation choice. This study found that barriers to naturalistic planting are environmental and institutional, but these can be overcome by champions for naturalistic planting within local authorities and outside them, strong relationships of trust between experts in the field and local authorities which incites motivation to innovate in vegetation management.

Acknowledgements

I would like to extend my acknowledgements and thanks to the following people and organisations

1. The parks and open spaces departments of The City of Bristol, The City of London, The London borough of Lambeth and the City of Sheffield. All of the individuals who agreed to take part in this study and gave their time to speak freely and openly about their work.
2. All of the respondents to the surveys for their time and comments.
3. My supervisor Professor James Hitchmough of the department of Landscape, University of Sheffield. His work is an inspiration. It was a privilege to be able to play some small part in it.
4. The Maths and statistical helpdesk at Sheffield University.
5. Helen Morris, Anna Jorgensen, Jan Woodstra, Nigel Dunnett. Their friendliness and interest was indispensable.
6. Ben Herbert, Sophie, Celia and Olive Herbert, Milly Taylor and Annie Taylor, without whose support and patience. I would not have been able to complete this study.
7. My sometime writing companion Jill Kowal
8. The examiners (first time round) for their interest and encouragement

Amendments.

The following amendments have been made, further to the recommendations of the examiners,

1. The introduction now includes the aims and objectives, These are referred to throughout the study,
2. The literature review now includes work by Oliver Gilbert, Nan Fairbrother, William Robinson, Harold Armitage, Ian Rotheram, Liz Burgess and Carolyn Harisson. The literature has made an attempt to consider work by CABE, the HLF and the countryside commission. It has anchored the subject of Naturalistic planting in cities into ideas about urban biodiversity, species richness in the form of spontaneous vegetation and Urban Commons. Further reading included Richard Gulliver, Tom Fort,
3. The methodology has been rewritten in much more detail. The philosophy of the research has been considered as well as the research methods that were available. The reasons that the methods were chosen, and other methods that were considered, has been given detailed consideration. Other studies have been considered that relate to the topic, and their research methods compared and on occasion used.
4. Chapter 4, results of the meadow sowing, begins with a timeline opf all the sites and then describes the key challenges encountered while trying to establish the meadows over several years.
5. Chapter 5, the quantitative results, has been adapted to make it clearer to the reader. Statistically significant results, are shown clearly in findings boxes, at the end of each piece of analysis. These findings are then discussed at the end of chapter 5.
6. Chapter 6, the qualitative study still presents the interviews case by case but each case is summarised by a key finding box, which are then discussed together at the end of chapter.
7. Every attempt has been made to integrate the study firmly into the literature. It aimed build the study into a logical convergence of the findings in chapter 7 with the hope that it would find its own place in the wide range of literature about this subject.
8. The theoretical standpoint of the study has been changed to propose a less humanistic (and fatalistic) approach to innovation in the public sector, to a more purposive and potentially more useful approach. An approach that relies on the concept of goals and proposes the importance of the concept of champions. This is introduced in the literature review and developed in the qualitative results and the concluding chapter.
9. The limitations of the study including ideas about sampling are explored. The ethnographic approach has been replaced with a more general ethno-organisational approach
10. Friends' groups have been given much more consideration

Contents

Chapter 1. Introduction

1.1 The Research Question

This study is about planting in parks. Parks are areas of landscape that are set aside for a specific purpose such as human enjoyment, the preservation of nature, retail or industry. The word probably stems from the word paddock (or parrock) which is an English term meaning enclosure for livestock (OED 2016). In the context of this study these parks are inner city parks; they are areas set aside for human enjoyment and recreation and tend to be looked after by local authorities on behalf of the tax paying public. Parks contain trees, flowers and grass almost by definition and the study is predicated on the principle that opportunities to create and enhance species diversity should be created at any opportunity. This can be applied to planting in city parks.(Hitchmough 2004, Kingsbury 2004)
Species diversity is widely accepted to be a part of a stable ecosystem ie an ecosystem that can withstand unpredictable extremes in climate and other influences. in which a variety of interactions and lifecycles between species groups can co exist. (Dunnett and Hitchmough 2004) These interactions, in theory, are self sustaining; as balance between species evolves, required management and intervention decreases. An attractive prospect in a world in which resources to maintain landscapes for the public are ever diminishing (HLF 2014). Species diversity and "naturalness" in the widest interpretation of the term, are also increasingly accepted as being attractive and contributing to feelings of well being (Sullivan 2014, Jorgensen 2004, Kaplan and Kaplan 1989).
Over recent years interest in ornamental naturalistic planting has grown (Bourne 2004, Hitchmough and Dunnett 2004, Wiley 2004, Oudolf and Kingsbury 2005). It is seen as an ecologically and financially sustainable planting option for urban landscapes (Hitchmough and Dunnett 1997, Hitchmough and Dunnett 2004) as demand for ornamental planting is high and resources with which to implement and maintain it increasingly low. This is particularly the case in inner city urban parks which are heavily used. Seasonal flower colour in planting is an integral part of the suite of vegetation types that urban park users expect to encounter.
The advantages of naturalistic meadow-like vegetation under consideration in this study as compared with other types of ornamental planting are several-fold:-

- It is comparatively inexpensive (Hitchmough, De la Fleur et al. 2004). While not as cheap to maintain as mown grass (Brown 1989) it is considerably cheaper in execution and maintenance than the traditional ornamental alternatives of seasonal annual planting and formal and informal herbaceous planting . Naturalistic meadow-like planting can be implemented on a large scale and interrupt monotonous plains of mown grass (Brown 1989).
- Naturalistic herbaceous vegetation can be established by sowing seed *in situ* (Hitchmough 1994). Plant species are chosen to suit the environment in which they are sown and will tolerate conditions such as drought, shade and poor (or, in some cases, a surplus of) nutrient availability. Species are mixed to create small, site-appropriate ecosystems that can operate as a self sustaining plant community (Wells, Cox et al. 1989, Ward 1989/1990).
- Naturalistic vegetation is potentially attractive to wildlife in both summer and winter. Wildflowers provide a prospective food source for invertebrates, birds and small mammals (Hitchmough and Woodstra 1999, Gaston, Smith et al. 2004, Luscombe and Scott 2004, CABE 2006).
- The aesthetic value of naturalistic planting is potentially high. It is generally accepted that people find access to, and contemplation of, nature aesthetically pleasing as well as therapeutic (Wapner, Cohen et al. 1976, Kaplan 1995, Kaplan 2001). It seems reasonable to assume that urban naturalistic vegetation has similar effects; however there is very little evidence to confirm this view at the scale of designed planting.

Perennial naturalistic meadow vegetation has been increasing in popularity with landscape designers and gardeners over the past forty years (Hitchmough 1994, Kingsbury 2004, Wiley 2004, Oudolf and Kingsbury 2005). Given the potential merits in terms of cost and maintenance,one would expect it to be commonplace in parks, particularly inner city parks where competition for financial resources is possibly fiercer than elsewhere. This is not the case (Dunnett and Hitchmough 2004). While seasonal ornamental bedding planting is commonplace, naturalistic ornamental planting amongst inner city local authorities is typically limited to annual flower mixes sown in areas of shallow or poor soil, or areas that are not suitable for traditional horticultural solutions for physical or financial reasons;

This study seeks to find reasons for this absence. The major research question asked in this study is what are the barriers to establishing naturalistic planting in inner city parks; its aims to answer the following questions:

- Are there real barriers to establishing this type of planting in inner city parks and if so, what might these barriers be? Are they institutional, professional or socio-cultural in nature? By institutional I refer to the institutions; the local authorities that are responsible planting in inner city parks whose finances, politics and culture may influence decisions made about planting in parks. Professional refers to skills and training on the part of those involved doing the actual planting; for establishing naturalistic planting requires a skill set that lies outside traditional horticultural techniques. Socio-cultural is used in this context to refer to the park user, to the preferences and expectations of the community with regards what they expect of vegetation in their parks.
- Do park users accept naturalistic vegetation, and if so why ? aesthetic concepts such as change over time, degree of colour in meadows, grassiness, fullness and "senescence" (ie deadness) may have an influence over the acceptance of naturalistic planting in parks and will be explored. Acceptance may also be influenced by other factors such as familiarity with and knowledge about this type of planting, and exposure to it in terms of visit frequency.
- Do demographic factors such as age, gender, educational status and socio economic status influence acceptance of naturalistic planting in parks.

To answer these questions, the first objective of the study was to explore these aims using a mixed methods approach. In the first instance, small areas of mown grass in several inner city parks would be replaced with designed meadow type planting. This would be sown from seed and, when established, the opinions of park users about it would be sought. Information about the park users with regards visiting behaviour to the park, and demographic information would also be sought. Other information such as familiarity with this type of planting and membership of a wildlife organisation would also be sought with a view to

investigating whether these factors had an influence on the perception of naturalistic planting of individual park users. Analysis would be undertaken using quantitative survey methods, ie a closed questionnaire, and the use of suitable statistical methods.

The second objective of the study was to identify and interview individuals in the greenspace sector with the aim of finding out the professionals' attitudes to naturalistic planting. It sought to interview professionals in their place of work and, by way of semi structured interviews, to achieve the third objective – to identify both barriers to and mechanisms for naturalistic planting in inner city parks. These interviews were hoped to be broad enough to give individuals the possibility to discuss the technical and practical, as well as an opportunity to speak personally about their experience, desires and assumptions with regards naturalistic planting. It was hoped that taking an ethnographic approach to the analysis might deepen our understanding of the mechanisms by which decisions regarding planting are taken.

Taking an experimental approach was thought to be a suitable way to explore the research question which was seeking barriers to this type of planting in urban parks; not only would technical and physical experience be gathered sowing the meadows, but gaining permissions and personal interactions with the employees in the chosen parks would build trust and facilitate the interview process. Some of the employees of the chosen authorities would be chosen to be interviewed as well as other, carefully chosen interviewees who might help to meet some of the aims of the study. The study was jointly funded by NERC (The National Environment Research Council) and the ESRC (Economic and Social Research Council). The cross disciplinary nature of the funding was reflected in the broad reaching nature of the research design that was firmly anchored in both the physical and social sciences.

The structure of the thesis is as follows: Chapter 2 will review the literature. The literature reviewed will cover the history of naturalistic planting in urban situations, landscape aesthetics and vegetation preference, as well as studies about parks, the challenges they face in this area and studies about organisations and how things get done. Chapter 3 will present the research design and methodology, giving an overview of the mixed method approach and how it will be used to explore the research question. Chapter 4 will present the

results of the sown meadows, mostly in pictures. There will be a short discussion in this chapter about the technical challenges. Chapter 5 will present the results of the quantitative study; the park surveys of the two sets of users in Sheffield and London. This will include primary results, some statistical exploration and a discussion. Key findings will be presented wherever possible. Chapter 6 presents the qualitative results, the interviews case by case. It hopes to offer a picture of the individual interviewed about the subject of naturalistic planting at work. This chapter will also end with a discussion of the results. Again, key findings will be presented as often as is suitable. Chapter 7 discusses both sets of results. Major themes and findings that relate to some of the hypotheses set out in the literature review. The discussion reaches widely into themes of knowledge and the future for naturalistic planting in parks, it identifies some barriers and offers solutions based on the findings. It hopes to make some recommendations and ignite further pathways for exploration in this area.

Chapter 2: A Review of the Literature

2.0 Introduction to the Literature Review

Because of the broad and cross-disciplinary nature of this research the literature review is far reaching. It touches meadow creation and grasslands; the creation, rehabilitation and culture that has built up around them; nature in cities and naturalistic planting in an urban context, facets of landscape aesthetics, naturalistic planting in relation to greenspace management, the situation with the UK parks today and in the 20 years leading to today, ethnography and the public sector and even some sociology. It is not a comprehensive literature review of all of these topics yet it hopes to give a picture of the types of research and major studies that touch upon the subjects covered in this study and hopefully anchors naturalistic planting into a wider sociological context. This literature review uses key studies to illustrate the thinking behind the present study, and to inform and support the research design and methodology employed.

The first section provides a background to meadow creation in general and in urban situations. It attempts to anchor urban meadows into the cosmopolitan framework of plant diversity in cities, providing the ideological framework in which the study will be undertaken. Wildlife value of city parks is summarized and then some time is devoted to the ubiquitous culture of mown grass, a subject in its sheer scale in the UK. The technicalities and challenges of diversifying managed grasslands is described at the end of this section. The anticipated biological and environmental barriers (competition by weeds for example) to the establishing of NP in parks will be considered via some of the main studies in this area.

The next section of the literature review considers acceptance by park users of NP, and reviews some of the major trends in Landscape preference that have been thought to influence acceptance and preference for a given landscape, and then at a smaller scale, vegetation type. This section, falling loosely into the category of "landscape aesthetics" highlights how potentially nuanced peoples' requirements are of the landscape. It starts by considering more absolute theories based on biological preference and then other theories that are based on culture and experience. It is hoped that the current study can,

in some measure, contribute a small amount to the wider theoretical debate about landscape preference via a consideration of some of these theories. This section also considers, in more detail, key studies that have looked at expectations of park users of their parks and more specifically planting, their methodologies and application to the current study. Attitudes to different planting types by professionals will also be considered.

As mentioned in the introduction this is a two part study. One part scrutinises a sample of park users to gauge whether and why they want naturalistic planting and on what conditions, and whether it should indeed form part of their daily park experience. The next part engages with the organisations and individuals that work in some chosen parks, to attempt to uncover embedded barriers to naturalistic planting. It also engages with specialist organisations and individuals who do undertake naturalistic planting to find out where they perceive the barriers and, on the other side, opportunities to be. Anecdotal evidence says that parks are dominated by traditionalists who have neither the time, money, skills nor budgets to undertake innovations in vegetation management. Literature will be reviewed in relation to these hypotheses. This section of the literature review considers the organisational framework generally for the promotion of nature within local authorities, the funding and politico-bureaucratic context in which the individuals to be interviewed will have undertaken much of their professional lives. It will consider skills and reported changes in staffing in parks in the UK to see which of these many factors may have the greatest influence on innovating in greenspace management.

Finally the literature review will introduce support for an alternative supposition with regard barriers to NP in parks by presenting a theory that it is the way that individuals interact within organisations, particularly public sector organisations, that determines successful outcomes in relation to greenspace management.

This literature review is not a comprehensive review of all of the literature in this area. It aims to illustrate and support the deliberately wide reaching research question using a wide range of literature in the subject, that has the hope of cementing some accepted hypotheses and unfolding further avenues for research.

2.1 A background to meadow creation in urban situations.

Meadow creation by sowing seed *in situ* has generated a reasonably extensive literature (Wells, Cox et al. 1981, Johnston 1990, Ash, Bennett et al. 1992, Gilbert 1998, Pywell, Bullock et al. 2002, Pywell, Bullock et al. 2003). Studies range from species level, looking at the functional qualities, or traits, of the plants themselves to create plant assemblages that can be used for habitat restoration or creation (Wells, Cox et al. 1981, Pywell, Bullock et al. 2003, Walker, Stevens et al. 2004), to ornamental naturalistic mixes of species for landscaping works (Anderson 1989, Wells, Cox et al. 1989). Although some of it has been targeted at cities (Johnston 1990) most studies have been targeted at habitat rehabilitation after agricultural impoverishment.

The design of these meadow-like communities has been – and, largely, still is - predicated on the idea that species diversity contributes to a healthy ecosystem, in both urban and rural environments (Wilson 1992, Gaston, Smith et al. 2004, CABE 2006). A diverse habitat is believed to be resistant to environmental extremes, disease and other potentially harmful external factors (Dunnett 2004). It is in this context that the seed industry offers a very diverse range of seeds for use in the creation of native wildflower meadows (Brown 1989).

The creation of meadows has, since the first work by Wells et al (1976,1989) traditionally been seen as a way of reversing the impoverishment of habitat diversity by agriculture (Walker, Pywell et al. 2004, Walker, Stevens et al. 2004). Intensive agriculture not only destroys natural habitats but also increases the nutrient levels of the existing soil which can affect the establishment of many native flower species.(Marrs and Gough 1989, McCrea, Trueman et al. 2004). Plants that thrived prior to agricultural intensification may fail due to more intense competition long after nutrient addition has ceased (Ash, Bennett et al. 1992, McCrea, Trueman et al. 2004). Habitat restoration is not a simple question of restoring the original flora. Site-appropriate species that establish readily, in the case of nutrient rich soils, must be chosen and sown together to create self-sustaining plant communities (Hodgson 1989, Gilbert 1998, Pywell, Bullock et al.

2003). These species are chosen for their functional ecological characteristics as well as being able to tolerate the changed edaphic and environmental conditions caused by agriculture. In an urban setting meadows are created as they attract wildlife to cities, can cover large areas and present a potentially attractive alternative to mown grass (Brown 1989, Ward 1989, Hitchmough and Dunnett 2004).

2.1.1 Methods for creating meadows.

There are different ways of creating meadows generally; In his book "Habitat Creation and Repair" Oliver Gilbert identified three approaches to "grassland rehabilitation"; allowing natural colonisation (most suitable for so called skeletal soils with a low nutrient base); diversifying an existing ecologically dull grassy sward (which can be done by rotovation and seeding, oversowing," slot" seeding or using small pregrown plants: plug planting) and finally, sowing seed in situ. These different methods should be chosen in accordance with objectives, site conditions, monitoring and follow up capacity (Gilbert 1998). It is the final method of sowing seed in situ to create flower rich grasslands that provides a context in which the methodologies for this study are anchored.

The question of which species to use is complex and context specific. Practitioners of a habitat restoration perspective on grasslands have traditionally looked to the National Vegetation Classification for guidance as to what species to use (Stevenson, J.M. et al. 1995, Pywell, Bullock et al. 2003).The National Vegetation Classification is a description of 860 plant communities based on data recorded for 35,000 sample vegetation stands in the UK (Rodwell 1991-2000). It is a phytosociological description that includes information on approximately 50 different types of UK grasslands; mesotrophic, calcicolous, calcifugous (Pywell, Bullock et al. 2002). It is on these grasslands that habitat recreation has been based. It is worth noting here that none of these habitats are specifically urban habitats; indeed, from an urban ecological perspective, the NVC has its limits. For example, one of the most characteristic plant communities in London, the Buddleja-Conyza scrub community, that is distinctive for its richness in alien species, is not described in the NVC. This community is characteristic of sunny, open, well drained sites often on cinder, ballast or building rubble and on undisturbed (abandoned) gardens (Crawley 2011). It has affinities with two of the NVC groups (the OV, or open vegetation groups) but the species numbers differ in

relative abundance. This, mostly urban, community is a “mid successional community” and corresponds with the “urban commons habitat” described by Oliver Gilbert in “The Ecology of Urban habitats”. These sites are generally unmanaged and, although deemed undesirable by local authorities, are rich in types of wildlife that do not occur in the countryside and support “true urban communities” These sites become colonised quickly by plants and, if plant succession is left unimpeded, it will culminate inscrub woodland and its associated species richness. (Gilbert 1991)

“London’s important alien species evolved in far-flung corners of the globe (for example , Buddleija davidii in China, Conyza sumatrensis in South America, Epilobium ciliatum in North America and Crassula helmsii in New Zealand), yet they come together to form strange new plant communities. The replacement of native by alien flora might be the despair of conservationists, but the dynamics of distinction and invasion are endlessly fascinating to those of us who describe ourselves as urban botanists” (Crawley 2011).

It is in this context that the NVC’s predominantly rural approach to inform meadow creation is unsatisfactory; Existing urban habitats, apart from the successional sites described previously, described by the NVC, comprise a few semi natural habitats in the greater London, and fragments of heathland and tall (unmown) grass. This latter community dominated by a few species fall into the MG1 classification of Rodwell (Crawley 2011). These are neither attractive, species rich or endangered, so using them as a rubric from which to create meadow mixes is not suitable.

The creation and maintenance of **naturalistic herbaceous vegetation** has involved a more plural approach to both plant communities and species (Hitchmough and Woodstra 1999, Hitchmough 2000, Hitchmough, De la Fleur et al. 2004, Hitchmough and De la Fleur 2006). These studies focus on the technical and ecological aspects of naturalistic herbaceous vegetation, but see the aesthetic aspects of the resulting vegetation as of paramount importance to its positive perception by lay people. They have presented it as a viable planting alternative to traditional types of vegetation within parks and green space such as herbaceous vegetation, shrub beds or mown grass.

2.2.2 Meadows in an urban context

It is worth briefly mentioning here the urban biological context in which these choices are being made for urban situations. The native flora of most cities has declined as natural habitats have been built over or dumped on, and semi natural habitats have depreciated in species richness due to the interacting effects of "drainage, trampling, acidification, eutrophication , dogfouling, harvesting and botanical collection" (Crawley 2011) This decline in native species has, as described earlier, been matched by an increase in exotic species that have naturalised in urban environments. There are two major mechanisms that have been responsible for this, disturbance which causes "pulses" in nutrients, and propagule pressure; non-native species with greater quality, quantity and frequency than native plants. (Lososov, Chytr et al. 2012). It is for this reason also, as was mentioned earlier, that using the NVC to inform the creation of more species rich grasslands in cities is also unsatisfactory. Many wild flower species that occur in the NVC grasslands may not establish successfully in soil that has residually high fertility from agriculture, or, in this case, from nitrogen fall-out in urban landscapes; the reason for this is that naturally soils would have had a diversity of depth, structure and nutrient levels affording corresponding diversity of grassland communities. However most lowland soils have over time been subject to longstanding nutrient enrichment which allows grasses to take over and prevents other plants from getting a foothold.(Hitchmough and de la Fleur 2006) Forbs consistently get out-performed by grasses which, in ecological terms, are better generalists (Pywell 2003).

It is not just in terms of species richness that the NVC finds itself inadequate to the task of informing meadow creation in cities, there is also the aesthetic question; NVC informed mixes may not be 'ornamental' enough to win the approval of the urban dweller, itself an essential requirement of meadow creation in an urban context (Luscombe and Scott 2004). That meadows might also need to be attractive to the lay public is not part of the typically rurally founded, professional ecologist's mind set, a fact illustrated by its absence in the literature

(Stevenson 1995, Pywell 2002, Walker, Stevens et al. 2004). The potential barriers to the acceptance of meadows by urban dwellers form a major part of this study .

2.2.3 The culture and value of mown grass, and barriers to its diversification.

The addition of diverse areas of naturalistic vegetation to the suite of vegetation types in city parks, concretely, is to replace small areas of mown grass in city parks. This addition, potentially, proposes a challenge to the culture of the mown lawn and this study will try to identify whether this culture of the mown lawn presents a real barrier to establishing areas of NP, both in terms of management of mown grass, the professional culture that has evolved around the cultivation of mown grass, and expectations of park users around grassland management.

It would be worth exploring, briefly, the history and main arguments in favour of and against the mown lawn. Given that this is a study promoting the cause of ecological planting it is also worth examining closely the potential of mown grass in terms of ecology. Mown grass forms the backdrop to the park user's experience, and looking after has been a constant in the ever changing job descriptions of our greenspace management. Much literature has been devoted to mown grass and it has its champions just as it has its critics ((Gilbert 1991, Fort 2000)

The United Kingdom is a country in which grass flourishes. (Fairbrother 1972) Early agriculture comprised the slow organisation of the wooded landscape into grazed areas bordered by trees. Communal subsistence was dependent on "Common" land that was grazed and even became overgrazed. The enclosure of the landscape into quantifiable, transferable units paved the way for intensive agriculture and developments in agricultural techniques and machinery, as well as the arrival of productive species of grass, in the early twentieth century allowed grass to be cultivated as a crop. Indeed grass covers approximately 30 % of all farmland in the UK, not counting rough grazing (which comprises another 30%). (Hopkins 2008) .This intensive cultivation of grass has required the addition of nutrients, and the refining and breeding of productive species and has fundamentally changed the soil and botanical profile of the UK.

It is in this agricultural context that growing grass for ornamental purposes, or the creation of lawns, goes back many centuries. Early cultivation of turf is thought to have been brought to the UK by the Normans in the guise of Benedictine monks (Fort 2000) and, by the end of the seventeenth century, the cultivation of fine grass in the form of bowling green or ornamental lawn had become general practice in the gardens of the great and the rich. By the middle of the twentieth century, the lawn was an ubiquitous and seemingly unassailable part of our post industrial landscape culture, due in no small part to the urbanisation and suburbanisation, mechanisation and increased leisure time of our changed society. (Fairbrother 1972)

Mown grass is also estimated to cover between 75% and 95% of almost any city park in the UK (Gilbert 1989) and, in its favour, "is the ideal surface for showing off buildings, flower beds, shrubberies and specimen trees, for walking over, lying upon or paying games upon". It is therefore a very good multi-purpose surface that is both comfortable and robust. These qualities, a combination of aesthetic and amenity, have been recognised for centuries; the first quality, the aesthetic quality, is the idea that it "shows off" buildings has echoes of the idea of "contrariety"; a doctrine put forward by John James in 1713, Clerk of works in Greenwich in his book "*The theory and practice of gardening*"(Fort 2000). The idea of contrariety is that the several parts of the garden should be placed in opposition to each other and "a bowling green…is one of the more agreeable parts of the garden and when 'tis rightly placed, nothing is more pleasant to the eye". (Fort 2000)

James also refers to the lawn as a "carpet" and "very smooth and of a lovely green". Fort argues that that notion of "smoothness", as expounded by Edmund Burke in his "*Philosophical Inquiry into the origin of our ideas of the Sublime and the Beautiful*" is an essential quality to beauty "I do not recollect anything beautiful that is not smooth". Fort ridicules this notion but argues that this idea paved the way for the development of lawn as the essential canvas of the landscape garden.

Fort argues that this aesthetic sensibililty was embodied in the gardens of Capability Brown, created in the eighteenth century for hundreds of great gardens in the UK “With Brown came a great deal more grass. Under his direction , it spread over walls and terraces, devouring beds and shrubberies, to the very walls and doors of the mansion; so close that someone complained that the cattle could wander inside” (Fort 2000);

While being very popular lawns have also had their critics. William Robinson, author of the Wild Garden and prolific writer at the end of the nineteenth century and early 20th century gave early warnings that the lawn was being overused as a landscape device. He was an early proponent of ecological type planting and advised mitigating the relatively poor species occurrence in own lawns with areas of naturalised bulbs. He said

“Mowing the grass once a fortnight in pleasure grounds, as now practiced, is a mistake. We want shaven carpets of grass here and there but what nonsense it is to shave it as often as foolish men shave their faces…Who would not rather see the waving grass with countless flowers than a close surface without blossom? Think of the labour wasted in this ridiculous work of cutting the heads off flowers and grass”

Robinson was mostly alarmed by the scale of mowing of the landscape “There are indeed some places where they boast of mowing forty acres”.

It was not only the scale of the close mowing that alarmed Robinson. He saw it as part of a wider picture of over-management of the landscape and his writing reacted against the trend for using exotic bedding plants in park and gardens at the expense of hardy plants and was an advocate of using exotic hardy, not necessarily native, plants in the garden. He advised observing pants in their natural settings and recreating this in the garden. He has been credited for the invention of the “cottage garden style”; the loose arrangement of plants inspired by how they occur in nature. Robinson was not prescriptive about provenance but interested in observing plants as they occur in nature and attempting to replicate their easy co-existence in the garden.

The scale of mowing of grass was also a concern of Nan Fairbrother in her book “New lives New landscapes” (1970). This book scrutinised man made landscapes in the context of rapid social change and urbanisation. It aimed to guide planners of the future to make useful, beautiful and recreational landscapes. Fairbrother saw the over use of lawn, or mown grass as the “path of least resistance”. She spoke of *fitted* carpet complex; “grass exists in thousands of useless patches and dreary expanses without any function….everything is affected by the same obsession with close mowing…every area large or small must be neatly covered with the same short green pile-grass carpeting as an end in itself irrespective of use or appearance”.(Fairbrother 1972)

If Fairbrother and Robinson are to be believed then this “obsession” with close mowing may well be a barrier to naturalistic planting. It is worth pointing out here that she was not just talking about city parks but the wider amenity landscape including verges and roundabouts; Unlike Robinson’s Wild Garden that directly criticised trends in horticultural practice at the end of the nineteenth century, her book, in 1970, was a response to the changed landscape brought about by urbanisation coupled with the rapid explosion of motorcar use and its effect on the landscape.

2.2.4. The wildlife value of mown grass and its improvement; barriers therein

This “uselessness”, in terms of wildlife, of mown grass was questioned in “The Ecology of Urban Habitats”. Mown grass, in this book, was subjected to scrutiny as to its actual wildlife value (Gilbert 1989). Three types of mown grass, high standard, standard and occasionally mown were identified. The former two are limited in terms of wildlife value; high standard grass is mown very regularly to maintain a small species range, as well as enriched with nutrients which favours just a few species of grass. The second, standard grass, is a rye grass (when this is sown it will be sown with other grasses but the reality is they get out competed by the rye grass in a few years). The third is occasionally mown grass. Gilbert identifies that pockets of wildlife occur in small areas of lawns but these are usually related to chance lapses in management ie a relaxation in the mowing regime, and being inaccessible to the mower, on steep banks for example. He

does, however, provide evidence that the greater the age of a lawn, the more diversity will be found in it, and ecological interest. He gives the example of Chatsworth house for example. Lawns, in his view, can be as much a part of the heritage of a park and indeed he says that careful assessment of a mature lawn will reveal the unique landscape history of a given park. (Gilbert 1991)This gives mown grass heritage value in its own right. In the context of this study this is interesting as the areas of wildflowers that were intended to be seen were very much intended as an adjunct, rather than the replacement of, areas of mown grass which can have value in themselves.

There are various methods that can be used to increase the diversity of the mown lawn. One of the oldest and widely used methods is to add hardy, spring flowering, bulbs to the lawn.

"All planting in the grass should be in natural groups or prettily fringed colonies, growing to and fro as they like after planting. Lessons in this grouping are to be had in woods, copses, heaths and meadows, by thise who look about them as they go" (Robinson 1903) .

During their flowering management (mowing, scarifying etc) of the lawn is relaxed. Spring flowering bulbs are fairly self contained and once they have flowered and been given a short time to complete their photosynthetic requirements can be mown to the ground.

While the naturalisation of monocotyledons (or bulbs) is relatively straightforward, and indeed is general practice in amenity greenspace management, the establishment of dicotyledons, flowering plants, is less straightforward. One of the main barriers to the establishment of flowers in grass, as has been alluded to earlier, is competition from grasses and other weeds, whose seeds often reside in the soil that is being sown into (Hitchmough, Paraskevopoulou et al. 2008). Oliver Gilbert proposed that targeted herbicides, ie weedkillers that kill specific species of unwanted plants, can be used as an aide in the establishment of wildflowers in grass.(Gilbert 1991) An experiment was undertaken in which a wildflower-grass mix was sown in 1980 and sprayed 8 months later. Four years later the establishment of flowers was shown to be 600%

more successful on plots that had been treated with a combination of herbicides 8 months after sowing. It is worth noting here that Gilbert had used a “nurse” crop of Rye grass and subsequently sprayed it off. The use of “nurse crops”, ie plants that ameliorate soil nutrient levels to allow desired species to establish was disputed by Hitchmough who says that in the context of establishing NP nurse crops are not suitable, the benefits are limited as they end up competing with the desired species (which is presumably why Gilbert had sprayed them off 8 months after sowing). In terms of herbicides Hitchmough advises using a herbicide once or twice on a given site prior to sowing, to kill all preexisiting vegetation. giving sown seeds a good chance of establishing.(Hitchmough 2004) He also recommends a subsequent spreading of a thick layer of mulch, preferably sand, into which sown seeds will germinate. This layer will be “sterile”, it will not carry a weed seed bank ((Hitchmough, de la Fleur et al. 2004). This has been proven to be one of the most effective ways to ensure the success of flower rich area of planting. This was the methodology used in this study.

Another way to reduce competition from dominant grass species and other weeds is to weaken them by cutting them down at key points in the growing season**.** This must be undertaken at specific times of year but can be counterproductive due to the removal of “photosynthetic potential” of all the species (Hitchmough 2004). Hitchmough advises that cutting as a form of weed management is suitable for certain types of plant species, the “rosette formers” for example, that grow close to the ground and therefore retain this potential close to the ground. Another method of weed control, derived from the management of prairie planting, is burning of weeds in the spring which has been proven to be effective but is not always possible (in fact is rarely possible) in urban and amenity situations. (Hitchmough 2004)

Another barrier to naturalistic planting is watering. The key factor that will ensure the success of all herbaceous plants is soil moisture. The optimal sowing time generally for herbaceous planting coincides with periods of the lowest moisture stress that are warm enough for germination to occur. (Hitchmough and Dunnett 2004). Hitchmough provides optimal sowing time for different types of herbaceous vegetation (of different provenance) in his chapter in “The Dynamic Landscape”. The seeds to be used in the present study fall into the “Eurasian meadow grasses and forbs group” and can be sown either between March and

June, August – September or October to March. This winter period was deemed the most appropriate as "*Primula Veris*" was one of the natives used and this benefits from a lengthy period of winter chilling to germinate. (Hitchmough 2004)

2.3 Landscape aesthetics and attitudes

2.3.1 Landscape aesthetics

Having explored the environmental and horticultural context in which this study is being undertaken, and summarized some of the accepted biological barriers to establishing naturalistic planting in parks the next part of the literature review will attempt to lay down the foundation for an exploration of the cultural barriers to naturalistic planting in parks; factors that may influence the acceptance of naturalistic planting by park users.

2.3.1.1 Scenic aesthetics

Plants and individual vegetation types are the small units in the wider framework of landscape and nature. In this context, an exploration of people's perception of landscape and nature, and more concretely of their preferences for certain types of nature may help to understand why they prefer, or accept, one type of vegetation over another. Early studies in the field of landscape preference were anchored in and, ultimately, support a "habitat theory" (Jorgensen 2004) contending that human beings evolved in a savannah landscape that provided them with both prospect and refuge (Appleton 1975) in the context of hunting for prey. "Prospect" is embodied in vistas and panoramas, and refuge in hides, shelters and natural refuges such as woods. In this evolutionary approach Appleton argued that human beings are hardwired to find landscapes that provide both prospect and refuge aesthetically appealing, even though the days of hunting for prey are now past. By the same token humans express a negative preference for enclosed landscapes that have no aspect as they are perceived to invoke danger (Herzog and Kropscott 2004, Jorgensen, Hitchmough et al. 2007). The popularity of the wide, smooth and vista and panorama rich landscapes of the eighteenth century, whose main medium is the mown lawn, has been explained by this theory.

The prospect refuge theory is a biological theory, related to information processing about the given landscape and its potential as an aide to human survival. It paved the way for other biological theories related to urban landscapes

in which these notions of prospect and refuge were essentially replaced by now widely accepted matrix of legibility, mystery, complexity and coherence.(Jorgensen 2004) These factors refer to the different ways in which humans obtain information about their environment. Mystery and complexity require "exploration" and legibility and coherence afford "understanding" of a given landscape. These are the major variables that influence preference (Kaplan 1983, Kaplan, Kaplan et al. 1998, Khan 1999). The Kaplans found that coherence and mystery were the most influential factors that influence preference (these two elements are embodied in a curving sightline, for example) and used this framework to explain, again, the popularity of the English landscape movement. Jorgensen suggests that this landscape movement has become over simplified and the "urban savannah" style "is essentially a paradigm for large scale landscapes that has been monotonously applied without differentiation to large and small scale landscapes in cities (this resonates with Fairbrother's "fitted carpet complex" whereby mown grass covers too many surfaces).

This body of work based on preferences based on biology (or "innate preference"(Jorgensen 2004) has been also called scenic aesthetics (Gobster, Nassauer et al. 2007). This approach was explored within the wider "biophilia" framework at specific vegetation level in the literature by Orions and Heerwagon. They expanded the prospect/refuge framework to explore types of information that humans use to assess the habitability of environments, and identified resource availability, shelter and predator protection, hazard cues, and finally, wayfinding and movement. They undertook studies that showed that peoples' tree preference for their gardens, in terms of shape, was influenced by trunk pattern, canopy shape and (poor) health indicators (such as dead branches and deformation). They demonstrated a clear functional-evolutionary perspective on the relationship between trees and humans. They also suggested that greenness and the leafing of trees and shrubs would signal the presence of large mammals, and flowers; resource availability. In the context of this study their untested hypotheses about flowers is relevant. From a functional evolutionary perspective flowering plants are a potential source of food. They signal future availability of fruits and honey while also providing cues about when and where the fruits can be found, and will have a positive influence on preference for a given vegetation type. If flowers and greenness positively influence preference, then it would make

sense that a combination of both will be the preferred vegetation type and poor "health indicators", such as deformation or disease, may negatively influence preference.

2.3.1.2 Other approaches to landscape aesthetics.

Alternative approaches to landscape aesthetics were summarised by Jorgensen in her chapter "The social and cultural context of ecological planting" (Jorgensen 2004). In this chapter Jorgensen draws attention to the limitations of scenic/innate or biological aesthetics and brings to the fore other facets of landscape aesthetics, namely cultural and social based approaches. She identified Bourassa's "the aesthetics of Landscape" as marking a major landmark towards pointing out other dimensions in landscape aesthetics (Jorgensen 2004).
Bourassa, prior to the publication of this book, anchored landscape aesthetics into a wider developmental psychological framework, highlighting the complexity of aesthetic judgements. He drew attention to the different facets of information processing by humans using Vygotsy's (the Soviet developmental psychologist) phylogenesis (biological development), sociogenesis (social development) and ontogenesis (individual development.
Bourassa postulated that, based on the interaction of the above, personal and cultural factors may influence landscape preference and that they can interact with and sometimes contradict purely biological factors. For example, at a very simple level, the innate, "biophilic" aesthetic pleasure of seeing the full grapes in a field of ripening vines may be intensified by the cognitive pleasure of knowing they will be duly harvested and made into wine.
The work of Nassauer in the 1990s explored further the influence of culture on landscape perception. Nassauer identified four theoretical frameworks in which landscape preference could be enacted: biological (see above); information processing theories whereby landscapes were perceived in relation to the opportunities, particularly of locomotion, that they afforded; transactional theories based on the idea that landscape perception is an embedded, multimodal experience, perception based on individual's embeddedness within a landscape. And finally behavioural theories (Nassauer 1995). She also, importantly, said that science and culture interact with ecology separately. Concretely what people see as "natural" (and often they therefore find beautiful)

may have little relevance to ecological health. For example people may find a Capability Brown landscape beautiful because they perceive it as being natural but it may have little ecological value in comparison with an area of spontaneous vegetation in a derelict urban situation, which may have high ecological value. Nassauer's differentiation between the cultural concepts of natural and ecological health paved the way for her influential arguments in favour of areas of wildlife having tidy edges. Her paper in 1995 "Messy ecosystems, orderly frames" provided evidence that the "language of human intent" would help people to accept ecological landscapes. Nassauer recommended that "cues to care" could be used to help people accept ecological innovations in their landscapes; these are obviously human interventions that reassure people of "care" (or non neglect). These cues can take the form of mowing the edges of wilder habitats or strips through meadows or prairies, planting flowering trees and plants that provide visual clues as to human intent or even having bright flowers for the first few seasons of a new planting to help people accept it, wildlife feeders, bold patterns in the landscape, trimmed plants, fences and other architectural details and foundation planting near houses(Nassauer 1995).

In their 2007 paper *"The Shared Landscape, what does aesthetics have to do with ecology"* Gobster and Nassauer identified the "perceptible realm". This was the area where human and *environmental* scales meet. It is in this realm that *ecological aesthetics* can be enacted. They also identified that the scenic aesthetics based on biology can coexist with a kind of situational aesthetics in which other dimensions have an influence, such as experience, identity, and, again perceived care (Gobster, Nassauer et al. 2007). This paper drew attention to many different types of aesthetic experience in landscape: one based on wildness, one based on care, one based on attachment and history and a metropolitan aesthetics experience based on diversity and heterogeneity. This paper drew attention to the far-reaching and multifaceted discipline of ecological aesthetics and argued that *ecology* and design in landscape should not be in conflict with each other - in fact quite the opposite.

This paper really argued the case for design being necessary for enhancing ecological function, basically positioning ecological vegetation in a theoretical framework paving the way for “ecological design” (Nassauer 1995).

It was with these ideas in mind that the questionnaires abut naturalistic planting were designed. Areas of meadow planting, with flowers and grasses at different densities would be planted in parks. People would be asked their preferred plot. Would this be the most flowery, the least weedy? The most diverse in terms of species. Would people prefer this type of vegetation to other types of vegetation in the park. Would evidence of “care” be an influencing factor over people’s preferences; would “framing” areas of planting make it more acceptable? Would they like the colourful plots and to what degree.

2.3.2 Attitude and preference

This exploration of barriers to naturalistic planting sets out to try to understand whether park users and greenspace managers actually want to see this type pf planting in parks, but park users, as are greenspace employees are a diverse group of individuals who use parks for many different reasons. This study planned to take a representative sample of park users of a given park, and greenspace employees and gain an understanding of their preference for different type of planting. Representative of a park user population in terms of age, gender, ethnicity, socio economic profile, environmental sensibility and familiarity with this type of planting. It would try to tease out whether any of these demographic factors might have an influence over peoples’ preference for a certain type of planting and therefore constitute a barrier.

2.3.2.1 Demographic Factors that may influence preference.

Using demography as a way to explore landscape preference is a departure from the phylogenic approach. Bourassa might call it a sociogenic approach. Some studies have explored whether demographic factors have an influence on landscape preference (Lyons 1983). The most studied factors are age, familiarity, gender and occupation.

Two studies in the early 1980s argued powerfully that preference is dependant on cumulated knowledge and experience. It did so using age and gender. A study by

Ball and Falk in 1982 and subsequent study in 1983 explored the affect of age and familiarity on landscape preference. In the Ball and Falk study, Slides of 5 "biomes" were shown in fast succession to a sample of 548 subjects (who were divided into groups and shown 20 slides per group). The subjects were groups of children, a group of biology teachers, a group of foresters, students. The subjects were asked to state two types of preference in terms of where they would like to live, and where they would like to visit. The study showed that the younger the age of respondents, the more they preferred the "Savannah"-like landscapes (trees in open ground). Preference for other biomes such as rainforest, coniferous forest, desert, temperate deciduous forest increased with age. The foresters, who were treated separately, expressed a stronger preference for coniferous forests. The findings were discussed in depth but concluded with a two part theory; The first was that there is some innate preference for savannah-like landscapes, arising from a long evolutionary history of settling in a Savannah, that expresses itself most strongly in childhood, however with increasing age preference for environments with which people are more familiar rise. Generally, there was no significant difference in between preference for the Savannah-like landscapes and others.

Lyons followed this study with a study that set out build upon the hypothesis that landscape preference is influenced by experience. She, again, established that age is influential over landscape preference; she found that young people express the highest preference for landscapes in general, with Savannah and deciduous forest being the most preferred but that this preference decreases and plateaus at adolescence and early adulthood, and subsequently drops further.

Using a carefully screened selection of the Balling and Falk slides, and conducting a careful triage of the sample to ensure that subjects originated from some of the different landscape biomes Lyons also established that preference is influenced by background or familiarity; respondents from desert states in the US expressed a preference for desert biomes, likewise those from deciduous forest biomes expressed a preference for the latter. As Jorgensen says, as we become older, more 'cultured' our appreciation changes; knowledge enters the fore (Jorgensen 2004). Kahn (1999) argued that while the biophilic tendency is certainly present, the human relationship with nature is shaped by experience. He argued that the structural developmental approach is the most powerful one to explain

differences in perception of nature in individuals. His methodologies were based in interviewing large cohorts of young people, and scrutinising their perception of their surroundings. One of his main findings to support the structural developmental argument was on the subject of pollution. He found that, out of a sample of 72 children between the ages of 7 and 11 living in Houston, one third of them were not aware they were living in a very polluted environment despite the presence of litter and sewage that featured in their day to day existence. However most of them were aware of pollution being a bad thing. Kahn argued that "environmental generational amnesia" meant that if children had nothing to compare their environment to they would have no way of accurately assessing their environment. Thus the more people know, the greater their qualitative appreciation of the natural world.

On the subject of gender Lyons established that preference for landscapes between the genders may diverge at adolescence, as she found a significant difference between preference ratings regarding a desert scene after grade 9 (14-15 year olds) although she did not qualify the nature of that difference. She concluded that landscape preference is a cumulative process that reflects the action, through the lifecycle, of socially differentiating attributes such as age, gender, place of residence and environmental experience.

In terms of this study, in relation to age and other demographics, one might expect age and associated experience or knowledge to influence preference over naturalistic planting in plants.

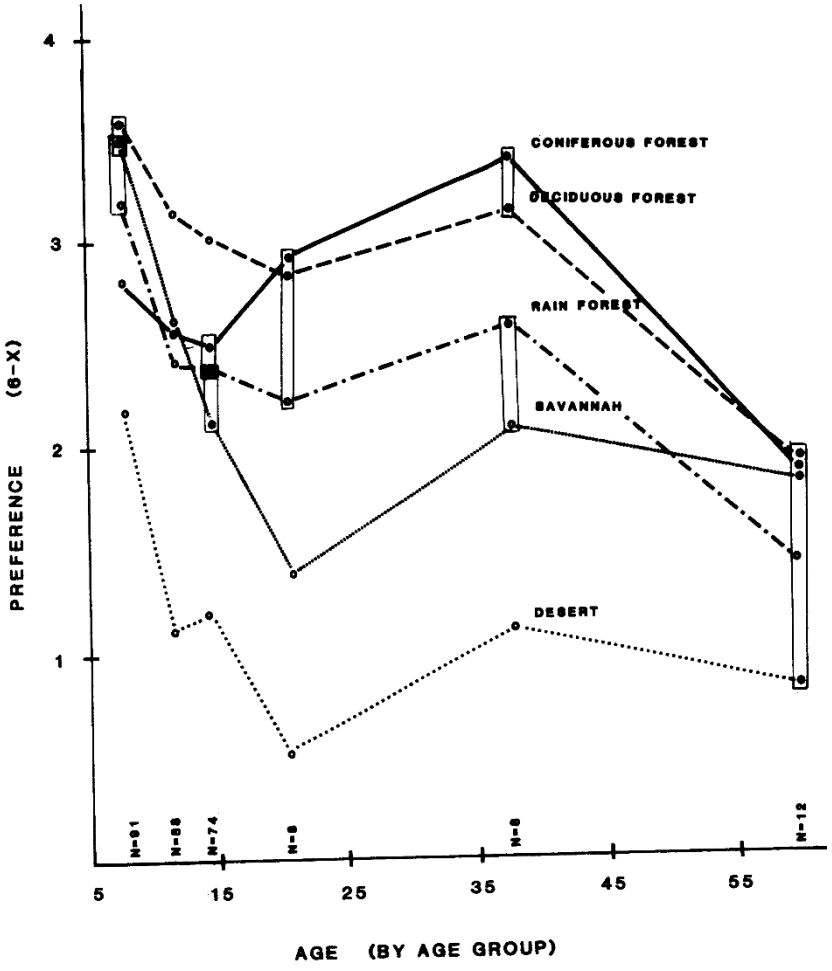


Figure 2: Mean Biome Preferences of Six Age Groups for Five Biomes

NOTE: Inclusion in the box indicates that values are not significantly different ($p < .05$). Symbols are:
Tropical Rain Forest (·—·—·—·), Temperate Deciduous Forest (— — —), Northern Coniferous Forest (———), Savannah (·····), and Desert (·····).

source

2.3.2.2 Familiarity

This idea of experience influencing preference was discussed in Jorgensen's chapter on the social and cultural context of ecological planting. She used the term "familiarity", a notion that had been explored prior to the Balling and Falk study, within the wider biological framework of the Kaplans' work. Indeed two studies by Rachel Kaplan in 1977 explored familiarity. One study showed that preference for a storm water drain was higher amongst people who had previous experience of that particular view(Jorgensen 2004). Another study, however,

showed that people displayed lower preferences for roadside scenes from their own region than visitors.

A study by Dearden in 1984 explored “familiarity” as a discreet variable in landscape perception (alongside environmental awareness, influence of training in the planning profession and various socioeconomic factors). This study demonstrated that the lower the density of housing that people came from, the higher their preference for wilderness. This preference was also proportional to the amount of time spent actually living in low density housing, with those who had lived in it for up to five years expressing a preference for rural landscapes, and those who had spent longer living in low density housing expressing preference for both rural and wild landscapes. Residents of high density inner city housing, and therefore arguably less familiar with wilderness, preferred rural and periurban landscapes.

Some studies have investigated preference of populations from completely different landscape types (such as Americans and aboriginal Australians for example.(Herzog, Herbert et al. 2000) and found that familiarity with landscape type for a will influence, positively, preference.

In terms of this study park users in inner city environments were to be asked about their preference. Would the fact that they may have little experience of this type of planting, and little access to the countryside have an influence over their preference for the naturalistic planting they were being asked about. They would be asked where they had seen this type of planting before and what type of other green spaces they had access to often, the results would be explored to see if access to other types of greenspace (and therefore inferred familiarity with more naturalistic type planting) had an influence over their preference for NP.

2.3.2.3 Environmental knowledge and ecocentrism and its influence on preference

As well as an individual’s familiarity with a given landscape type, as has been discussed, Dearden’s paper ventured into culture, suggesting that “environmental awareness” might have an influence on landscape perception. This study showed that being a member of the “Sierra club”, would have a positive influence on preference for wilderness type landscapes. This idea of environmental awareness, as a cultural construct, having an influence over landscape preference was

considered by Jorgensen in her chapter the “Social and Cultural context of ecological plantings”

Awareness of the environment, or environmental sensibility, can be measured within the framework of what is commonly known as the New Environmental Paradigm or NEP. The NEP is a measure based on how much a respondent agrees of disagrees with a carefully worded statement, with the final score placing them on a scale. In 1978, when it was first proposed, the scale comprised 12 statements (Dunlap and Vanliere 1978), which were later revised to 15 (Dunlap, Van Liere et al. 2000). At one end of one of the scale they were anthropocentric and at the other ecocentric (Van Den Born, Lenders et al. 2001). A study to test the validity of the eco-anthropocentrism scale in 1994 showed it was a valid predictor of people’s conserving behaviours independent of an environmental attitude scale. There have been studies showing how this ecocentric sensibility can have an influence on landscape perception. One such study showed that there was a link between people’s ecocentric outlook and a preference for moderate to dense vegetation in parks (Bjerke, Ostdahl et al. 2006). Another study in 1996 showed that membership of a [wildlife] organisation and expertise influenced people’s preference positively or negatively for three types of landscape : human-influenced, human-dominated and intensive farming scenes. (Strumse 1996). The study by Dearden in 1984 explored the influence of four factors, one of which was ecocentrism (alongside familiarity, socioeconomic variables and professional training), on preference. It found that being a member of the Sierra Club of America (ie ecocentric) positively correlated with preference for wilderness while residents of low-rise buildings expressed more of a preference for rural and wilderness scenes that residents of high-rise buildings (Dearden 1984).

2.3.2.4. Attitudes within parks themselves and amongst greenspace management towards naturalistic planting

Having explored broadly factors that may influence peoples’ aesthetic perceptions of landscape, the next section of the literature review will consider city parks themselves, their users and the people looking after them. It will summarize some of the main studies that have explored this area and outline how they anchor the current study into a wider framework of the exploration of park usership.

The Greenwich Open Space project, by Carolyn Harrison and Jacquelin Burgess in the 1980s used qualitative methods to gain an understanding of what peoples' expectations are of their open spaces. The study was undertaken in some way to contribute to a rising but perceptible tension between park managers and environmentalists about the role of open spaces in the city; around this time, as will be explored later in the chapter. Government cuts were throwing nature conservation and parks and leisure management ever closer (the embodiment of which was the "nature reserve"; a subject that will be considered later in this chapter). Parks' management were arguing that a hierarchy of open spaces should be offered to city dwellers, who in theory could choose their open space according to the role at any given time they wanted it to fulfil. This allowed leisure services to minimally intervene in a large number of very local, small, monotonous green spaces. The Burgess and Harrison study sought to discover what city dwellers, across the socioeconomic spectrum, expect from their open spaces. It used in-depth group discussion techniques between members of a four part sample. Each group (the smallest was 6 the largest 10) was carefully selected to represent the diverse ethnic and socioeconomic profile of an inner city. The groups were also carefully screened for suitability. The study found that people want to regularly use an open space very local to them, and visit on foot. It found that respondents wanted these spaces to offer them a variety of experiences, the main one being to sit peacefully and securely, away from threat and danger, alone or with friends. It found that people wanted nature in all its forms to be available to their children so that it may enrich their childrens' quest for play and adventure based on their own memories of childhood and the spontaneous exploration of the natural world. Howeve, at the time of the study, the need for the natural world was contrasted by ambivalence due to antisocial behaviour happening around more natural landscapes (litter and syringes for example) It found that people were increasingly feeling threatened and abandoned by the lack of care in their local greenspace and found "Savannah" landscapes and sport pitches the most unfriendly. The study concluded that parks and open space were not only vital for people to learn about nature, but also to "learn about themselves".
The Burgess, Harrison and Limb study was particularly relevant to this study for several reasons. Firstly it studied open space users in cities using a mixed method approach; both surveys and group discussions. The second it aimed to challenge

accepted trends in management direction of open spaces at the time, by giving voice to a representative section of potential park users in a given area. This study also, crucially, revealed how nuanced peoples' perceptions and interactions with their open spaces are, and how they are in a daily relationship with greenspace managers via their local greenspace. In some way the investigation into the barriers into naturalistic planting in parks hoped too to expose and possibly improve this relationship, by trying to expose almost invisible fault lines in management practice.

It is not only the attitudes of park users that will be explored in this particular research project, but also the attitudes of people looking after Green space. The attitudes of greenspace managers and professionals generally as well as park users to naturalistic vegetation in relation to more formal vegetation was explored by Ozguner and Kendle in 2006 and 2007.

The 2006 study, the survey of park users, asked randomly selected visitors to state their preference for naturalistic or formal landscapes. The sample size was 200; 100 for a natural setting and 100 for a formal setting. The naturalistic setting was a park in Sheffield called Endcliffe park that was originally a piece of countryside that had been "encapsulated" by urban development. It comprised a steep, wooded slope (full of native trees) and stream. The formal setting was Sheffield botanic garden, a typical, gardenesque, park dating from 1836 characterised by small, highly managed landscapes devoted to the cultivation of over 5000 species of plant. The survey asked the respondents about two sites by asking them to describe them, and choose words that they felt most fitted the description of the sites, according to a standard method for landscape perception put forward by Swanwick in 1991 (Swanwick 1991). Their preference for the sites was then explored by asking respondents to choose their most liked features, saying how much they would like to see them changed and then being directly asked what they preferred in terms of outdoor spaces. The findings were that people can derive pleasure from both types of landscape and that different landscapes offer different benefits. Formal landscapes are seen as "peaceful" and significantly more stress relieving while naturalistic were seen as places to socialise and give a feeling of freedom. Formal landscapes were also perceived as being slightly safer than naturalistic ones, and evidence of care a requirement in both the sites.

When asked about vegetation preference within a formal setting, people said that they preferred the tidy flower beds of the botanical garden, but within the naturalistic setting people said they preferred trees and grass. (Ozguner and Kendle 2006)

This study did not use photographs but recruited respondents as they entered the park; the authors argued that using slides or photographs to gauge landscape preference is limited by the two dimensions. The authors did, however, express concerns about using randomly recruited park users in situ as they said that there was no way of knowing how much the variable of personality or psychological state might have an influence on preference (the latter might be influenced by physical conditions such as weather, time of day or any extenuating factors that might upset the balance of mind of a park user). The sampling technique used here is close to the one employed in this study.

The other survey by Ozguner and Kendle examined the attitudes of landscape managers and other professionals to naturalistic planting.(Ozguner, Kendle et al. 2007) It took three groups of professionals- those involved in conservation, landscape designers and local authority managers - and examined their attitudes to naturalistic planting through a postal survey (N=265). The study concluded that naturalistic planting was popular with all three of the groups. The conservation professionals were the group that expressed a preference for naturalistic planting while the other two groups were in agreement that both naturalistic and formal planting should co-exist in an urban context. This paper argued that naturalistic planting was not a matter of personal preference but dependent on a number of factors such as "client requirements", "site suitability" and "appropriateness of design". Local authorities were the only ones who mentioned cost. There were some embedded ideas revealed in this survey about local authorities' ideas about what their park users want

"*Working for a local authority we are guided by council policy and public opinion. The British public still consider colourful as quality*" (L.120). Another respondent prefers to use formal style because of "*the conservative attitudes to traditional values by the public especially by the elderly population*" (L.71).
Similarly, one of the respondents stated that "*We do not create naturalistic landscapes in cities as they are perceived as untidy and clients do not appreciate*"(Ozguner, Kendle et al. 2007)

Respondents also brought up the difficulty of establishing areas of naturalistic planting and the technical support that was needed being a barrier. Some of the

professionals stated that formal planting was suitable for cities and the reason to choose it over naturalistic was “public demand”. Colour was also mentioned by one respondent as being suitable as an antidote to the greyness of cities. One interesting finding from this study was that a good proportion of the local authority respondents expressed the fact that they did not feel comfortable working with formal landscapes, despite the fact that this was what they spent most of their time doing, suggesting a degree of lack of agency over choices in planting, and a disjunct between their work and aspirations.

At an anecdotal level there is certainly a strong commitment to “gardenesque” type planting, such as seasonal annual bedding, shrub borders and herbaceous borders. In the process of carrying out the research to date The author has encountered this regularly in discussion with green space staff. The horticultural skills that there are at management level are almost certainly concentrated in this area. The Burgess, Harrison and Limb study suggested that traditional methods of urban conservation; setting aside areas of open space for nature, in no way to catered for park users need for natural experiences. (Burgess, Harrison et al. 1988). This may go in some way to explain tensions between the greenspace managers and the conservationists. The study identified significant differences between different groups of professionals in greenspace management in relation to their attitudes as to the appropriateness of naturalistic planting in parks. Professionals from the conservation sector differed significantly to the other two groups, expressing a strong preference for naturalistic planting. (Ozguner, Kendle et al. 2007) The ideological factionalisation of greenspace management within a local authority may well present a barrier to innovation in this area, despite the fact that on paper almost all respondents are in favour of NP. This separation may prevents a shift in the ideological mind set, what we could loosely call an “approach”,of those in charge of planting in public parks. It is worth re-emphasising here that evidence of this is, at present, still anecdotal and should be explored in the study in the interviewing of the carefully selected group of professionals that will make up the sample.

2.3.2.5 Attitudes towards different types of vegetation

Acceptance of, and preference for, particular vegetation types has been explored. Studies have shown that people will accept 'wild' vegetation and naturalness if the edges of it are neat and tidy. People are said to respond positively to "human intent" (Hands and Brown 2002). The 2002 Hands and Brown study explored the effect of "care" or human intent and colour on peoples acceptance of vegetation, in this case on rehabilitation sites. This study used photo surrogates on 42 employees of a company that was in the process of making a decision about how a 200 acre rehabilitation site should be managed, in terms of vegetation (or whether it should be managed at all). It asked them to rate scenes of differing colour content and diversity, and levels of landscape management. The surveys were administered over time by leaving copies of them in break areas. The study found that people like landscapes to look natural, but not "too natural" ie they want to see some evidence of management, and that they want a certain amount of colour in naturalistic planting but again, not too much especially in mature vegetation. Scenes with colour in them were more highly rated than scenes without colour, however scenes with "mid-range" colour content were poorly differentiated. Amongst the negative comments were "Too much colour" as well as "too little colour", and it was found that colour at the early stages of establishment had a positive influence on preference. As far as negative preference was concerned, "sparseness" at immaturity was found to have a negative effect on preference. In summary Hands and Brown found that "lushness", diversity and stage of establishment all bore an influence on people's preferences regarding naturalistic vegetation, and again, that the amount and diversity of colour is positively correlated with preference but this relationship is not linear; These subtle differences in preference in naturalistic planting will be further scrutinised by the author in her study, with areas of meadow planting comprising different ratios of flower quantity and diversity to grasses. "Cues to care" (Nassauer 1995) is a widely accepted paradigm in which people will accept naturalistic vegetation. In her much cited paper "Messy ecosystems, orderly frames", Nassauer identified that "landscape language" has to communicate human intention ie people like to feel that landscapes are tended, even if they are "wild". Her study summarized years of research she had undertaken to build a strong evidence base for "care" being the most powerful driver in landscape preference. She suggested that if people are not educated in ecological value, it

will be easier to make them accept ecological planting if it is "framed" ie the edges of it are tidy. The underlying theory behind this idea is that what people perceive as "natural" does not necessarily relate to ecological health. Poorly perceived areas of spontaneous vegetation can be the healthiest in terms of ecological health, but seen as evidence of neglect by the general public. This theory has proved very influential in landscape management, with differential mowing becoming ever more present and "cues to care"(Nassauer 1995) are increasing common reference points for certain sectors of landscape management.

There have been other, specifically vegetation focussed, studies of perception. One of these vegetation types is American **prairie** vegetation in its natural state Although these relate to a specific vegetation type, they interpret peoples' attitude to planting within the Kaplans' legibility/mystery/complexity/coherence framework (Keane 1990). Categories that influence preference were identified in the studies using statistical analysis. These categories were *distant views (least popular), foreground grass, warm hued colour, foreground texture and wooded valleys (most popular).* The methodology employed by these studies is centred on the use of photographs or slides. Specifics such as colour and structure of individual plant communities, grassiness, greenness and flowering are not touched upon.

A relatively recent study undertaken in Japan regarding preference for **street flowers** goes into more detail. (Todorova, Shoichiro et al. 2004) This study used photomontages to explore people's preferred vegetation type of street planting; planting in discreet beds between pavement and road. It concluded that, in the context of street planting, trees are people's preferred vegetation type and trees underplanted planted with **low colourful flowers are** the preferred combination. Height and structure were considered more important than colour in the streetscape and there were slight differences in responses by gender (particularly in relation to feelings of safety; tall flowers were considered slightly less safe) and age (in relation to order: older people were shown to be slightly more tolerant of tall chaotic flowers than their younger counterparts). Shape of planting was also shown to have an effect of preference. The flower species used in the study for "low" plants were petunias and tagetes, the tall species *Althea rosea.* However, as the author stated, *Althea rosea* is a common weed in Sapporo, the town in

which the study was undertaken, so the negative preference may have been influenced by some other cultural dimension that was not height (such as negative familarity). This was mentioned in the conclusion. The context of the research was street planting; This study serves to show how vegetation preference is context related. In the case of the Saporro study we can infer that when a surface has to be shared between cars, pedestrians and vegetation, while being absolutely necessary the latter must be very well behaved ie transparent, unthreatening and decorative. Although the findings indicated that height and structure were influential, Hands and Brown (2002) established that visual preference of ecological rehabilitation of decommissioned industrial lands was positively correlated with the amount and diversity of colour in the vegetation (Hands and Brown 2002).

Very few studies have been undertaken that actually investigate attitudes to naturalistic vegetation, particularly in the urban context. Some initial studies undertaken by researchers at the University of Sheffield indicate that perception of this type of planting is potentially positive but that this depends upon how colourful the vegetation is (Zhang 2007) and how that colour is distributed (Dai 2000, Atha 2003). Colour can actually be used to mitigate unfavourable effect such as height (Hitchmough 2004) in vegetation. An interesting study presented in an unpublished Masters thesis identified that people were potentially less prescriptive in their likes and dislikes if they were familiar and had prior knowledge of naturalistic planting: they minded less senescence or "brownness" at the end of the season (Mynott 2001). Further studies are being undertaken in this field (Jorgensen 2007).

2.3.2.6 Embedded attitudes towards vegetation

Lindemann-Matthies (2007) attempted to establish the presence of wildflower meadows as part of our **collective cultural imagination** (and therefore important). Using a planting experiment in a Swiss botanic garden, people were asked to create a meadow community from their imagination. Some evidence emerged that study participants had an aesthetic affinity with meadow vegetation, and could conjure a meadow-like collection of plants from their imagination, although the sample was restricted to visitors to a botanical garden and arguably not representative of the populous as a whole (Lindemann-Matthies and Bose 2007). Meadows are an extremely powerful idea in a Swiss popular

culture still strongly shaped by rural notions and the findings of this study are perhaps difficult to apply to the average inner city park user in the UK.

2.4 Organisations. Funding.Cuts. Structural and bureaucratic barriers in greenspace management.

It is not only the perception of the general public that is influential in shaping landscape and vegetation practice; green space maintenance and management staff also have an effect. The absence of naturalistic planting in most inner city parks could be due to the park user not wanting them, but, given its almost complete absence, it is most likely due to those in charge of the planting either not wishing to create meadows or failing in attempts to do so (Baines 1989, Yates 1991).

Naturalistic planting in public parks is a subject that is disparately represented in the literature. A Masters thesis from 1990 (that was published as a book by the University of Manchester) (Yates and Ruff 1991) summarised the challenges for local authorities in undertaking this. It listed money as a barrier: gang-mown grass was the cheapest form of vegetation to create and maintain and there was a lack of capital funding available. This supports the "path of least resistance" (Gilbert 1991) The Yates and Ruff report advised that, after capital funding had been found to initiate the projects, extra staff would have to be employed in the form of ranger services "to counteract people's fears". This report also suggested that organisational changes would have to be made. The report also alluded to intra-institutional communication issues being a barrier and suggested that parks management was no longer a clear hierarchy, with parks now coming under the auspices of various different departments. The report suggested setting up an "urban wildlife project" that would be the "prime mover", ie initiator or champion of innovations in planting. It did not, however, touch upon which formal bodies are responsible for the protection and promotion of nature and species diversity in parks.

This question of who, within local authorities, would be responsible for facilitating and orchestrating a change towards a more naturalistic approach to decisions about vegetation is one worth exploring. This has been explored but there is not a

huge consensus about who is responsible; local authorities use different means and have highly differing contractual arrangements to ensure biological diversity in their open spaces (CABE 2006). Traditionally one might expect the countryside management department within a local authority to be a driver to a more ecological approach in planting in parks. Ian Rotherhams "The Rise and Fall of countryside management" gives clues to potential barriers to this type of planting. This comprehensive history of countryside management, as a public service, shows how nature was protected, promoted and made universally available to our increasingly urbanised society from 1900 – present. Through national legislation and associated funding every local authority, urban and non urban, was given the opportunity to protect and promote the value of rural nature. This was embodied by rangers, conservation sections, and countryside management departments delivering the remit of the Countryside Commission (which later became the Countryside Agency, then English Nature) devoted to the protection and promotion of wildlife. With social change, increasing urbanisation and the ever increasing capitalist, neo liberal, agenda of successive UK governments, particularly in relation to planning, these non-statutory countryside services saw their role being stripped away. (Rotherham 2015)

In terms of our study, the unique and discreet history of countryside services unfolded independently of Park and Leisure services. While many local authorities created business units called "Environment services", many retained traditional structures of parks being under leisure services. Therefore for many many years within local authorities there has been a deep structural divide between parks and countryside management, and a divide between their working practices. The Rise and Fall of countryside management does propose that "champions" are a necessary tool in the protection of nature in the UK ie individuals or organisations whose purpose is to champion the interests of the countryside. This would appear to be borne out by the report "Making contracts work for wildlife". In each of the case studies there were individuals or organisations whose purpose was to forward the cause of biodiversity in Urban Parks (CABE 2006)

The Yates report raised Compulsory competitive tendering (CCT) as being a potential barrier to naturalistic planting. It was unable to state whether CCT was a barrier as it had only come in two years earlier, but it did draw attention to the

fundamental break in the relationship between the managers who had become "clients" and the parks maintenance teams who had become "service providers". CCT, at the time, was also seen as a threat to community participation. The report ends with recommendations and hopes that the "freedom" of CCT will allow contracts to become tailored to increase naturalistic planting in parks. A study bought out by CABE in 2006, "Making Contracts work for wildlife: how to encourage biodiversity in urban parks" used case studies of some local authorities and organisations, not all in the UK, to illustrate various ways that local authorities could encourage biodiversity in their parks. The case studies were wide ranging and mechanisms to increase biodiversity ranged from using staff to training to strategic planning. This report also tackled the potential barrier to naturalistic planting presented by inflexible contracts between local authorities, the clients, and grounds maintenance organisations. The report recommended that grounds maintenance contracts become "output based" ie the desired outcome is agreed in the contract; for example grass should be kept to 100 mm- rather than "input" based which is based on operations happening at a certain frequency. The former allows contractors to be more responsive to external factors; for example if it rains a lot more mowing might be required to meet the outcome or of it is exceptionally hot and sunny the bins in parks might be emptied more regularly. This, it was thought, would be suitable for the dynamic and changing nature of naturalistic vegetation management. This outcome based approach also allowed outcomes to be pursued over several growing seasons. Two of the local authorities represented were heavily involved with expert organisations (who have also been used in this study). (CABE 2006).

2.5 The health of UK parks today

No study of naturalistic planting in inner city parks can ignore the national situation of city parks today. This study will go to the heart of local authorities and look at the individuals and cultures within them. The importance of the political and socio-economic background cannot be under-estimated. Historically, cumulative cuts estimated at £130 billion were inflicted on parks between 1981 and 2001 (Urban Parks Forum 2001), precipitating a downward spiral of vandalism, litter and neglect. However, since 1996 more than £400

million had been invested in UK parks by the heritage lottery fund. Until 2010 it looked like fortunes of British parks had turned around with the government's Safer Cleaner Safer Greener communities initiative and the commitment of funding to ensure they happened (CABE 2005). However, when the coalition government took over in 2010 it announced that it planned, in the interests of deficit reduction, to make cuts to public spending of £81 billion in the next five years. Each government department had their budget cut by an average of 19%. These cuts were underpinned by the intention to remove responsibility for services from central government to the community and volunteers. So called "Big Society" would step in and take over some public service provision. As Rotherham says (in relation to countryside management) the reality is that within many local authorities core services and skills have been axed to the extent that environmental services barely function"(Rotherham 2015). Parks budgets too have been slashed and staffing reduced, particularly at management level (Heritage Lottery Fund 2014). Both countryside management and leisure services are non statutory services. Local authorities can reduce and remove them as they see fit. The interviews in this study were conducted in 2010 therefore innovation would be being discussed in the context of the economic stress on parks in the and 1990s and subsequent turning around of their fortunes at the end of the 1990s and early 2000s.

2.5.1 The situation with parks themselves in the UK over the past 25 years.

In September 2015 a two-day conference at Sheffield University, Paxton 150, was devoted to thinking about the future of parks in the UK. One of the speakers, David Lambert of the Parks Alliance, summarised what has happened over the past 25 years with parks, drawing attention to various reports and lambasting the present government for the cuts that it introduced upon coming into office in 2010 – cuts which according to managers are decimating their staffing and skills infrastructure(Heritage Lottery Fund 2014, Lambert 2015).

Lambert's overview of the last 25 years was as follows. There have been reports about parks in the UK since the 1990s. Hazel Conway's seminal book about UK parks (Conway 1991) has been said to have formed the bedrock of parks being seen as part of the UK heritage (Lambert 2015). This treatise created a context

upon which the Heritage lottery fund was able to give funding to parks, funding they desperately needed. The HLFs urban parks programme was launched in 1996 and saw the release of £146 million in funding in the first three years (and has since given more than 600 m to parks.

In 2001 a report called the Public Parks Assessment brought attention to the decline in parks in the previous decade, since the introduction of Compulsory Competitive Tendering. It detailed the losses to parks during a decade of what David Lambert called the 'scorched earth policy'.

"50% of fountains, 57% of bandstands, and nearly 70% of municipal glasshouses – but also 56% of paddling pools, 30% of tennis courts, and putting greens, 16% of bowling greens, along with nearly 29% of the public toilets, shelters and pavilions."

This report was followed in 2002 by a government commissioned report (Dunnett, Swanwick et al. 2002) which used telephone interviews with 50 managers, as well as 15 detailed case studies to look at ways of improving public parks, both in terms of management and ownership and in terms of making them more desirable places for a wider section of the population. This study used survey methods on occasional users and non users of parks (the sample number was 515), focus groups or non and occasional users to find out what people expect from their parks, and what would encourage them to use them more. People, as has been incidentally suggested in much of the literature cited in this literature review, want many experiences from their green spaces.

walking activities, including dogwalking; passive or informal enjoyment; active enjoyment, including sport and specific activities; and attending events. These seven categories of primary use can be combined with a social typology, based on age, gender, physical and mental ability and ethnicity to

create a categorisation of users

This report concluded that community links were very important, that intra-organisational relationships needed to be improved, and that barriers to exclusion needed to be addressed by getting to know who excluded park users were. Design and strategy were also identified as being important. Given the large amount of requirements people have from their greenspace they want their parks to be carefully and strategically designed with their requirements in mind.

2.5.2 CABE Reports

During the early 2000s, The Commission for Architecture and the Built Environment (CABE) produced reports about greenspace management. CABE was an executive non departmental body of the UK government whose remit was to advise the government on architecture, urban design and public space in England. It was established in 1999, funded by the Department for Culture, Media and Sport and the Department for Communities and Local Government. It was axed by the aoalition government in 2011 when it became the design councilIt became the Design council in 2011

During the first decade of this century, CABE produced reports, all of them identifying areas in which public parks could be improved. CABE space was a small team within the Commission for Architecture and the Built Environment which undertook much needed research in green space management. It produced reports about skills and biodiversity in parks, notably skills shortage, in 2004, 2005, and 2008 (CABE 2004, CABE 2005, CABE 2008).

The 2004 report was a summary of some research comprising 36 in-depth interviews and 50 detailed questionnaires. The interviews were undertaken with employees at six out of seven so-called beacon councils (local authorities with a good track record of green space management). It identified that "professionals who plan, manage and maintain our parks, are a dying breed." They are predominantly white, male and over 40.

"park departments are struggling in the face of a serious skills shortage and relevant training, and their staff are facing poor career prospects and low pay. Their success as Beacon Councils was largely inspired by one or two older and experienced managers, rather than reflecting a robust and enduring structure of well trained staff"

The report highlighted that parks employees were stagnating in the same job for years and prospects were low, promotion took a long time and although job retention was very good this masked a stagnating workforce. This report also said that working in parks was seen as low status outside parks departments and that the skills were neither valued nor recognised in the wider world. This report was probably reporting the damage done to parks departments in the 1990s, prior to the injection of funds by the HLF at the end of the 1990s.

The 2005 report, *Parks need Parkforce*, drew attention to the importance of an onsite presence in the park, ie park keepers. It highlighted the importance of this presence and used five case studies of park keepers to illustrate their importance. The question of skills was further explored in a 2008 skills report highlighting the lack of skills in green space management (see fig 1). The results of a study of 54 local authorities (Barber 1989, CABE 2008) showed that there was a significant gap in skills levels in the area of landscape design at management level and horticulture/conservation/ecology at operative level. A lack of resources for training was cited to be the reason. This study also highlighted considerable differences in the way parks are organised and looked after with both static and peripatetic maintenance teams being the norm (CABE 2008). This was thought to have some influence on the quality of the park.

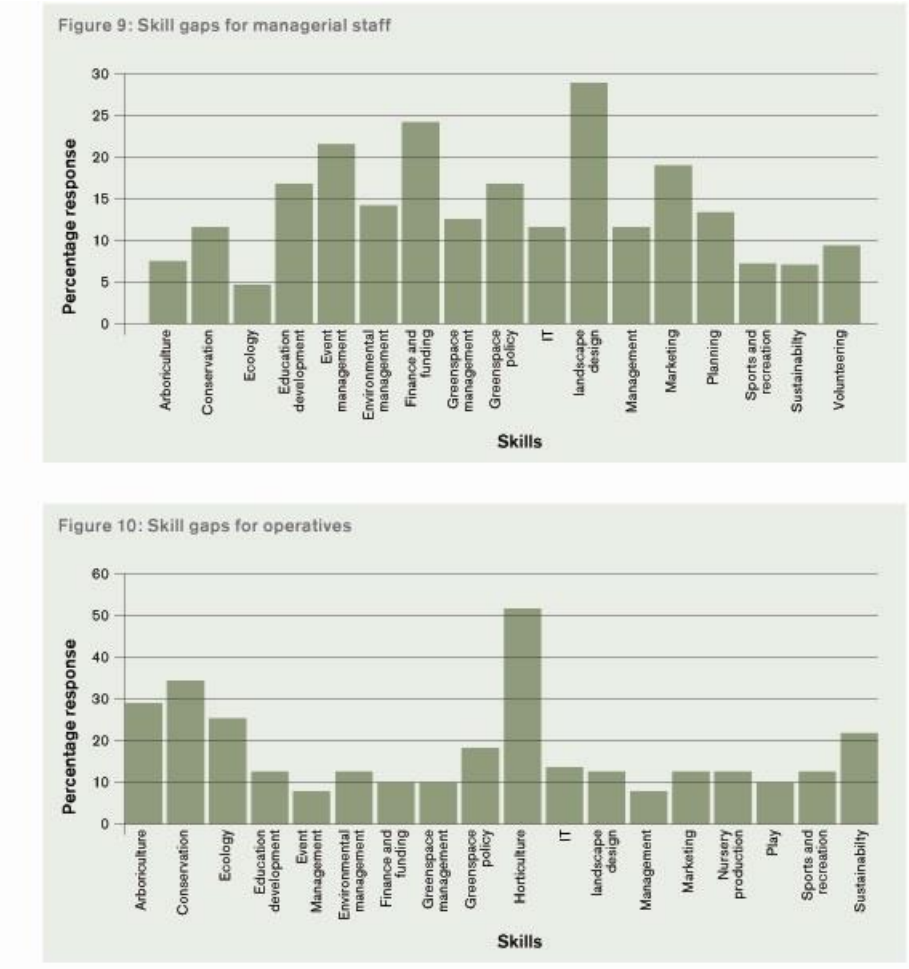


Figure 1: Charts showing reported skills gaps in greenspace management. (CABE 2008)

The most recent major report on UK parks was produced by the Heritage Lottery Fund in 2014. This report summarised trends in the health of parks over the last

decade and identified that, while parks have improved over the last decade, since the injection of money into them by the Heritage Lottery Fund, 86 % of managers anticipate many cuts to their budgets over the next three years (cuts that started in 2010) and 86% have had skilled staff cut since 2010. 45% of parks managers are actually considering handing over their green spaces to be taken care of by other people (Heritage Lottery Fund 2014). Although only 17% of park managers report that their parks have declined over the last three years (compared to 41% who said they are improving), 37% anticipate that the parks will decline in quality over the next three years because of continuing cuts to their budgets.

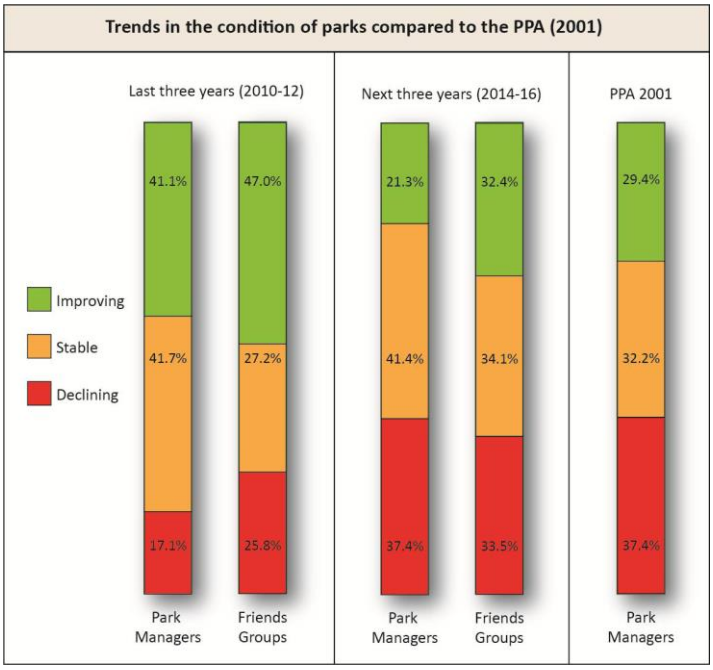


Figure 2: A comparison of the views of greenspace managers in 2001 and 2014, HLF 2014

This study will try to assess whether these cuts and changes to the funding of parks over the past 25 years presents an explicit barrier to NP. It will also attempt to suggest wherefore NP can be undertaken in the context of these changes.

2.6 The culture of the public sector

This chapter has explored potential barriers to naturalistic planting, and laid the context for the quantitative and qualitative study that will be described in the next chapter. All of the themes discussed so far will be explored in the qualitative part of the study. The interviews that comprise the qualitative dataset will also be interpreted in an organisational context. As will be further developed in the

methodology, they will be scrutinised within a theoretical framework about motivation, performance and the relationship between the individual at work and his/her organisation. It is hoped that this study will try to identify barriers to innovation in vegetation management in inner city parks from a socio or ethno organisational standpoint. It will use some studies about motivation in public sector organisations, as well as theories about individuals in relation to their organisations as a standpoint from which to explore whether there might be unexplored barriers to NP in city parks that merit further exploration .
To change the way things are done in public space there may well need to be a "champion". (Rotherham 2015)This will be explored in the study. That champion, however, needs to be motivated. This study will explore whether a barrier to the establishment of naturalistic planting is a lack of motivation on the part of the individuals within local authorities in charge of inner city parks. This brings the study into the area of individuals, organisations and productivity.

A starting point from which to anchor the study into this more sociological framework is Wrights 2001 paper "Public Sector Work Motivation, A review of the current literature and revised conceptual model". This paper summarizes the main theories in relation to motivation and performance in the public sector and concludes that "goal theory" might be the best theory to explain how and why things get achieved. Some of the major ideas and assumptions of this paper are as follows. Firstly Wright defines motivation as being

"how behaviour gets started, is energised, is sustained, is directed, is stopped and what kind of subjective reaction is present in the organism while all this is going on "(Wright 2001)"
He identifies the main literature on motivation in the public sector, and lays out several accepted ideas in public sector work motivation. The first that there is a difference between performance and motivation; the second that the interaction of environmental and personal factors influences motivation, this can be translated into employee characteristics and the organisational environment interact to varying degrees of success.

Another assumption was that Job characteristics and work context interact to varying degrees of success. And that individuals choose their job sector, Public or private have a meaningful impact on level of work motivation

Thus there is a “Bidirectional relationship between employee values and job choice”. Some individuals change their values to coincide with their jobs, some their jobs to their values, on this same premise selection, attrition and adaptation processes influence motivation

He also mentions that public organisations have missions with a broader scope and more profound impact than is typically found in the private sector, employees desire greater opportunities to fulfil higher order needs and altruistic motives

And finally he identifies that public sector organisations are sometimes driven by supply and demand, but these forces do not necessarily converge toward optimal efficiency in the public sector because the purchasers of public sector goods and services are not necessarily the same as the users of the services. Having laid out these assumptions and reviewed the major studies in this area Wright concluded that there was, at the time of writing, no conclusive evidence to persuade him of the worth of any of the existing theories about public sector work motivation. 8. , in fact he went so far as to suggest that they had mostly failed to explain performance in the public sector. He suggested that theories about public sector work motivation were dated and humanistic, and that “purposive” theories were more useful to advance theories about motivation and performance in the public sector. He suggested that theories be classified in relation to their proximity to action, ranking from distal to proximal. Humanistic theories are distal as they are intended to predict intentions and the like. Proximal theories that focus on motivational constructs at the level of purposive action, at the time, dominated current motivation research. Wright suggested that one of these, goal theory , might provide a better opportunity to understand work motivation in the public sector. He proposed that studies around goal theory would be the most interesting ones to pursue in terms of understanding motivation in the public sector. Goal theory posits that goals are the central motivating factor for people at work, in both the private and public sector. This theory can be broken into two main processes: goal content and goal commitment. Goal content comprises difficulty, conflict and specificity. Difficulty can actually enhance performance as it provides structure in which an individual can self regulate, but ambiguity can

compromise performance. Multiple goals being pursued simultaneously can compromise performance. This is known as "gaol conflict". Goal commitment is a job attitude the concerns the conditions under which an individual accepts a goal and is determined to reach it, even if confronted by setbacks or obstacles. Goal commitment is a product of two factors: self efficacy and goal importance. Self efficacy is thought to be the individuals own judgement of his or her own "capabilities to organize and execute courses of action required to attain designated types of performances"

It is in the context of the studies summarized by Wright that an Australian academic called Matheson has put the Australian public sector under the spotlight and developed his own humanistic theory with regard work motivation. Matheson has created a body of work in which an evolved picture of the individual within organisations has been built up. His studies aimed to augment and enhance the relatively sparse literature that relates to motivation in the public sector. His early work had looked at organisations themselves. He identified four dimensions to organisational structure: bureaucracy, hierarchy, degree of specialism and centralisation (Matheson 1996). His studies subsequently argued that professionalisation within the public sector was being jeopardised by management. (Matheson 1998). More recent work has looked at individual characteristics of employees within public sector organisations necessary for upward mobility (of which he claims ability is only one factor, alongside reputation, social credentials and patronage) (Matheson 1999). He also put bureaucracy under the spotlight, highlighting that it is a necessary evil: while it does ensure efficiency, equality, non partisanship and accountability, it also fosters alienation and what he calls "psychic entropy" (Matheson 2007). By 2012 Matheson has built up a strong theoretical framework in which to position his treatment of the individual within an organisation and it is to his 2012 paper reference will be made in the qualitative chapter, with a view to applying this study's interviews to a theoretical ethno-organisational framework (Matheson 2012).

The 2012 paper It argued that the five basic human needs; physiological, safety, social needs, self esteem and self-actualization (Maslow, 1943) are all reflected to a greater or lesser extent in people's motivation to work. Matheson combined

psychological and sociological theories to understand work motivation. (Matheson 2012)

> *"Innate psychological needs determine the content or direction of work motivation, that is, the types of rewards that people seek to obtain from work; whereas the social environment determines the relative importance of such motivations."*

He explored what motives people hold and why they hold certain motives in preference to others. He also explored to what extent people are prepared to act on these motives. He expanded the three "orientations" to work - instrumental, solidaristic and bureaucratic (Goldthorpe, Lockwood, Bechhofer and Platt) - to six and drew on a "ritual interaction theory" (Collins 1988) to develop six theories of work involvement which are as follows.

1. **Defensive orientation.** Risk averse. Survival uncertain. Arises when workers experience high levels of insecurity. Peasant culture. Work undertaken primarily out of economic necessity. Minimal compliance.
2. **Instrumental orientation**. After security people seek out monetary rewards and other utilitarian rewards such as promotion and fringe benefits. . Narrow form of compliance.
3. **Thymotic orientation.** Fukuyama said that one of the most important non-economic motivations to work was social status/recognition (cited in (Matheson 1996). Material rewards symbolise status. Belonging, Status and Meaning are rewards for individuals of the thymotic orientation. Involvement is egoistic.
4. **Social acceptance and respect. The solidaristic orientation** is characterised by ritual participation in the group. The working environment is characterised by an Esprit de corps. Paternalism : staff lunches, social events, team building exercises
5. **Vocational orientation** is embodied by a sense of meaning or purpose.. Careers can confer on an otherwise mundane job a sense of meaning.
6. **Intrinsic rewards .** The expressive orientation. Using skills, a sense of accomplishment, mental stimulation..It tends to arise where people perform tasks that enable them to make full use of their skills and where they have the capacity to choose their goals.

Matheson suggested that within the public sector there might be a certain lethargy with regard to wanting to get things done, due to a culture dominated by individuals whose main priorities were not related to any kind of qualitative progress in work ie getting the task done.

> *"Under favourable conditions people will seek to satisfy the full range of their needs whereas under less favourable conditions their motivations may be restricted to those that are realistically obtainable … People may therefore have both high- and low-priority aspirations with respect to their work, the former being those that are actively entertained and pursued, whereas the latter are those that are less stringently held because they seem unrealistic or beyond reasonable hope of realization*"

This study will interpret the qualitative findings in the light of these studies. It will seek evidence of goals, the context in which they are achieved particularly in relation to the idea of goal conflict. It will also, in the interests of exploratory research, shine a humanistic light on local authority employees and interpret them in the framework of Mathesons' six orientations to work.

2.7 Conclusion to the literature review.

So where does this disparate collection of studies that potentially represent the major influences on planting in our parks lead us, in terms of hypotheses.

1. Having chosen a group of reliable species in meadow creation, and sown them in three sites at the right time of year, potential barriers to them establishing will be competition by weeds, lack of moisture, predation. Every attempt will be made to prevent this from happening. Hypothetically, these factors will not be a barrier but, given the scope of the research one might expect one or more of these potential limiting factors to affect an area of planting.(Gilbert 1991, Hitchmough and Dunnett 2004)
2. One could hypothesise that the more familiar park users are to naturalistic planting, the more they will prefer it.(Balling and Falk 1982, Keane 1990, Herzog 1995, Jorgensen 2004)
3. Young people will express a higher preference for this type of planting.(Balling and Falk 1982, Lyons 1983)
4. People will like this planting but will also like other types of planting. In fact they are likely to express the desire for a variety of planting types.(Burgess, Harrison et al. 1988, Gilbert 1991, Ozguner and Kendle 2006)
5. There will be a difference in preference between the genders(Lyons 1983, Jorgensen 2004)
6. People will like the more colourful areas, and may like a diversity of colour. Their preference may plateau and drop after they see too much colour.(Mynott 2001, Hands and Brown 2002)
7. People will negatively judge sparseness in planting.(Hands and Brown 2002)
8. People will like to see frames for naturalistic planting. Evidence of human intent.(Harrison and Burgess 1989, Nassauer 1995)
9. Mown grass may be mentioned terms likely to be used are “boring” and “monotonous”. However it may not be mentioned at all. The experts

interviewed may mention mown grass and the culture of mowing without probing.(Fairbrother 1972, Gilbert 1991)

10. NP may be mentioned as attracting antisocial behaviour such as litter by both park users and professionals in the greenspace sector.
11. Professionals will have a wide range of views about this type of planting. Local authority employees are likely to judge it highly but will not prefer it to other types of planting.(Ozguner, Kendle et al. 2007)
12. Local authority employees may mention Compulsory competitive tendering, contractual limitations, cuts, lack of skills and separate conservation services in relation to innovations in vegetation management. (Yates and Ruff 1991, CABE 2006)
13. Mowing and grass management will be mentioned often in passing by parks employees.
14. The interviewees may talk about planting suitable for cities.(Ozguner, Kendle et al. 2007)
15. The individuals being interviewed within the local authorities will have widely varying levels of motivation for innovation in vegetation.
16. Where successful NP is already in practice for a local authority there will be an identifiable “champion” for the cause which will be evidenced in both the language and the results. This champion will have the goal of delivering NP and will display high levels of “self efficacy”.

Chapter 3: Research design and Methodology

3. Introduction to the research design and methodology.

It was decided at the outset that an experimental approach would be taken, using mixed methods. The reasons for this were several. The first was that naturalistic herbaceous planting was still relatively rare in inner city parks so the best way to gain an insight into what the generic city park user thinks of it was to create several examples of it and then ask questions based on those examples.

A second influence on the choice of methodology was the unsuitability of the most commonly used alternative choice in the design of studies of people's perceptions about landscape: the use of photographs, or 'landscape surrogates'. This method owes its popularity to the high degree of control over what participants are given to assess and to the fact that surveys are cheap to administer on a large scale, so large amounts of quantitative data can be gathered. The use of landscape surrogates does, however, have its limitations. Photographs present a limited view: a two-dimensional representation of one instant in time. Although they have been proven to be an acceptable substitute for the real landscape (with high correlations between preference for the real landscape and its photographic depiction identified in literature), the visual content of a photograph is inferior to the visual content of a real life situation; the eye has a very wide cone of vision and the view consists of three-dimensional objects, stationary or moving, at various distances in space. A study by Shuttleworth in 1980 looked at eight studies using landscape surrogates and concluded that photographic simulation proved most reliable in dealing with the overall perception of the landscape but less reliable when dealing with the perception of detail elements in the landscape. (Shuttleworth 1980)

It was in this context that a real-life intervention in the form of the creation of an area of naturalistic planting (or detail element) was chosen as the best approach for the quantitative survey of park users' opinions. The real-life intervention, working closely with local authorities, would also be the best way to explore the expected nuances of the technical, environmental, cultural or economic barriers to NP.

It was thought that identifying three cities in the UK, carefully selecting a park in each and sowing - in conjunction with those parks' management - three areas of mown grass with a species-rich herbaceous mix, and then monitoring those sites, would offer some answers to the technical and environmental aspects of the research question such as how easy it is, physically, to actually establish an area of naturalistic planting in a park, and what kind of barriers might be encountered. Following the sowing, establishment and flowering of the meadow planting (anticipated to be during the second flowering season, being perennials) the quantitative survey methodology would be employed to find out what the "park user" thinks of naturalistic vegetation generally, and different physical aspects of this piece of vegetation.
Finally, a qualitative assessment: in-depth interviews could be undertaken with a broad cross-section of professionals involved in greenspace management, some of whom would already have been involved in the earlier part of the study which might probe deeper here and find embedded barriers, not immediately accessible via the quantitative survey and physical results.

The validity and challenges of using a multi-method approach of this type were explored in a 2009 study in relation to access to public space (Kessel, Green et al. 2009). This study used quantitative survey methods to explore the physical and demographic parameters of access to green space, and qualitative methods to explore people's understanding of the links between health and the natural environment. This study concluded that physical distance as well as psycho-social distance (ie people couldn't "see themselves" using a green space) all contributed to access. This study discussed the challenges of analysis when using a multi-method, or multidisciplinary approach. Multidisciplinarity encompasses interdisciplinary and transdisciplinary; in the former case disciplines are used in tandem throughout the study and inform each other from the outset, rather than coming together in the findings. In the latter the methods can be used in parallel and be discussed in relation to each other in the findings of a given piece of research. The interdisciplinary approach is common in large scale "macro" studies undertaken in the field of public health (the arena in which this study was undertaken). The Kessel study, however, had adopted a transdisciplinary approach with the two methods being used concurrently. The study considered

how data should be managed when using two methods. Should quantitative data be given "logical primacy", and qualitative data be used to support quantitative findings, should the two approaches be used in parallel or should qualitative research be given primacy and quantitative methods used to explore key findings? This study, like our own research question, was asking questions from two very different conceptual viewpoints. It raised the point that one of the strengths of qualitative (in this case ethnographic) research is that it challenges "taken for granted assumptions". There would be a real danger of losing valuable insights into the research question should it be "relegated" to commenting on relationships already imagined by quantitative results. An alternative would to give the qualitative, ethnographic, research primacy but from a practical point of view this would have compromised the timing of the study, and possibly forced the quantitative survey design down a much more detailed route. The study concluded that the findings in this study were so rich that they justified the pragmatic approach of using the two approaches in parallel, addressing the same topic but from different conceptual frameworks. (Kessel, Green et al. 2009)

The wider research framework into which this study falls is the "action research" framework. According to the SAGE Encyclopedia of Qualitative Research Methods, action research was developed in the 1940s and is well suited to studies involving "change" and intervention within the social sciences. (Interestingly this chapter also mentions Vygotsky, saying that Kurt Lewin, the US psychologist said to have first coined the term 'action research', was familiar with the ideas of Vygotsky: post-Vygotsky activity theory sees human activity as mediated by cultural and social contexts particularly as they are mediated by organisational roles.) Action research involves the practitioner working in partnership with "insiders", and although it is primarily a qualitative methodology, it can be eclectic and use all forms of research methodology including quantitative survey methods. (Given 2012)

Action research explores the interrelationship between human behaviour and sociocultural situations rather than trying to generate generalisable truths. It is reflexive by definition; the researcher can be subjective and report in a form that uses rich description and analysis. Research ethics are extremely important in

action research "requiring continuous sensitivity to how power relations may be shaping the partnership, and continuous inquiry into the process of collaboration as well". Action research is thought to be particularly important to change and innovation because of its unique insight into insider knowledge. It forms a bridge between practitioner understanding and the generation of theoretical knowledge to inform action. (Given 2012)

This research method of actively involving the citizen in a real world experiment echoes with the user-centred research approach known as the living laboratory. Living laboratories are a relatively recent and increasingly popular concept that generate knowledge from real world innovations. "Living laboratories" are experiments traditionally used to test information technologies in the real world but are increasingly being used in the design and evaluation of services that enrich everyday lives. To constitute a "living laboratory" the experiment has to have six characteristics: user involvement, service creation, infrastructure in terms of data collection, governance, innovation outcomes and specific methods and tools. (Nesti 2015, Pieter Ballon and Franz 2015).

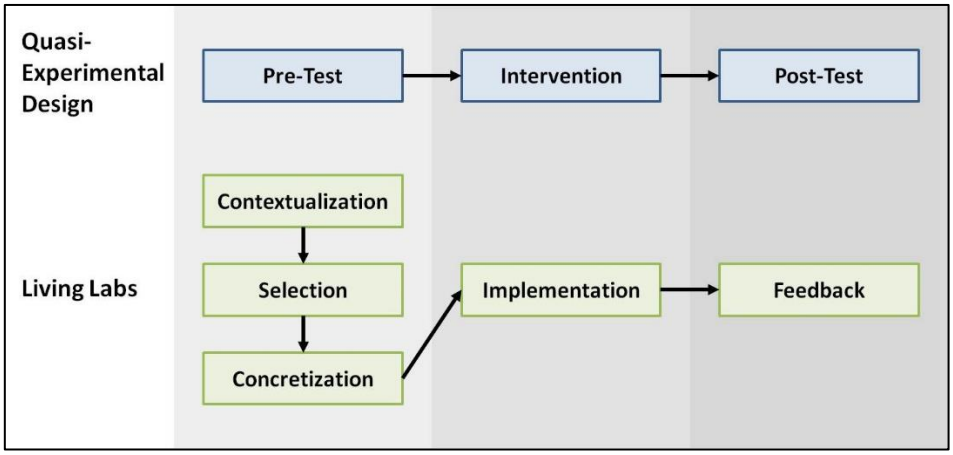


Figure 3: Comparison between Living Laboratory and Experimental methodologies (Schuurman, De Marez et al. 2016)

Living laboratory research designs are methodologically very similar to experimental design but the differences are shown in Figure 3. *Experiments* are pre-tested interventions rather than innovations made concrete following a process of contextualisation and selection. In relation to this study the framework of the living laboratory is particularly applicable; this study sought to take pre-tested seed-sown naturalistic herbaceous vegetation into inner city parks, in

partnership with certain stakeholders, and via the practice and process to gain an insight into where potential barriers might be. It sought to innovate in the heart of public space and, via the experience of stakeholders, notably park managers, park users and friends' groups, to gather feedback that would go in some way to answering the research question and ultimately enhance experience in public life.

"Living labs are physical regions or virtual realities, interaction spaces, in which stakeholders form public–private–people partnerships (4Ps) of companies, public agencies, universities, institutes, users, and others that follow the philosophies of open and user innovation to collaborate for improving, developing, creating, prototyping, validating, and testing of current or new technologies, services, products, and systems in real-life contexts." (Leminen et al., 2012) in (Schuurman, De Marez et al. 2016)

"An urban living lab has been defined as a forum for innovation that integrates residents and other stakeholders to develop and test new ideas, systems, and solutions in complex and real contexts." (see Friedlich et al., 2013). (Juujarvi and Lund 2016)

Stakeholder identification.

It was decided that trying to represent all stakeholders in public parks in this study would not be a suitable sampling strategy. Stakeholders in organisations, in the broadest sense of the word have been defined as

"… any group or individual who can affect or be affected by the achievement of the organisation's objectives" (Freeman 1984)

This accepted definition has been much explored in literature and there is little agreement on what Freeman calls "The Principle of Who or What really counts". (Mitchell, Agle et al. 1997). An attempt to clarify this lack of agreement was made in a 1997 paper that identified a theory of stakeholder salience. (Mitchell, Agle et al. 1997). This study comprised a literature review of stakeholder definition and concluded that this comprised "a maddening variety of signals on how

stakeholder identification might be answered". The Mitchell study proposes that this variety can be clarified in the following way: stakeholders can be identified by their possession or attributed possession of one, two, or all three of the following attributes (1) the stakeholder's *power* to influence the firm [or organisation] (2) The *legitimacy* of the stakeholder's relationship with the firm [or organisation] (3) the *urgency* of the stakeholder's claim on the firm [or organisation]. This theory "produces a comprehensive typology of stakeholders".

This exploration of definitions of what a stakeholder is was undertaken with a view to helping managers to identify stakeholders in relation to their firm. For the purpose of this study it is useful as a frame of reference and highlights the potential complexity of stakeholder identification; it is not simply decision-makers who will present barriers to innovations, but other groups of stakeholders whose presence and needs must be catered to.

Stakeholders in greenspace itself are a diverse group and range from those in power, such as senior managers and councillors, to toddlers using the playground. The Royal Parks identified three groups of stakeholders: local park stakeholders - individuals or groups who have an interest in their local park including friends' groups, local residents, local businesses and elected local representatives such as local councillors and MPs; partner organisations with a role in the governance of The Royal Parks and thirdly park visitors or users. It also identifies three other groups of stakeholder who lie outside the scope of its strategy ; contractor teams, volunteers and subcontracted partners (March 2014)

Defining which individuals might be the best ones to help answer our research question was a key part of the research design. Given the wide potential choice of stakeholders it was decided that the sample should involve individuals whose physical proximity to the planting, both passive (park users) and active (professionals involved in the actual planting and maintenance of planting in parks, at the ground and decision-making level) should form the bulk of the sample for both the quantitative and qualitative sample. Park users would be recruited near to the actual planting over a number of days, both weekdays and at weekend, both during working hours and outside working hours. Surveys would

be undertaken during a key point in the growing season when both exotic flowers and native flowers were in flower, and the different relative densities of native flower : exotic flower : grass could be “read”.

The sampling strategy for this study could well be seen, in one way, as rather narrow. Survey methodology for greenspace preference generally has often involved large postal surveys of potential users of a greenspace (Jorgensen, Hitchmough et al. 2002), or, in the case of the Burgess studies, small but carefully chosen groups of people thought to represent the whole cross-section of park users. But these sampling strategies are undertaken in the context of explorations of park usership generally, in the case of the Burgess studies, and perceptions about open space generally, in the Jorgensen study. Our study is in part, a gauging of perception of specific planting for which the respondent must be in situ, due to it being a real-life experiment. Thus passing park users would be recruited. This study is also an exploration of the actual decision-making process with regards to planting in parks, thus the sample for the qualitative study stays as close to the decision-making as possible; professionals within local authorities and other experts. Subsequent studies in this area, once initial barriers have been identified, would involve a wider stakeholder group.

3.1 Introduction to the experiment design. The quantitative study.

3.1.2 Creation of the Planting

The first part of the project was the creation of the planting. The intention was for 300 square metres of naturalistic planting to replace 300 square metres of amenity grass. It was thought that this would be a suitable area to divide into 10 and sow with different ratios of flowers and grasses, each plot being approximately 30 square metres.

The type of vegetation was established by way of seed mixes. Seed mixes that encompass native and exotic forbs and grasses for ornamental use are both 'naturalistic' and 'ecological'; the premise is that viable seeds mixed together are sown and, according to characteristics of the plants themselves and their suitability to the site conditions, will form a community. (Hitchmough and Woudstra 1999, Hitchmough 2004) Species are selected for their ornamental value, flowering period and provenance; both native plants and exotic plants are a vital component of the mixes as carefully chosen exotics can offer intensity of colour later in the flowering season. British native meadow flowers will often flower early in the season and non-natives later. Thus areas of meadow can be created that have colourful flowers from late May until the end of October. There is a wide selection of non-native colourful flowers, which provide bright colour later in the season, available commercially.

It is on this premise that the different seed mixes were designed. The flowers used would be natives (of which there were ten species), non-natives (of which there were five species) and grasses (of which there were two). Colourful mixes would comprise 100% flowers with no grasses. These would range from a high proportion of native to non-native flowers, to a high proportion of non-native, or exotic, to native. Less colourful mixes would have increasingly high proportions of grasses to native and non-native flowers.

It was hoped that by sowing nine different mixes at different ratios on one plot enough "legible" variety would be created from which useable data could be

gathered with relation to preference. The details of species and actual ratios are given later in this chapter.

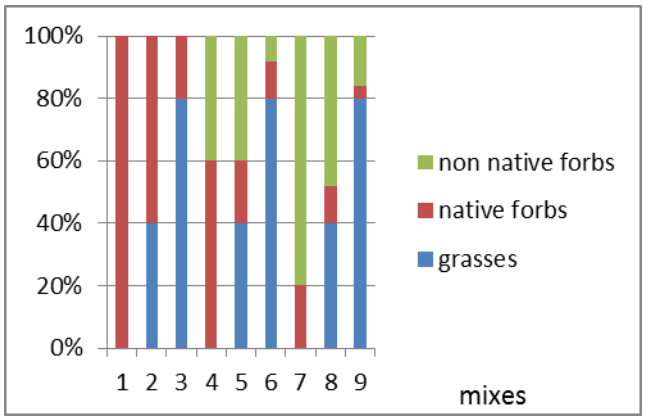


Figure 4: Seed mixes. 9 mixes with range of rations of natives : non-natives : grasses

This plant community will have its own intrinsic 'ecology' that will not be manipulated, apart from being cut down once per year in an effort to mimic grazing or ancient agricultural practices, which encourage a balance between the species, thereby maintaining diversity (Hitchmough 2004). Cutting and removal of the arisings alleviates potential barriers to growth such as shade and surplus of nutrients (from breakdown of the cut grass) in the form of nitrogen that gets exploited by competitive weed species. As was considered in the literature review, competitive weed species will exploit rich soils, growing fast and robust, and outcompete preexisitng vegetation.

3.1.3 Identifying Research Locations – a summary

The next step of the project was to identify the sites to be used.

It was decided that three of these meadows should be sown in three inner city parks in the UK. Inner city, in this context, is loosely defined as an area near the centre of a city, especially when associated with social and economic problems. All of the parks selected were in inner cities. It was thought that sowing three sites would ensure that in at least two of them a meadow would be successfully established and subsequently used for the research. Selection criteria included: an inner city location; having large areas of mown grass; and willingness on the part of the relevant local authority to give over 300m^2 of amenity grass to the

project *and* provide support in terms of labour and equipment for site preparation.

In the Autumn of 2006 the Royal Horticultural Society (RHS) was contacted to see if it would be interested in giving its official backing to the research project. It was thought that official support from the RHS, within the remit of 'Britain in Bloom' (the RHS's national competition awarding local authorities and other individuals for horticultural excellence), would inspire confidence and motivate local authorities to take part in the project. Having worked as a Britain in Bloom Officer within a London local authority and having been a Green Flag Judge for a number of years, the lead researcher knew how much stock managers of greenspace put in such awards. The approach to the RHS was successful and the University of Sheffield research team met with the RHS to write, collaboratively, an official letter inviting local authorities in large cities to take part in the project. Background information about the project was provided, as well as the aims of the research. The letter was sent to the Director of Parks and Open Spaces for targeted local authorities by the Head of Science at the Royal Horticultural Society. One of the targeted local authorities (Corporation of London) replied with a positive response. Sheffield City Council and Bristol City Council were subsequently identified and contacted and agreed to take part in the project. It was notable that a brief follow-up call to the letter was enough to persuade Sheffield and Bristol City Councils to take part. (The first call, to Sheffield, came from Prof. James Hitchmough, the supervisor, and the second, to Bristol, from the lead researcher.)

3.1.4 Timetable of the Research Project

The timing of the research elements of the study was adapted from the originally anticipated schedule to incorporate two periods of maternity leave on the part of the lead researcher in 2007/8 and 2009/10. (A subsequent period of maternity leave in 2012/3 further delayed completion of this thesis although all of the data had been collected by then, so this had no further effect on the research design.) The planned 2009 survey was delayed by a year, although by 2010 two of the areas of planting were not considered to have retained enough colour or

variety to be suitable for the perception survey (in itself a valuable finding as it demonstrated the unlikeliness of this type of planting to establish successfully in the absence of proper management, for whatever reason). In 2010 it was decided that a fourth site was necessary and would be sown with annual flowers and grasses. The seed mixes were designed with exactly the same ratios to achieve the variety necessary to gauge differences in perception

2006	2007	2008	2009	2010
Local Authorities invited to take part	3 sites identified	3 sites sown (January 2008)		New (4th) site sown
		Interviews undertaken (Oct/Nov/Dec 2008)		Survey conducted on two sites.

Table 1: Actual research timetable, 2006-2010

In summary, three parks were identified and sown with the meadow mixes during the same season (winter 2008). The quantitative survey was delayed by a year to 2010 by which time a new site was needed. This was sought and secured in the winter of 2009. It was sown with annuals, following exactly the same principles as the other sites. The quantitative survey of park users to explore attitudes was conducted in the Summer of 2010 on two sites, Meersbrook park in Sheffield, and the new site, Ruskin Park in South London.

3.2 Introduction to the experiment design. The qualitative study

The design and research approach for the qualitative study was given much thought.

3.2.1 Ethnography, grounded theory and the semi structured interview.

This study initially intended to make use of ethnographic interview techniques and this research approach was identified in the funding application to the ESRC and NERC. Ethnography is the study of people in real world surroundings, these can be at home, work or elsewhere. It studies people within their own culture and the framework for analysis is the unique culture in which the individual is being studied. Like action research, ethnography is not a method, but an approach.

"*Ethnography is not one particular type of data collection but a style of research that is distinguished by its objectives, which are to understand the social meanings and activities of people in a given "field" or setting which involves close association with, and often participation in, this setting". (Brewer 2000)*

Methodologies for undertaking ethnography generally include participant observation, in-depth interviewing, the analysis of personal documents and discourse (Brewer 2000). It was established as a research approach in the field of anthropology at the beginning of the 19th century and is now an accepted qualitative approach in the social sciences. At the outset of this study an ethnographic approach was deemed appropriate to the study's aims as one of the main research questions was "how much of the decision making about vegetation is dependent on the individual, and how much is dependent on the organisation?" Despite being political organisations local authorities are highly (and differently) structured collections of people all with different tasks and levels of authority. How and why decisions and, more pertinently, innovations (as naturalistic planting is for the most part an innovation in most inner city parks) are made is dependent on ideas and communication of these ideas between individuals both inside and outside these organisations. This study sought to go beyond straightforward examinations of bureaucracies or resources, to scrutinise the individuals responsible for planting in their place of work. The aim was to hear in

their own words their views on naturalistic planting and to identify, or induce, truths that may form barriers to naturalistic planting in inner city parks. It was thought that an ethnographic approach would provide greater access than straightforward interviewing to embedded values about decision making with regard to vegetation and innovation.

Although owing its roots to anthropology, ethnography is used in many disciplines. Ethnography and greenspace is sparsely represented in the literature. There was a paper in 2012 which assessed the relevance of ethnography as a tool to understanding the meaning of nature in relation to people's health experiences in relation to natural landscapes (O'Brien and Varley 2012). This paper summarised different qualitative approaches, including ethnography, that had been used explore the meaning that nature holds for people. It discussed three types of ethnography: accompanied visits, visual ethnography which affords data about bodily movement, facial expressions and journeys in nature and finally auto ethnography that allows subjects to record meaning in nature using cameras or mounted video-recording equipment in the case of cyclists. This study concluded that ethnography can be a very useful tool in explorations of the meaning of nature for people (O'Brien and Varley 2012). The Kessel (2009) study discussed earlier, which used quantitative and qualitative - in this case ethnographic - methods to understand why, despite green space provision being much improved for some residents in an area (established using quantitative methods), not all the population was being represented in usership. Ethnographic methods included using policy documents and informal interviews with those managing the green space in question; informal interviews with managers of a programme called THERAPI (Tackling Health through Environmental Regeneration and Public Involvement) and users of the programme; interviews with the local population; participant observation of meeting, events and everyday activities in the greenspace; a demonstration day and four conferences on nature. The ethnography uncovered varying levels of understanding amongst potential users about what the green space was meant to be used for, and identified symbolic barriers in how people use greenspace for health. Talking to people added otherwise missable depth to the study, investigating how people saw themselves in relation to the health advice they were being given and showing that while

some people identified with the messages and advice about exercise being given to them, others felt alienated by it. (Kessel, Green et al. 2009).

Nesta, formerly NESTA, the National Endowment for Science, Technology and the Arts, has produced various reports over recent years promoting ethnography as a tool for improving public sector research. (Parker and Leadbeater 2013). In 2013 it reported on a scheme that it had undertaken in collaboration with the LGA (Local Government Association) looking at how the public sector could think more creatively about the problem of doing more, better with less (a post-2010 conundrum). It was essentially a handbook for innovators from within the public sector using case studies that had been developed and supported by the scheme (Parker and Leadbeater 2013). This scheme had used ethnographic techniques to gain an insight into the different *vantage points of stakeholders*. The report selects ten local authorities in which change is enacted on some level of the public service. Some of the local authorities in the scheme, such as the London Borough of Havering, actually commissioned ethnographic research to look at services, in this case foster care services, from the vantage point of the young people and the carers. It concluded that ethnographic research is a suitable approach for public sector change for several reasons. Firstly it takes the time to look at the whole environment, and identifies phenomena that can be missed by a "tick box approach". Secondly, it challenges assumptions held by professionals and "complacency". Traditional feedback from users gathered by staff was not reliable as people tended to supply staff with the answers that they felt they wanted to see. Ethnography takes the time to interact meaningfully with subjects. Thirdly, the emotional anchor created by representing the real voices of the people helped to renew the innovation teams' sense of purpose. The "services' stark shortcomings" were laid bare in a way that could not be ignored. Fourthly, ethnography allows researchers to break the cycle of blame in public service by helping all Stakeholders to view situations from new vantage points. This study identified professional qualities on the part of individuals (do-ers, problem-solvers) and organisational qualities that would be favourable to innovation. (Parker and Leadbeater 2013)

The data collected was powerful enough to galvanise change within the local authority. The main drive of the whole report was that fresh, problem-solving thinking should be fostered within local authorities, that it was within their reach and they needed to innovate endogenously, rather than relying on outside organisations but, as was mentioned earlier, these individuals need an environment in which they can think and act relatively freely.

After much consideration of the examples and arguments above, however, it was decided that an ethnographic approach was not the most suitable for the qualitative part of this research project, mainly due to logistical and time constraints: the scope of this study was wide, encompassing three different research sites in three different cities in the UK dealing with three (and subsequently a fourth) groups of professionals. It would simply not be possible to undertake ethnographies covering all these groups of people. Specific information about decision-making and other aspects of planting was being sought from a range of individuals across the country. From Bristol in the West of England, to London in the South, to Telford and Liverpool in the Midlands. The study was detailed in its aims and widely exploratory in its objectives. Undertaking a single ethnography of one of these groups would have been possible but, given the heterogenity of local authorities in terms of governance, resources and personnel, not to mention history and environmental profile of the sites, it was thought that such a study would be unrepresentative. The design of this study sought a fine balance between breadth and depth, using a combination of methodologies applied to a wide socio-geographical domain. It was hoped that, by careful interviewing and analysis, deeper themes regarding personal motivations and limitations would emerge, paving the way for potential future ethnographic considerations.

Thus it was decided that a more suitable approach would be the semi-structured interview. This was used by Dunnett, Swanwick and Wooley in their 2002 advisory document *Improving Public Parks, Play Areas and Green Spaces* to uncover information about the management of parks. It uncovered a wide range of material and was used as part of a mixed method approach that also used quantitative survey methodologies (Dunnett, Swanwick et al. 2002). Another

study by Anna Jorgensen explored how satisfied residents were with the woodland that surrounded where they lived. Again she employed a mixed method approach and supplemented a quantitative postal survey (sample number was 266) with 39 in-depth interviews. The interviews yielded a great deal more information again about a very specific subject and in her discussion she expressed the regret that she had not conducted the in-depth interview prior to the postal survey as other questions could have been asked. Finally the Burgess, Harrison and Limb studies, which yielded a large amount of information about green spaces in inner cities, while not employing in-depth interviews, used discussion groups (although they did employ psychoanalytic techniques) to stimulate discussion and gather useful data for the research question.

It was therefore decided for this study that a targeted group of professionals should be interviewed; their views about planting and naturalistic planting would be sought and contextualised within conversations about their work, their employers, their contractors, their park users, colleagues and collaborators. It was hoped that these professionals - who ranged from local authority employees at different levels, to contractors and individuals working for organisations specifically promoting naturalistic planting - would, via their experience, shed valuable light on the intra-institutional barriers to naturalistic planting.

3.3 Site Identification

The research team were given a choice of parks shortlisted by the local authorities and, following a guided visit by the local authorities, three sites were selected: Queens Park in Kilburn, London; Brandon Hill Park in central Bristol and Meersbrook park in Sheffield.

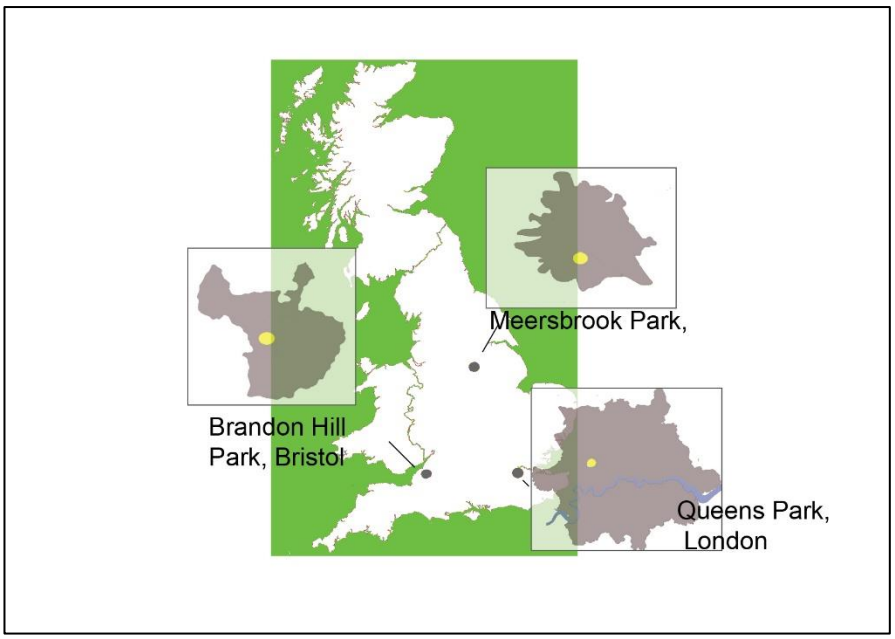


Figure 5: Location of the three sites on UK map

All of the parks were in "inner city" areas. This was verified using maps and 2010 census data; namely the index of deprivation.

This measure of deprivation uses census data to rank small areas in the UK in order of deprivation. It divides the UK into 32,432 Lower Super Output areas (or LSOAs), approximately 3-4 per electoral ward, which are ranked in order of deprivation. The domains measured are employment, health, education, crime, income, access to housing and environment. These are combined to create "The Index of Multiple Deprivation"(DCLG 2010). The various domains are weighted slightly differently to create this "multiple deprivation score".

- Income (22.5%)
- Employment (22.5%)
- Health deprivation and disability (13.5%)
- Education and skills (13.5%)
- Barriers to housing and services (9.3%)
- Crime (9.3%)
- Living Environment (9.3%).

The index of deprivation is very useful as demographic patterns can be mapped and different domains of deprivation can be used to give an accurate profile of an area. This is useful in understanding the usership of a given park. How the actual domains are configured is as follows:

- Income (22.5%) : proportion of people who are receiving **income related benefits,** including children
- Employment (22.5%): claimants of **jobseekers allowance** and participants in **New Deal (a workfare programme introduced by the New labour government in 1998)**
- Health (13.5%) : years of **potential life lost** due to premature death, measures of **comparative illness and disability**, measures of **anxiety and mood disorders**, measures of **acute morbidity**.
- Education/skills (13.5%) : school **scores and absences**, proportion of young **adults not entering higher education** and proportion of **adults 25-54 with no training**.
- Barriers to housing and services (9.3%): Household **overcrowding**, **homelessness** and difficulty of access to owner occupation. Geographical distance to services: school, postoffice, GP and supermarket.
- Crime (9.3%): measures the rate of recorded crime for four major crime themes **– burglary, theft, criminal damage and violence** - representing the occurrence of personal and material victimisation at a small area level
- Living environment (9.3%): focuses on deprivation in the living environment. It comprises two sub-domains: the 'indoors' living environment which measures the quality of housing and the 'outdoors'

living environment which contains two measures about air quality and road traffic accidents

The LSOAs are small enough to show an accurate socioeconiomic profile of the residents around the parks, and highlight pockets of deprivation and wealth characteristic of inner cities. The index of deprivation is also available at local or unitary authority level (DCLG 2010). The following maps of the three cities that the study was involved with show the distribution of deprivation within the cities, and how the different research sites lie in relation to these patterns.

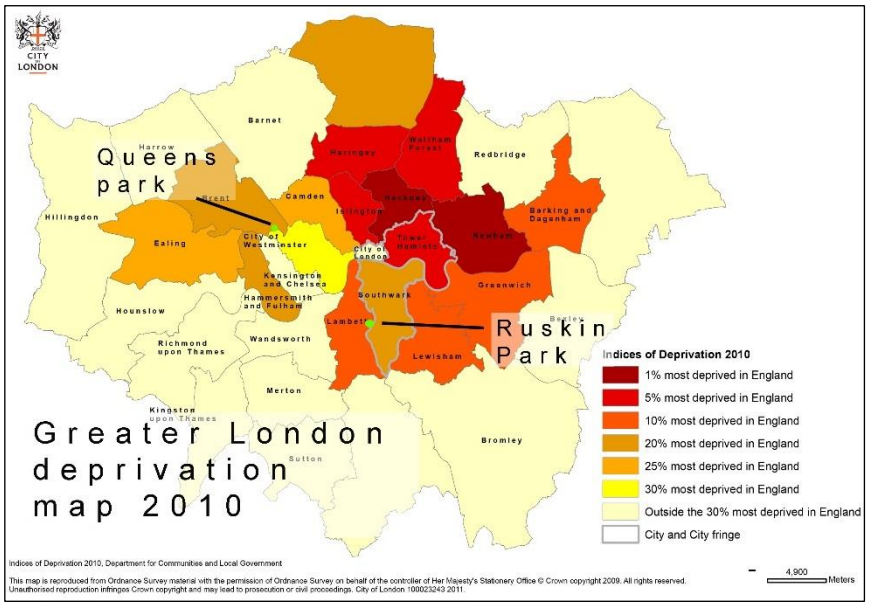


Figure 6: Local Authorities ranked in order of deprivation. The first London site was Queens Park, in the London borough of Brent, the 24th most deprived local authority in the UK in 2010. Ruskin Park, the fourth site is also shown on this map and is situated on the eastern edge of the London borough of Lambeth, 14th most deprived Local Authority in the UK in 2010

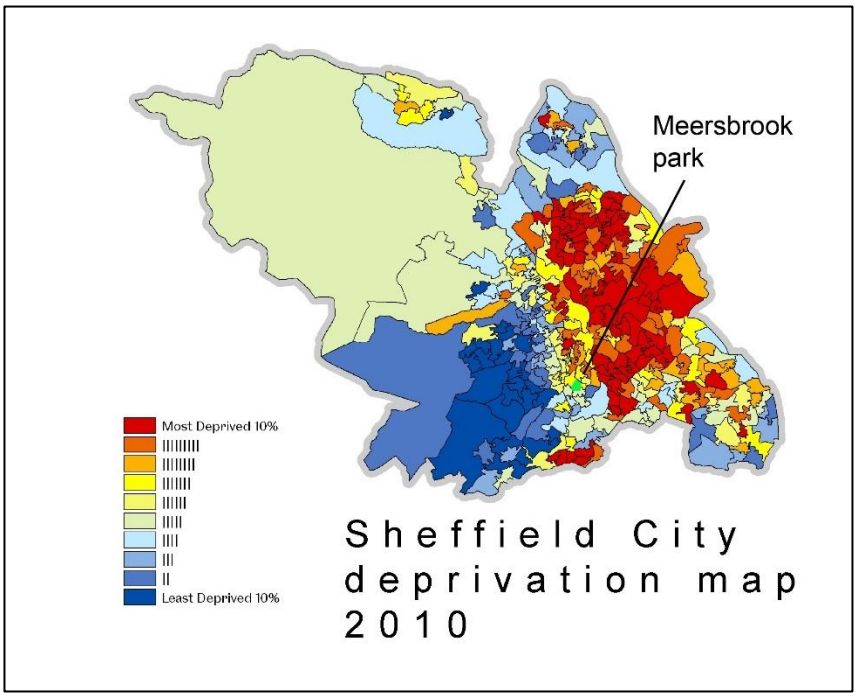


Figure 7: Meersbrook Park, Sheffield. Map showing the location of the Sheffield research site, Meersbrook Park, which lies between the deprived east and affluent west of Sheffield, here shown in red and blue respectively. Sheffield, in 2010, was the 84th most deprived local authority district in the UK. (Source Rae 2011)

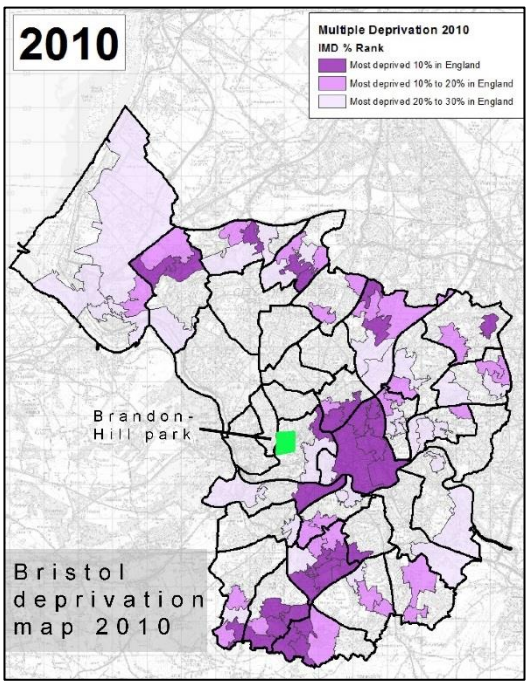


Figure 8: In 2010 the city of Bristol was the 94th most deprived local authority in the UK. Brandon Hill Park is located to the West of the main deprivation clusters in Bristol.Source DCLG

All of these parks had large areas of mown grass, were relatively central and purported to have a diverse usership. Meersbrook Park in Sheffield covers approx. 18 hectares (45 acres), Brandon Hill park in Bristol 7.65 hectares (19 acres) and Queens Park in London (12 hectares) (Fig 1). Subsequently a fourth site was identified, Ruskin park in Camberwell (36 acres), on which annual plants were sown. (Figure 9)

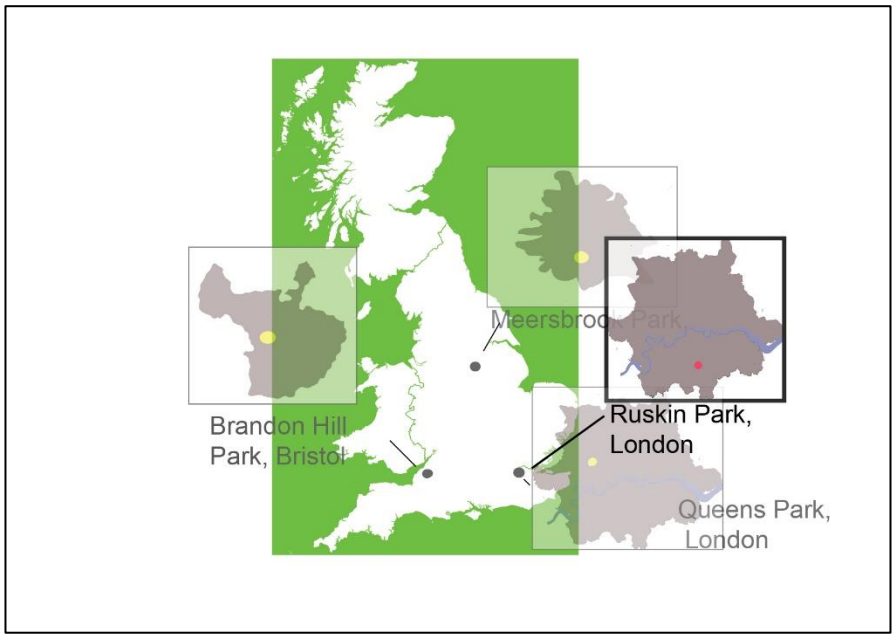


Figure 9: Updated map of all research sites after addition of Ruskin Park, London as fourth site

3.3.1 The Parks

Despite the parks fulfilling the very broad criteria specified by the project, as might be expected they were very different in nature and very differently managed. They will be discussed in terms of their physical characteristic, and their potential user profile.

Queens Park, London

Queens Park is in the north west London borough of Brent, one of the most densely populated boroughs in London and a borough that has the second highest level of migration in London: in 2011 71% of the population were non White British. (Council 2011). In 2010 Brent was ranked the 24th most deprived local authority in the UK (out of 354), in 2015 39th. Despite the high levels of multiple deprivation in this borough, like most inner cities there are areas of wealth in the immediate vicinity of the park.

Figure 10: Queens Park, London. Map showing Queens Park in relation to the deprivation of central and north-west London. (see Figure 11 for larger scale) Source DCLG.

Scrutiny of the deprivation data for the areas around Queens Park show that education and skills and employment are actually quite low, in terms of deprivation with most of the LSOAs here falling into the less deprived 50% but barriers to housing are very high in terms of deprivation and this is most likely because most of the housing stock in the Queens park area is not affordable. Deprivation is also high in relation to crime and living environment. This latter domain includes road traffic accidents and air pollution amongst its indicators. This densely populated area of North West London, like any inner city, will score highly for deprivation in this domain. There is actually enormous wealth in this

area which is reflected in the very high level of education, skills and employment and lack of affordability of the housing.

Figure 11: Queens Park, London: site (as above but larger scale). Queens Park is shown here to be in the fourth most deprived decile, in terms of multiple deprivation, in the UK. Source DCLG.

Queens Park became a park after being used as a site for an agricultural fair in 1876. It is a flat area of mown grass punctuated by clumps of trees and shrubs; there are two playgrounds and a paddling pool, a mini zoo, sporting facilities, a café, a pitch and putt course, a formal garden and many other features that meet the needs of the broad cross-section of the local residents. Residents are ethnically and socio-economically as diverse as one will find in the middle of a capital city. Large council estates are juxtaposed with 7-bedroom Victorian houses around the park. On one side of the park there is a large mosque, with proposals for an Islamic School. Just to the northwest of the park are streets of large Victorian villas and a high street with very expensive shops.

During the peak season the park employs 17 members of staff on a full-time basis (pers. comm with Simon Lee, superintendent of this park). The local authority looking after this park is the City of London, in spite of the fact that the park is not located in the city of London, but in the London Borough of Brent. It was given to the City of London in 1886 and is funded by a fund called “City Cash” and run, as are all the open spaces of this unique local authority, as a charity “at no cost to the tax payer” (Pers. Comm. Simon Lee). It is worth briefly discussing Queens Park here in the context of its unique governance. The City of London is a local authority, a city and a county within London that occupies approximately 1.2 square miles (2.9 square kilometres) of the financial district of London. It constituted most of London from the time of the settlement of the Romans to the Middle Ages. It lies outside Parliament’s jurisdiction, its rights are said to predate modern political Britain and only four of its 24 electoral wards are voted upon by

residents. The other 20 are voted by businesses whose vote is proportional to their size. There are four layers of elected representatives in the City of London, all of whom must be City of London "freemen" to be elected. To be a "freeman" you must be a member of a "livery", of which there are more than 100. As George Monbiot put it in 2011

"It's the dark heart of Britain, a place where democracy goes to die, immensely powerful, equally unaccountable"(Monbiot 2011)

As well as being a local authority looking after its residents, the City of London and an independent financial lobbying organisation (on behalf of the banks and other financial institutions that vote in its representatives). It also a benefactor. It funds many charities out of a fund called "City Cash", a private fund built up over eight centuries. (Shaxton 2011). It is this charitable infrastructure that allows the City of London to manage and maintain areas of green space that lie outside its geographical boundaries. It looks after 11,000 acres (4,500 hectares) of green space in and around London that include Epping Forest (2,500 hectares), Hampstead Heath, cemetaries, commons, public squares and two inner city parks of which Queens Park is one. Each green space that is not within the Square Mile is run as a charitable trust. Organisationally the greenspace portfolio is looked after by four different sections. The person in charge of each green space or group of greenspaces is known as the superintendent. It was thought that this unique set-up would be particularly relevant to this research project. Queens Park, indeed all the greenspaces looked after by this Local Authority, is known in the industry to be particularly well resourced (as reflected by the 17 members of staff).

Figure 12: Queens Park, London, with the grid. Source. googlemaps

The site in Queens Park used for the research was one of several pre-existing 'bunds' within a large expanse of flat, mown grass. The bunds are slightly raised areas created out of the spoil that was dug up when an extensive drainage system was installed in the park. The City of London had been trying for years to establish wild flower plantings on these bunds to provide an antidote to the large, flat expanses of mown grass that make up this park.

Figure 13: Queens Park, London. The three "bunds" of which the most westerly one was used as the research site as it matched the dimensions sought by the research design (ie 300 sq. m)

Brandon Hill Park, Bristol

The next research site was Brandon Hill Park in Bristol. It is considered to be Bristol's oldest park, given to the Corporation of Bristol in 1125. It is a steep hill in the centre of Bristol and is crowned by a tower, built at the end of the 19th century, which was erected to celebrate John Cabot, an explorer native to Italy who settled in Bristol and went on to discover North America in 1497. In terms of deprivation Brandon Hill Park is in the fifth most deprived decile in the UK (shown yellow on the map below). This LSOA is neighboured by areas of increasing affluence towards the west of the city, and increasing deprivation towards the east. (See Figure 14). Like the other LSOAs that the inner city parks are based in, deprivation is highest for the crime, barriers to housing and living environment domain, while employment, education and income were in the 50% least deprived LSOAs in the UK.

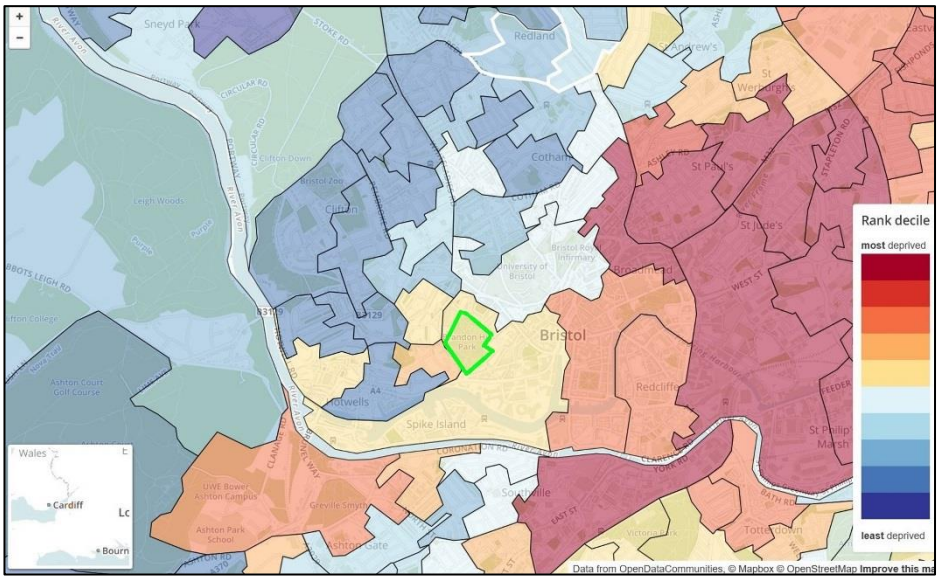


Figure 14: Brandon Hill park is situated west of the centre of Bristol. It is in the fifth most deprived decile in the UK. Source DCLG.

The tower is 120 feet tall and, although closed to the public, was built to enhance the panoramic view of Bristol and the surrounding countryside. Currently 5 acres of this park (one quarter) are a designated nature reserve managed by the Avon Wildlife Trust. Grass is left to grow long and cut just once a year (by Bristol City Council) allowing meadows to grow. Trees are coppiced as necessary. The other three-quarters of the park comprise mown grass, solitary trees and shrubs, a rock garden, a playground and toilets. There is one full-time member of staff and a

mobile mowing/litter-picking team. At the time of the research the park was being looked after by Continental Landscapes (a company contracted to look after 75% of Bristol's open spaces) but there was talk of bringing Bristol's grounds maintenance back in-house as the current contractual arrangements were not considered satisfactory. The park is situated in the city centre and is used by workers, students, tourists and local residents.

The 300m^2 plot used for the research was situated approximately halfway up Brandon Hill itself near to the south-eastern entrance of the park. It was situated within an area of mown grass punctuated by solitary trees and overlooked by benches on the paths leading up towards the top of the hill.

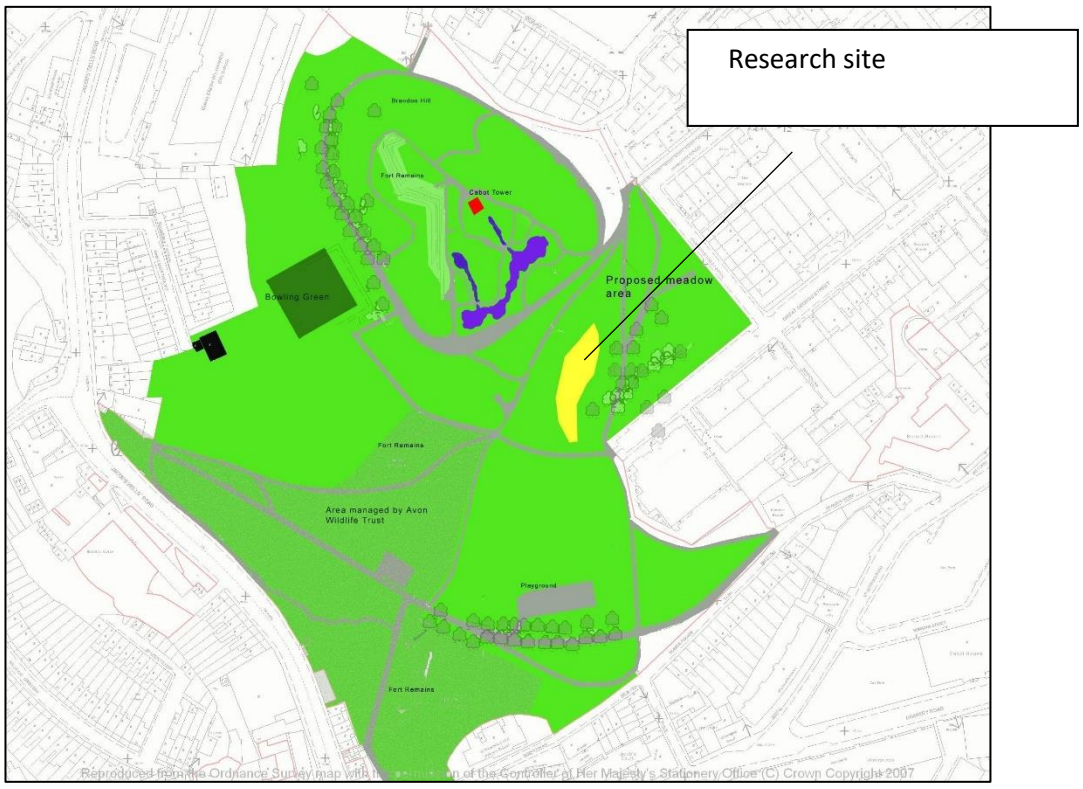


Figure 15: Brandon Hill, Bristol. Location of research site within the park.

Figure 16: Brandon Hill, Bristol. Location of research site, aerial photographic view

The site to be sown was a sloping area of mown grass (see Figure 17).

Figure 17: Brandon Hill, Bristol. Photograph of site to be sown, looking south-east.

Figure 18: Brandon Hill, Bristol. The Avon wildlife trust looks after half of Brandon Hill Park. It lets the grass grow long and maintains them like traditional hay meadows, cutting them once a year and removing the hay.

Meersbrook Park, Sheffield

Meersbrook Park in Sheffield similarly commands panoramic views of the city of Sheffield and the spectacular countryside in which it sits. It is a neighbourhood park located in the inner city suburb of Meersbrook four miles south of the city centre. Like Brandon Hill park in Bristol, to the east of Meersbrook stretch areas of quite high deprivation, with very low deprivation to the west.The lower deprivation, like Bristol, lies on the outside of the city. This is characteristic of deprivation patterns in the UK.(Rae 2011)

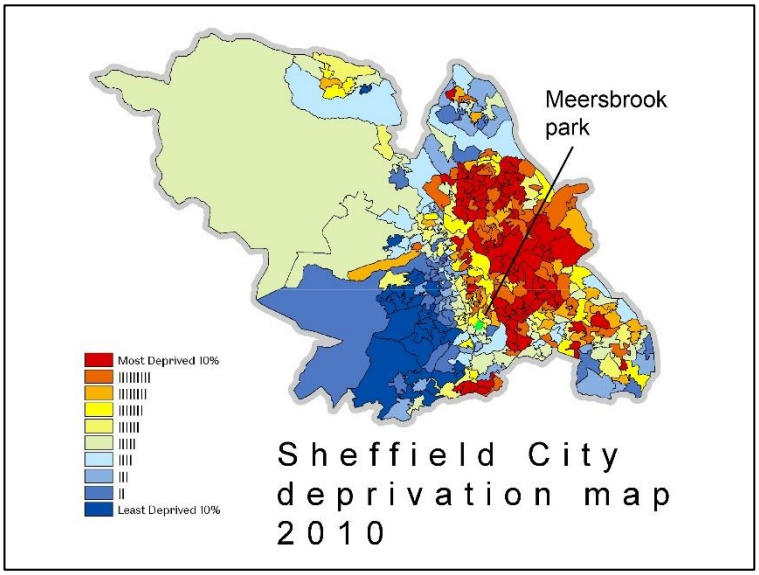


Figure 19: Meersbrook Park, Sheffield. Map showing patterns of deprivation in Sheffield in 2010. The darkest red shows the most deprived areas and the darkest blue the least deprived areas. Source:Rae (2011)

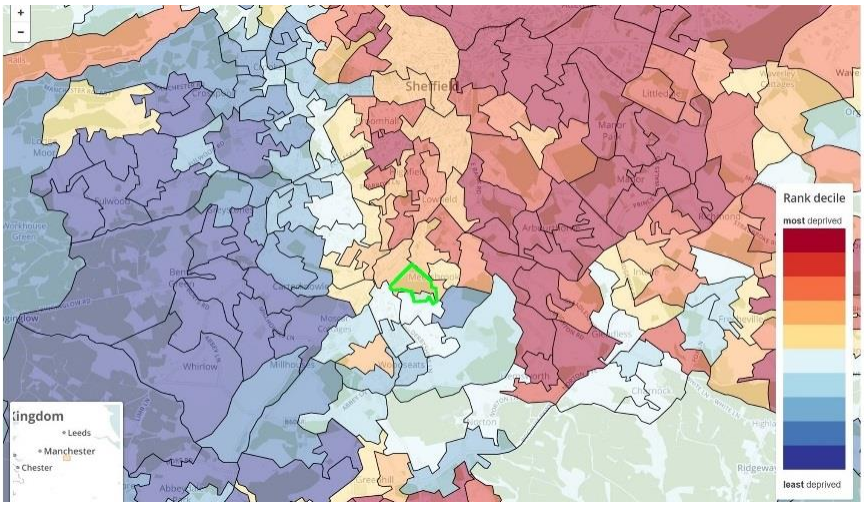


Figure 20: Meersbrook Park, Sheffield. Map showing the LSOA which the park sits in, straddling the middle of the deprivation continuum (also see more detailed map below). This map clearly shows the distinct patterns of deprivation in greater Sheffield and Meersbrook Park's situation in relation to these patterns.

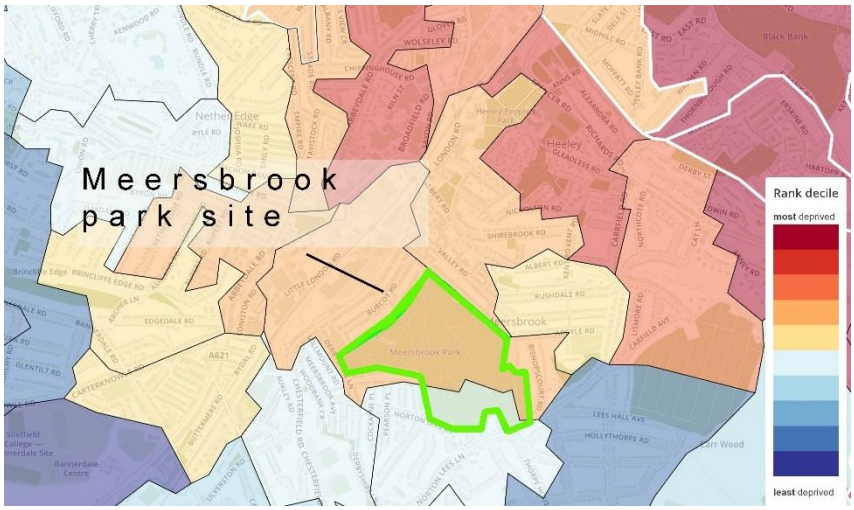


Figure 21: Meersbrook Park, Sheffield. Larger scale map where the south of the park can be seen to be in an LSOA which is in the fifth *least* deprived decile in the UK, and the rest in the fifth *most* deprived decile.

Figure 22: Meersbrook Park, Sheffield. Location of research site, aerial photographic view.

The park has a playground, tennis courts, community garden, large areas of mown grass and trees - single trees and areas of mature woodland - and shrubberies. There is a small amount of formal planting. There are two historic buildings in the Park: Meersbrook House, a Grade II listed building occupied at present by Sheffield City Council; and a museum called Bishop's House. Meersbrook House was formerly the John Ruskin Museum. The local population comprises residents of large Victorian houses and small terraced houses, typical of late 19th century urban development. "Hippy" is a term applied loosely to a section of the local community (pers. Comm. James Hitchmough), probably due to the affordability of the housing. There is very little social housing/estates near to the park, but the main Chesterfield Road passes by two blocks to the north of the park and there is a railway and small industrial park nearby. Prior to becoming a moderately industrialised but predominantly residential area the land was used for agriculture. It features in Harold Armitage's book "Chantreyland", a book about Norton, the area in the south of Sheffield that Meersbrook Park sits in. This book, written over 100 years ago, captured and commented upon the transformation and urbanisation of the arcadian rural landscape of outer Sheffield.

> *"in the future, when Sheffield, as large now as London was in the Stuart times, shall have blotted out her green borderland as London has done, when Ecclesfield is as Camden Town, when Mawfa Lane has been macadamised, Gleadless has been*

> *peckhamised, Norton Brixtonised, and Cold Ashton is as upper tooting"*

In the context of this study the quote is very prescient: the parallels between areas in the two cities continued not only through the urbanisation he foresaw, but also through progressive stages of decline and then gentrification in the course of the following century. The final site to be sown is very near to Brixton. All of the parks used in the study were once privately owned parkland around which residential housing was built: Georgian, in the case of Bristol (possibly by merchants and their associated wealth) and Victorian in the case of the other three parks.

This park differed from the others because of the landscape context in which it sits, with views of the Peak district and beyond. It was thought that this landscape context may influence perception of the naturalistic planting

> *"Yet surely this is not so beautiful, or grand, as the view on the chesterfield road, a little way above Heeley, where an amphitheatre is open to the eye, comprehending an expanse of rustic and sylvan scenery of that description which delights not only the senses, but the heart; wide farms backed by distant moors, springing coppice, green lawns, neat cottages, comfortable houses, ancient mansions, the simple church of Eccleshall Bierlow, and the shining reservoirs of water in the valley below you, altogether give a scene so gay, various and interesting, that I cannot help preferring it to every other around us …"*

Although Figure 19 shows the LSOA that Meersbrook Park resides in as the fourth most deprived decile in the UK in terms of the index of multiple deprivation, a closer look at the deprivation statistics shows that in terms of income and employment, the LSOA that Meersbrook falls into is in the fourth least deprived decile and education is in the 3rd least deprived decile. (Income and employment make up 45% of the index of multiple deprivation). This can be translated to mean that on average, residents around the park are educated and employed. The "barriers to housing" domain is quite high in terms of deprivation (but considerably lower than the London sites, probably because houses are cheaper and more accessible to the educated and employed local population). This LSOA is

more deprived but scrutiny of the LSOA shows that most of it is made up of the park, and a large part of it a main road and industrial park; the “living environment” domain comprises air pollution and road traffic accidents.

Figure 23: Meerbrook Park, Sheffield. Location of the Research Site: the site was east of the centre of the park, adjacent to an area of woodland.

The site used for the meadow was an area of 300 square metres of mown grass adjacent to the large area of deciduous woodland that characterises the main vegetation of this park. As can be seen on the map fig.26, it lay just to the east of the main path that transects the park, but near the southernmost entrance to the park. It was also away from the main features of the park such as the playground, tennis courts, community garden, listed buildings and viewing spots. The main park users walking past this area were those entering from the south entrance

and dogwalkers circumambulating the park.

Figure 24: Meerbrook Park, Sheffield. The research site was next to an area of deciduous woodland. This photograph shows the many dog walkers (and their dogs) who use the park

Figure 25: Meersbrook Park, Sheffield. Research site (during preparation).

Figure 26: Meersbrook Park, Sheffield

Ruskin Park, London

The fourth park selected as a research site was Ruskin Park in Camberwell, South London. It is situated in the London Borough of Lambeth and maintains large areas of social housing. Amongst the many ethnicities represented locally, Afro-Caribbean predominates. Camberwell is next to Brixton, and Ruskin Park is one mile from the centre of Brixton. In 2010 Lambeth was the 15th most deprived local authority in the UK. It is a very densely populated borough (twice the national average), and like most cities, has a disproportionate representation of 25 – 34 year olds in its population (higher) and older people (lower).

To the north of the park are areas of high deprivation in terms of employment, education, health and very high deprivation in terms of barriers to housing, crime and living environment. To the south of the park there are areas of very low deprivation in terms of employment, income, and education (indeed skills and education are in the least deprived 50% all around the park) but again, most of the LSOAs in this inner city area (even the ostensibly suburban-looking unaffordable LSOAs to the south of the park) fall into deprived categories in terms of "barriers to housing" and "living environment". Housing is very expensive and out of reach of most 35-year-old professionals (one of the measures for deprivation). Interpreting this in terms of our study, park users are likely to be educated and in work, but unable to purchase in the area. It should not be overlooked, however, that to the northwest of Ruskin Park there are areas of large housing estates where deprivation is high across all domains.

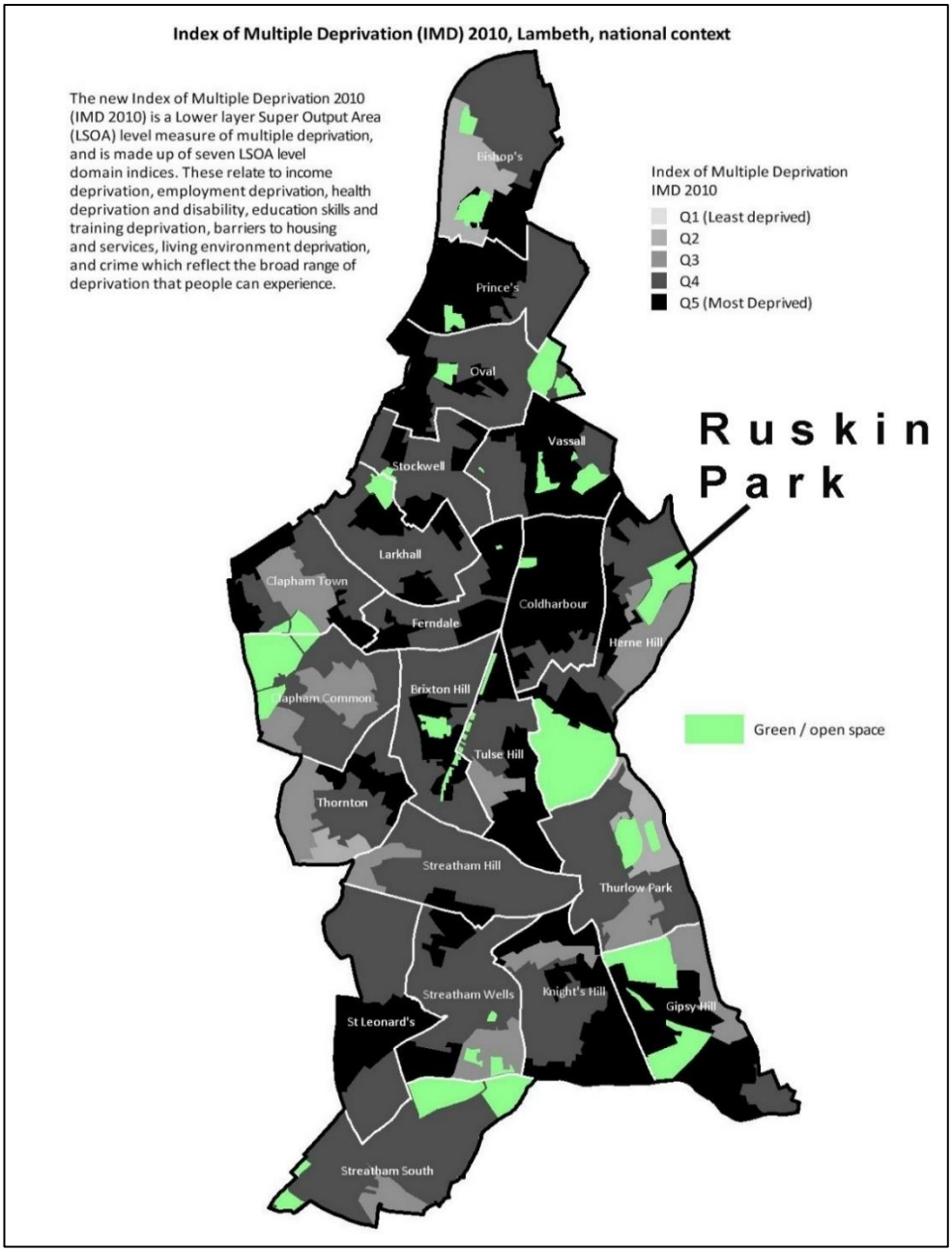


Figure 27: Ruskin Park, London. Map showing deprivation in the London borough of Lambeth. Ruskin park is in the Herne Hill ward, which is one of the least deprived wards in the borough. Source NHS Lambeth

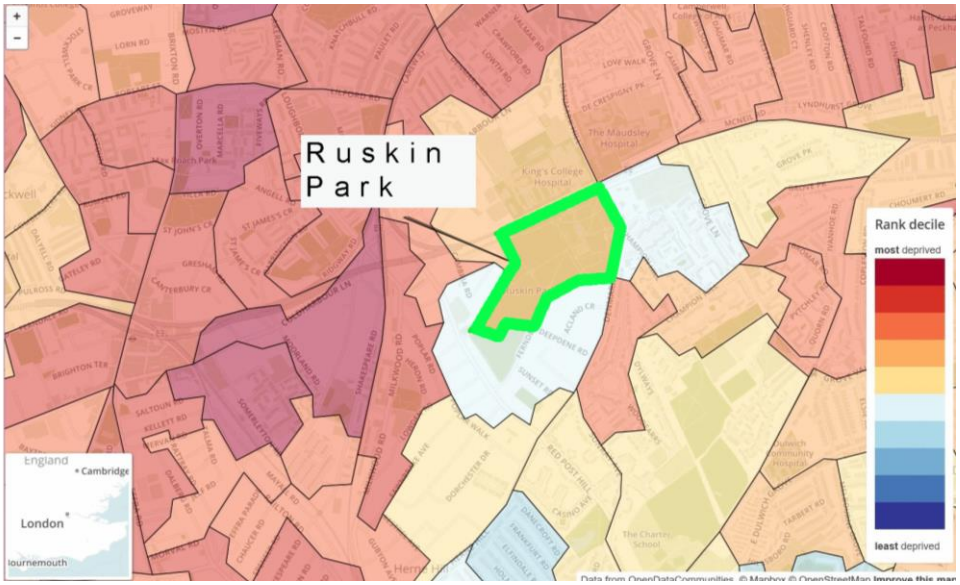


Figure 28: Ruskin Park, London. Position of park relative to deprivation ranks. Source DCLG

The park also abuts a large teaching hospital, Kings College Hospital, whose employees and patients form a sizeable part of the park usership. It is a 36 acre park named after John Ruskin, the famous artist, writer and social campaigner who lived in Camberwell for approximately 50 years of his long life. The park has tennis courts, a children's play area, a paddling pool, formal gardens, a disused bowling green (used for the research site), a pond and a bandstand. The local demographic is broad and the park is used by a very diverse range of social groups. The park, like all the parks used, has large areas of mown grass and solitary trees. There is one full-time member of staff employed in this park, supported by a mobile team.

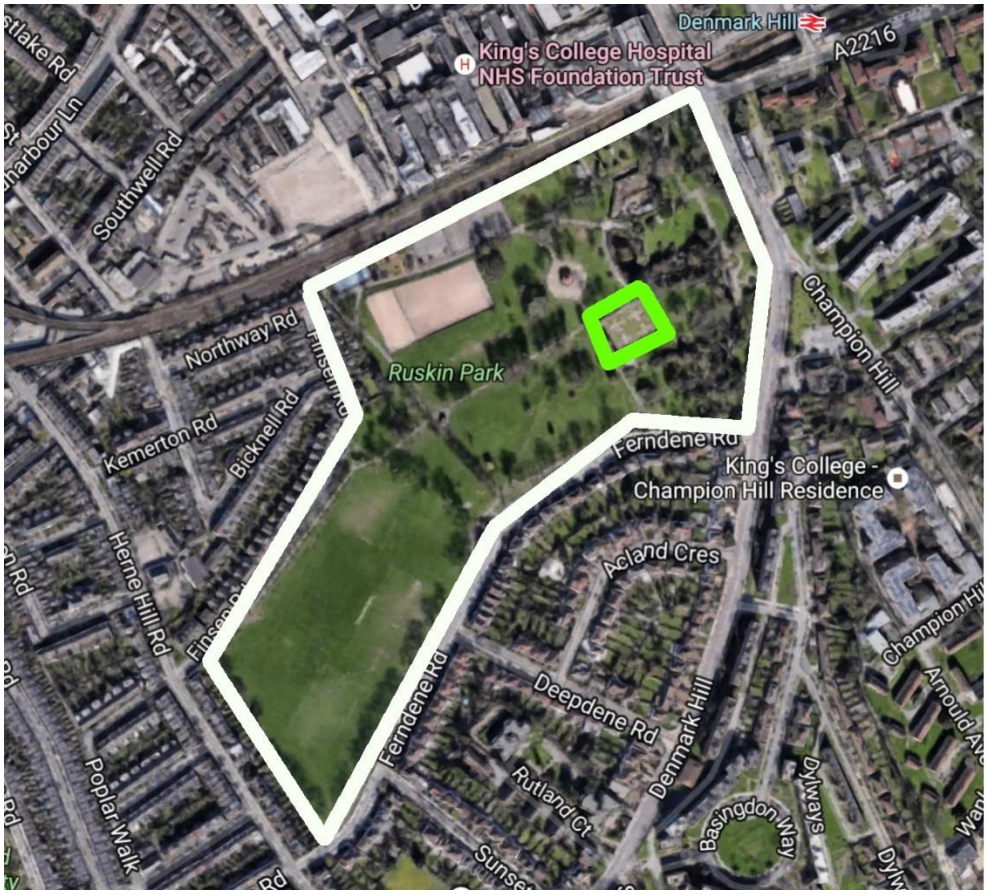


Figure 29: Ruskin Park, London. Location of the research site within the park.

Figure 30: Ruskin Park, London. Bowling Green site divided into sections.

The annual meadow was sown in the area formerly used as a bowling green. This bowling green had been divided into sections in preparation for a planting scheme commissioned by the Friends of Ruskin Park. Money had not been raised for the planting, a 'labyrinth' of perennial plants and shrubs. Lambeth Council was approached and offered a 'pop-up' meadow. They, alongside the Friends of Ruskin Park, agreed to allow it to be sown.

All four of the parks are physically typical of inner city parks one might find in the UK. Like all local authority-run public services, particularly parks, they vary in facilities offered, management structure and designated resources (CABE 2008). This is most clearly exemplified by a quick observation of staffing levels. 17 members of full time staff are employed in one of the parks at the height of Summer (Queens Park: 30 acres) while two of the other parks maintain a core full-time staff team of one. The latter figures are more representative of the UK as a whole. (CABE 2008)

Queens Park, London	12 full-time members of staff all year round
Meersbrook Park, Sheffield	Mobile maintenance team of 5 look after 13 sites of which 4 are parks
Brandon Hill Park, Bristol	1 Keeper + mobile team to cut grass.
Ruskin Park, London	I mobile team of 6 in charge of 18 sites.

Table 2: Staffing levels in the parks used for research sites.

3.4 Making the Meadows

3.4.1 Site Preparation

In the months prior to sowing in late winter/early spring the parks' authorities were asked to spray off and kill all of the grass with a glyphosate herbicide. It was advised that this be undertaken two or three times to kill off all the pre-existing vegetation (turf). The parks authorities were advised that cultivation prior to sowing was not necessary but that a 7-10cm layer of sterile (ie weed seed free) compost spread over each site would be the suitable sowing substrate for the perennial seed mixes. In the absence of availability of sand (proven to be the most effective sowing medium for this type of exercise) this would alleviate competition by annual weeds with the perennials at the early stages of establishment (Hitchmough and De la Fleur 2006). Of the three local authorities Sheffield and Bristol had access to green waste and the Corporation of London decided to buy it from outside.

3.4.2 Making the seed mixes

3.4.2.1 Perennial mixes

The perennial species were chosen for ease of cultivation and reliability of establishment. Ten native forb species, five non-native forb species and two native grass species were identified as suitable for the meadow mix. Nine different mixes of the three groups were created. All of the mixes contained flowers and ranged from flowery to not very flowery at all, and colourful to not very colourful at all, with the non-native forbs selected for their colourful flowers. It was hoped that by creating these different mixes some data about preference would be gathered at the questionnaire stage regarding colour, familiarity, messiness etc. This will be explored in further detail later in the chapter.

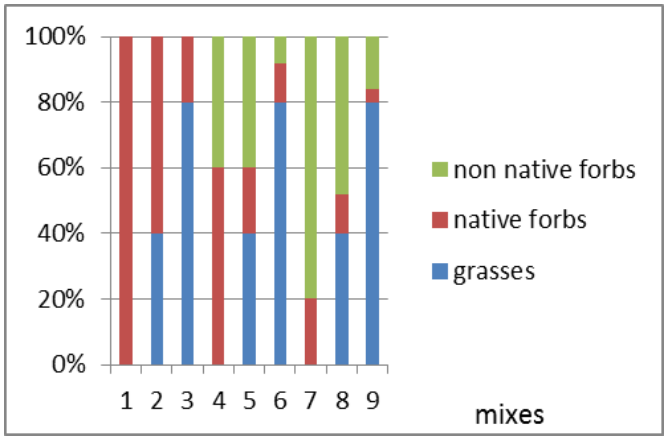


Figure 31: perennial mixes, composition

Native species	Exotic species	Grasses
Achillea millefolium (Yarrow)	*Bupthalmum salicifolium (Yellow ox-eye daisy)*	*Festuca rubra var commutata (fescue)*
Centaurea nigra (Cornflower)	*Dianthus carthusianorum (Carthusian pink)*	*Agrostis capillaris (bent)*
Galium verum (Field scabious)	*Lychnis coronaria (Rose campion)*	
Knautia arvensis (Field scabious)	*Salvia nemorosa (Ornamental sage)*	
Leucanthemum vulgare (Ox eye daisy)	*Papaver orientale (oriental poppies)*	
Malva moschata (Musk mallow)		
Origanum vulgare (Marjoram)		
Primula veris (Cowslip)		
Prunella vulgaris (Self heal)		
Ranunculus acris (Field Buttercup)		

Figure 32: species used in perennial mixes

On the technical side the perennial mixes were based on a field establishment rate of 10% which in practice means that 10 times as many seeds must be sown in order to ensure the target number of plants. The target number of species was 200 per square metre which meant that, at a 10% field establishment rate, 2000 seeds should be sown per square metre. With this number in mind each mix was configured individually based on the characteristics of the plants themselves (likelihood to establish, probable viability of seed growing habit). This, to some degree was based on the personal experience of James Hitchmough. The mixes were weighed and measured according to the specifications shown.
See appendices 2 and 3.

Figure 33 The seed mixes being weighed and prepared. January 2008

3.4.2.2 Annual mixes

The annual mixes sown in Ruskin Park were, again, chosen for ease of cultivation and reliability of establishment, as well as range of colour. 5 native species, 6 non-native species and 1 annual grass were chosen. The native species were cornfield annual plants and are commonly used in the UK to create instant flower meadows. These species do, however, tend to flower early in the summer; by July they have entered senescence leaving dry, brown 'dead' seed heads for the rest of the season. The non-native flowers were all later-flowering annual plants. Again, nine different mixes of these 12 species were chosen, ranging from flowery to not very flowery at all. The research design for the annuals exactly mimicked the design for the perennials in order to eventually elicit similar data about preference. Again the exact configuration of the mixes is shown in appendix 3.

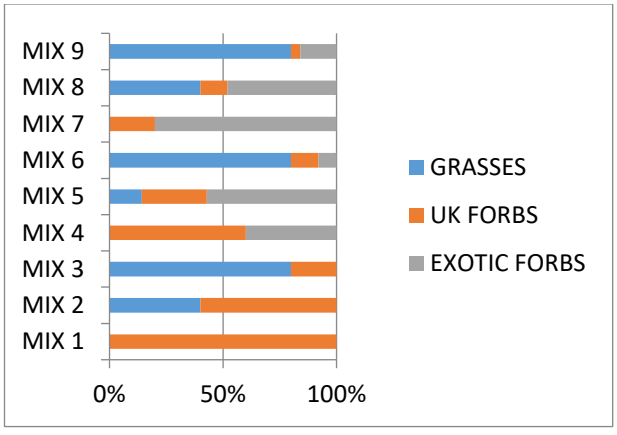


Figure 34: annual mixes, composition

Native species	Exotic species	Grasses
Agrostemma githago (Corn cockle)	Coreopsis tinctoria (coreopsis)	Lolium multiflorum
Anthemis arvensis (Corn chamomile)	Escholzia californica (Californian poppy)	
Centaurea cynara (Cornflowers)	Ammi majus (Bishops flower)	
Chrysanthemum segetum (Corn marigold)	Linum grandiflorum (flax)	
Papaver rhoeas (Poppy)	Rudbeckia hirta (Black-eyed susan)	
	Cosmos bipinnata (Cosmos)	

Figure 35: list of species used in annual mixes

Technically the calculations of seed numbers and weights differed from the perennials, the target number of annual plants per square metre was 50 and field establishment of the annuals estimated at 50%; it is for this reason that sowing annual plants is easier and more reliable. Again the functional characteristics of the plants themselves were taken into account when configuring the mixes, for example less of the corn marigold (Chrysanthemum segetum) was sown proportional to the other plants as it is known to be very successful at establishment and can overpower the colour mix with yellow.

3.4.3 Sowing the perennials

In January and February 2008 the perennials were sown. Research has shown that establishment of winter-sown perennial seed is greater than summer sown seed probably due to the greater availability of water to the emerging seedling in April (Hitchmough, De la Fleur et al. 2004, Hitchmough and De la Fleur 2006). Each 300m^2 plot was divided evenly into ten sub-plots of approx. 32m^2. The nine mixes were sown in nine of the plots (randomised) and the tenth plot was sown with an over the counter "perennial wildflower mix" from Emorsgate Seed. The reason for this was to see how pre-mixed, readily available "wildflower mixes" compared with designed mixes in terms of performance and popularity amongst park users. Each subplot was sown by hand using sawdust mixed in with the seeds as a sowing medium (approx. 6 handfuls per square metre). It was sown in two passes on each side at right angles to ensure evenness of cover (Hitchmough, De la Fleur et al. 2004). After sowing the site was raked with a soil rake to evenly distribute the seed and help it settle. Then the sites were compacted using a roller or feet.

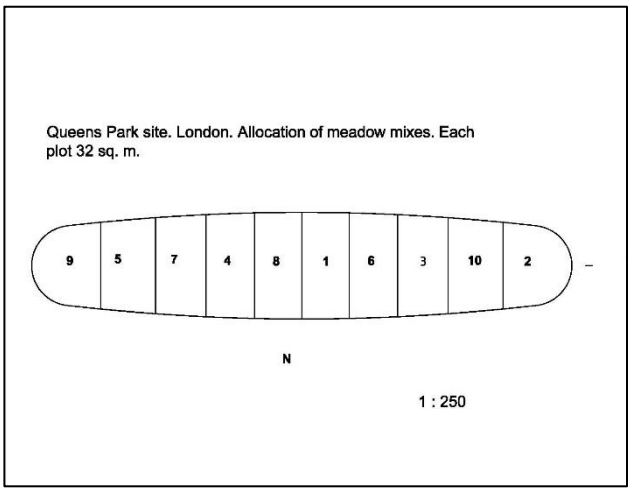


Figure 36 Queens Park site. Randomised plots

Figure 37. Queens Park site. Sowing with City of London Staff Jan 2008

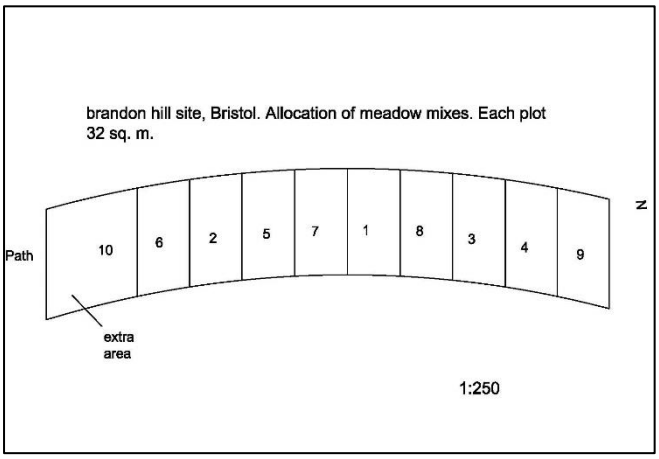


Figure 38 Brandon Hill site. Randomised plots

Figure 39 Brandon Hill site. The site was divided into two as each mix was sown in two halves (16 sq. m each)

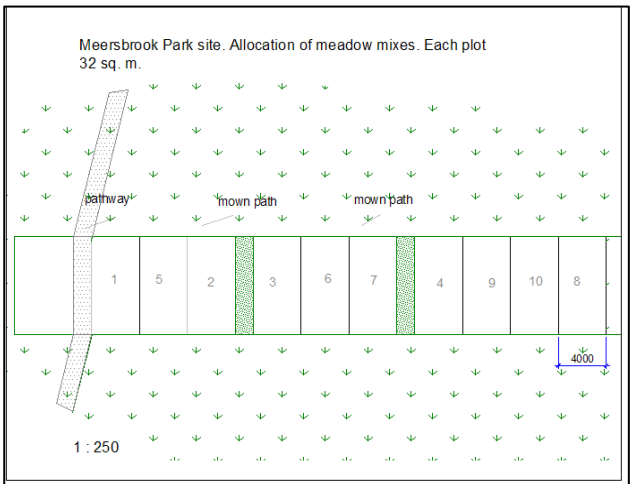


Figure 41 Meersbrook park site. Randomised plots

Figure 40. Meersbrook park site. Sowin jan 2008

3.4.4 Sowing the annuals

The annuals were sown in May 2010. The site had been sprayed with glyphosate herbicide in 2009 and was cleared of weeds prior to sowing. The bowling green had already been divided into subplots so nine of them were sown with the mixes and the rest sown with an over-the-counter cornfield annual mix bought from John Chambers seed. The subplots were not randomised. The site was watered three times per week for three weeks after sowing.

Figure 42: Sub-plots, Ruskin Park, London, 2010

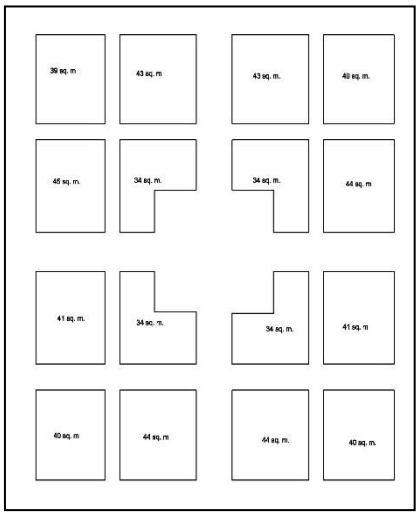


Figure 43: Sub-plots (plan), Ruskin Park, London

3.5 Quantitative survey methodology

Once the meadows had been sown and were at their flowering peak in 2010, questionnaires were conducted on park users in two of the parks: Ruskin Park in Camberwell and Meersbrook Park in Sheffield. The questionnaires were conducted over two weeks; the last week of July 2010 (Ruskin Park) and the second week in August 2010 (Meersbrook Park). They were conducted in midweek daytimes, midweek evenings and at the weekend. They were conducted in all types of weather (except rain, in rain respondents are thin on the ground). The weather was grey, windy and sunny over the week in Sheffield, and mostly sunny in Ruskin Park. These questionnaires aimed to explore attitudes to naturalistic planting amongst park users. The following areas were addressed :

- age, gender, ethnicity, education and occupation
- user patterns; visit frequency, reason for visits.
- Attitudes towards the planting
- Previous experience and knowledge of naturalistic planting
- Any preference for naturalistic planting over other types of planting typically seen in city parks

The questionnaires comprised several parts. The first part probed people's behaviour: how often did they come to the park and for what reason (multiple choice and binary choice answers)? Did they come all year round? The second part asked them outright if they liked the planting and whether they preferred it to other types of planting.

Then their attitudes to the specifics of the vegetation in front of them (and around them) were explored. In this part they were asked which was their preferred plot and which was their least preferred plot. Then they were asked a series of Likert style questions that related to strength of their opinion about their preferred plot and least preferred plot. The Likert scale is named after its developer, American social psychologist Rensis Likert.(1932) This scale was developed to gauge strength of attitude; it is (in this case) a five-point symmetrical scale that ranges from strongly agree to strongly disagree. It can also be a seven-point or even a nine-point scale. The central option is normally no opinion or neither agree nor disagree, which can distort results due to something called a "central tendancy bias", where respondents, unsure of how they feel, opt

for the middle response. (Carifio and Rocco, 2007) Likert scales are also subject to distortion by defensiveness (respondents not wanting to appear wrong), acquiescence (children often vulnerable to this) and social desirability.

In the third part of the questionnaire respondents were asked about themselves: their gender, age, previous experience of meadow planting, membership of specialist (related) organisations or friends' groups as well as their occupations. Finally they were asked if they had any comment about the meadow planting at all.

As mentioned earlier, the original quantitative research design - aimed at respondents standing in front of perennial flowers and grasses – had been adapted by 2010 for a grassless research site. The structure of the survey was the same but it was slightly adapted to exclude questions about grasses as there were none at the time of the Ruskin Park survey. There were three Likert response questions about grasses that were asked in Meersbrook Park that were not asked in Ruskin Park: "I like the balance between the flowers and grasses"; "I like the grasses moving in the wind"; and " I like the green of the grasses". Questionnaires are included as appendices.

The questionnaires were processed and two sets of data, one for Ruskin Park and one for Meersbrook Park, were created using Excel. All answers were coded apart from the comments which were grouped according to theme. The results were then summarised in graphs and tables.

3.5.1 Quantitative analysis of survey data.

For the Likert response dataset, in which respondents had specified their level of agreement or disagreement with a statement, these levels were numbered 1 to 5 for data processing purposes. There is some dispute in the literature as to what type of data, in statistical terms, Likert data is, and whether it is ordinal data (ie can be ordered but not necessarily quantified) or interval data. Ordinal data is concerned with ranks; the order or position of the responses. It is known as non-parametric data as its parameters, in terms of distance, are not known. Interval

data is concerned with the distance between the answers, which should be exactly the same and thus known as parametric data; it is quantifiable. There seems to be consensus that with careful linguistic qualification at survey and data processing stage Likert data *can* be treated as interval data (Carifo and Rocco 2007) but in this case the Likert responses were treated as non-parametric ordinal data, and statistical tests chosen suitable for nonparametric data. Interval data can be treated differently from ordinal data as statistics based on the calculation of a mean score can be conducted, rather than a median rank and results interpreted thereafter.

The statistical exploration comprised the selection of a variable - age for example - and testing a hypothesis developed around this variable, "age has an influence over perception of tidiness," for example.

Analysis of variance tests were used to test the hypotheses. The Mann Whitney u test was used to compare two groups of responses (men and women, for example) and the Kruskall Wallis analysis of variance test was used for more than two groups of responses (age groups, for example). To test the hypothesis above, for example, the Kruskall Wallis test was used as there were six different age groups.

Once significant differences between groups had been ascertained using the p-value of 0.05 as a benchmark for significance, further statistical tests, called post-hoc tests were applied. These post-hoc tests take the mean ranks for all of the different groups and identify which ones differ significantly. Analysis and comparison of the scores will show whether a particular group feels significantly stronger about a given question than another. These statistics will be further illustrated and clarified in the results section.

In summary, then, mostly identical questions were asked in two different cities about two very different pieces of vegetation. Comparing these answers of two different sets of 200 people may yield some intelligence about patterns of responses, particularly given that the two pieces of vegetation were so different.

The results are described in chapters 4 and 5. Chapter 4 describes the physical results: what actually worked and what didn't. Chapter 5 presents the results of the questionnaires (5.1 and 5.2), a comparison of the results of the questionnaires (5.3) and an overview of both sets of comments collected (5.4).

3.6 Qualitative survey methodology

The aims of the second, qualitative, part of the study were investigative. Having sown the meadows with the aim of finding out how naturalistic planting is received by the park user, a more in-depth investigation into how and why it gets planted in inner city parks and elsewhere was carried out in 2008 and 2009, prior to conducting the 2010 survey in the parks. The two data sets, qualitative and quantitative, were treated separately. As was reflected in the literature review, the scope of this study was kept deliberately wide and this breadth was to be retained throughout the research process with the hope enriching the findings; giving them depth from the breadth, so to speak. More concretely it was hoped that themes would emerge from these differently designed studies that would add valuable new insights to the management and acceptance of naturalistic planting in inner city parks.

The qualitative research took the form of identifying case studies: local authority professionals involved in the planting and maintenance of, and decision-making around, planting in parks. The local authorities that had already taken part in the study were the ones interviewed as a relationship with them had already been forged. There was also the shared experience in some cases of sowing the meadows between the researcher and interviewees, which, while not constituting a full ethnography, had the potential to add ethnographic depth to the qualitative findings. Other individuals were also identified, notably professionals who specialise in naturalistic planting.

There was a concern that the choice of interviewees might (a) not represent all of the relevant stakeholders in inner city parks and (b) be purposively skewed towards naturalistic planting. In the case of stakeholder representation indeed, other stakeholder groups such as Friends' groups could have been used in the

study, but this study chose to remain within the parameters of traditional local authority management in terms of governance, and as close to the technicalities of delivery in terms of outside organisations (thus professionals involved with NP would be interviewed). The qualitative and quantitative studies were concerned with delivery of NP, thus it was thought that a stringent exploration of the (putatively) a priori management and usership profile of naturalistic vegetation in terms of greenspaces would best inform the findings. There was a danger that expanding the stakeholder group and/or employing alternative survey methodologies such as focus groups may devalue an already wide reaching dataset (14 individuals from six very different organisations across the UK would be interviewed) as will be shown in the findings. As far as skewing in favour of NP was concerned, the ratio of non-experts/interested parties to experts was 9:5. There were nine interviewees from the city of Bristol, Sheffield and London, one "expert" from Telford and Wrekin borough council, one from landlife in Liverpool and three from Sheffield Green Estate.

3.6.1 Ethnography and the ethnographic interview

It was decided that the semi-structured, guided interview, would be the best way to interview the respondents (alternatives would have been structured, unstructured, informal or even focus groups). This semi-structured interview would take the form of an ethnographic interview: in lieu of being a full ethnographic study the interview approach could be partially ethnographic.

The ethnographic interview was described by Spradley, in 1979, as "friendly conversation" into which the researcher slowly introduces new elements to assist the informants in responding as informants. Building a rapport with the interviewee by way of lapsing into informal conversation regularly is said to be one of the key techniques to encourage informants to speak freely. The three most important ethnographic elements in the interview are, according to Spradley, explicit purpose: the interviewee needs to be told at the beginning of the interview where the researcher wants the interview to go; the researcher will control the course of the interview. The second feature is ethnographic explanation. The researcher will repeatedly offer explanations to the informant,

be these explanations about the questions, the project and the subject matter itself. There is a didactic, as well as a collaborative, element to the interview. There are many types of questions that can be asked and these were identified but they can be broadly grouped into:

1) Descriptive questions: respondents are asked for straightforward descriptions, such as descriptions of their work responsibilities, their job description and how long they have been in post.
2) Structural questions: enabling interviewers to ask about domains, such as What types of planting do you undertake regularly?
3) Contrast questions: used to elicit personal meaning from respondents. They are asked to explain their understanding of the differences and various merits of phenomena.

A more recent summary of the ethnographic interview described it as a means by which information is elicited using verbal stimuli. Interviews collect verbal reports of behaviour, meanings, attitudes and feelings that are never directly observed in the face-to-face encounter of the interview but that are the data the interview is supposed to reveal.

3.6.2 Semi-structured Interview

With this in mind, General, open-ended questions were asked and interviewees given time to speak freely. They were all interviewed in their place of work in the winter of 2009. The interviewees were asked to describe their jobs in relation to their organisation, to speak about planting in general and then more concretely to speak about naturalistic planting. It was thought that from moving from the general to the particular, embedded attitudes might surface and also other factors important to the interviewees might surface that may, albeit indirectly, have some bearing on their relationship with the notion of naturalistic planting. The types of questions asked to elicit this information fell into the nine types of questions identified by Kvale in 1996:

- Introducing
- Follow up
- Probing
- Specifying
- Direct
- Indirect
- Structuring
- Silence
- Interpreting

They were validated using, loosely, his "Seven stages of interview technique" which are worth considering. The first stage is thematising, ie deciding the subjects to be covered based on the research question, the second designing the structure of the interview, the third interviewing, the fourth transcribing, the fifth interpreting, the sixth validating and the seventh reporting. In this study the interviews were interpreted from two perspectives, one personal and the other organisational. They were validated by means of reflecting with the supervisor over the course of several meetings.

The interviews were transcribed in Word. They were all read through once. On the second read-through, notes were taken and themes were established. Then they were reread and these themes were refined. They are presented in chapter 6 on a case-by-case basis.

The wide reach of this exploration was reflected in the interpretation of the interviews. The interviews were explicitly mined for the following:

1. Evidence of technical barriers to NP,
2. Evidence of assumptions made about the expectations of park users.
3. Attitude was assessed by way of scrutiny of evidence of levels of job satisfaction.
4. Discussions of specific vegetation choices were explored.
5. Interviewees were encouraged to speak freely about their day to day work. It was hoped evidence to support the theory around goals (Wright 1991) would be found.
6. Interviewees were encouraged to speak where possible about the wider context of greenspace management in the UK, with the hope that they would reveal insights into the organisational and possibly political limitations of their day to day work.

7. Evidence of goals in relation to Wrights (2001) goal theory was sought. The context in which individuals were achieving personal goals was investigated and evidence of Wrights theories about self efficacy, goal commitment and goal difficulty identified. From a humanistic point of view individuals within local authorities (public sector workers_ were also positioned within the Matheson framework of the six orientations to work in the public sector, as was discussed in the literature review. This was highly exploratory and was aimed to supplement the more explicit barriers to NP that might surface in the interview.

3.6.3 Interviews: The questions that were asked.

OUTLINE INTERVIEW FOR MANAGERS AND PRACTIONERS. SUBJECTS TO COVER. ASK OPEN ENDED QUESTIONS.
INSTITUTIONAL FRAMEWORK

Job title,
Responsibilities (including how many people work for them)
boss?
Time in post
professional qualifications (tact)
A few facts about the local authority. Number of parks etc.

try to elicit their views of their employer, stability, financial pressures on local authority….budgets for parks?

MEADOW PLANTING IN BOROUGH/PARK.

Does your local authority have any history of undertaking this kind of planting.
What are the reasons for doing it?
What species were used.
Where was it.
Who initiated it.
How successful?
Plans for the future?
Personal views on this type of planting. What might be the disadvanatages of this type of planting. And the advantages. specifics

VEGETATION : general

What are the views of the different planting types.
Personal views and those of their park users.
What percentage of each planting type do they invest in.
How much bedding gets planted. Where do plants come from.

ECOLOGY. NATURE CONSERVATION, RELATIONSHIP WITH WILDLIFE ORGANISATIONS.

How has the local authority incorporated ideas of conservation and ecology. Who initiates wildlife friendly projects in parks.
How much influence do they have?
How effective are they and in what area?

PARKS ORGANISATIONS. FRIENDS GROUPS?

Do they exist
Views of managers on these groups?

PROFESSIONAL PUBLICATIONS THAT MANAGERS REFER TO.

Do they read them.
How useful are they.
Do they feel in competition with other local authorities if so which?

Chapter 4. Results of Meadow Sowing 2008-2010

4.1 Introduction

The perennial meadows were sown in the early spring of 2008. All of the sites were given the same pre-treatment (albeit by different people). The provenance of the compost differed for each site of course. By Autumn of 2008 some of the perennials had established enough to flower, notably in Bristol and Sheffield. By the summer of 2009 two of the sites, in Bristol and Queens Park in London, had succumbed: to rank grass in the case of Bristol, and just succumbed pure and simple in the case of Queens Park, where large, empty gaps were the defining feature of the research site 17 months after sowing. The Sheffield site, in contrast, in 2009, was a mass of chaotic and bright colour - not necessarily the colours that had been anticipated by the species shown, but colour nonetheless.

A timeline of all four of the sites is shown overleaf, three of the sites with the perennial meadow and the fourth, as dicussed at the end of chapter 3, with an annual meadow. The timeline for the annual meadow is contracted into one year.

4.1.1 Brandon Hill Park, Bristol, Research site timeline 2007-2009

BRISTOL 2007

Figure 44: Brandon Hill site, 2007

BRISTOL 2008.
Sowing day

Figure 45: Brandon Hill site, Jan 2008, day of sowing

BRISTOL August 2008.
6 months after sowing

Figure 46: Brandon Hill site, August 2008

BRISTOL August 2009
18 months after sowing

Figure 47: Brandon Hill site, August 2009

4.1.2 Meersbook Park, Sheffield, Research site timeline 2007-2010

SHEFFIELD
Meersbrook Park
2007

Figure 48: Meersbrook park site. 2007. Prior to sowing

SHEFFIELD
Meersbrook Park
2008

Figure 49: Meersbrook Park site. August 2008. 4 months after sowing. The white flowers are Ox Eye daisies.

SHEFFIELD
Meersbrook Park
2009

Figure 50: Meersbrook Park Site. August 2009. Lots of colour could be seen.The pink flowers were Lychnis coronaria. The yellow was Senecio jacobeia

SHEFFIELD
Meersbrook Park
2010

Figure 51: Meersbrook Park site, 2010

4.1.3 Queens Park, London, Research site timeline 2007-2009

LONDON, Queens Park
Autumn 2006
One Year prior to sowing

Figure 52: Queens park site. Autumn 2006

LONDON, Queens Park
January 2008
Sowing

Figure 53: Queens Park site. Sowing Feb 2008

LONDON, Queens Park
August 2008

Figure 54: Queens Park Aug 2008. A very inconspicuous display

LONDON, Queens Park
August 2009

Figure 55: Queens Park, Aug 09. The big bare patch with no vegetation on it was thought to be too well drained. One year and a half after sowing there was no vegetation growing on it.

4.1.4 Ruskin Park, London, Research site timeline 2010

Figure 56: Ruskin Park prior to sowing. March 2010

Figure 57: Mid june 2010. 3 weeks after sowing. The site was watered once per week thoroughly using a hand held hose

Figure 58: Ruskin Park annual meadow.30 June 2010. 5 weeks after sowing

Figure 59: Ruskin Park annual meadow. 7 July 2010. 7 weeks after sowing (same plot but from different angle

Figure 60: Ruskin park annual meadow 24 July 2010

Figure 61: Ruskin Park annual meadow. Early September 2010

4.2 Meadow Sowing Results

Due to external circumstances (maternity leave April 2007-April 2008) the undertaking of the questionnaires was delayed from 2009 to 2010. The Sheffield site was chosen for the 2010 survey: given the high colour content on the Sheffield site in 2009 (see Figure 50), it was expected to show similar strength of colour and diversity in 2010, which could be used to explore preference. In the event, however, by 2010 the height and colour were no longer in evidence due to premature mowing on the part of Sheffield city council who, after two years had tired of looking at the experimental plot and had mown prior to flowering. Had they not mown over the vegetation it may well have borne flower colour as it had the previous year. However there was some variety in colour and structure content so it was decided to proceed with the study as planned in Sheffield. It was also deemed necessary to sow a fourth site in London with annuals in order to generate enough variety of colour to conduct the questionnaires.

The results for all the meadows are shown in more detail in this chapter. The perennials meadows were monitored in 2008, 2009 and partially in 2010. The annuals meadow was monitored in May, July, August, September and October of 2010. Questionnaires were conducted in July and August of 2010.

In some ways it was a loss to the project that the surveys had not been conducted in 2009 on the Sheffield site, although the other two sites showed very poor establishment of the flowering plants in 2009. Had the surveys been conducted in 2009 they would have been conducted on the Bristol and Sheffield sites, which differed greatly in terms of colour content (see Figure 62 & Figure 63). Due to the mismanagement mentioned earlier, unfortunately this was not possible in 2010.

Figure 62: Brandon Hill site, 2009

Figure 63: Meersbrook Park site, 2009

Figure 64: Meersbrook park Sheffield. Research site. 4.8.2010. One of the survey days.

Figure 65: Ruskin Park London. Research site. 24.7.2010. One of the survey days

4.2.1 Queens Park, London – Meadow Sowing Results

As can be seen in the photographs (Figure 66 - Figure 69) the site in Queens Park did not generate much colour. Looking at the photos of the 'bunds' prior to sowing (Figure 66), it is evident that this site was much grassier and less floriferous than the other two 'bunds' which points to the possibility that this was a dryer site. As the employees stated in their interviews, these bunds had been created out of the spoil produced when installing an elaborate drainage system for the park and they thought that the drainage project had actually been too successful and that the soil was too dry. As can also be seen in the picture (Figure 66) the site that was selected had the added handicap of being partially overhung by a tree which, in ordinary circumstances, given the openness of the site, would not overly compromise the dryness of a site but in the instance with an already overdrained soil may have made the site chosen a less favourable one to the establishment of the perennials.

Figure 66: Queens Park site, London, prior to sowing, 2007

Figure 67: Queens Park site, London, May 2008: 4 months after sowing

Figure 68: Queens Park site, London, July 2009: 17 months after sowing. Large bare patches were visible. They corresponded with areas that had been sown with mixes 2, 10, 1 and 6. The rest of the area was being taken over by thistles.

Figure 69: Queens Park site, London, summer 2010. Grasses had managed by this time to recolonise the site.

The site had been sown in 2008, which saw a particularly dry spring (especially April). It is likely that this dry spring, coupled with the already compromised nature of the site, meant that establishment of the young seedlings was compromised, leading to large areas of no vegetation cover as can be seen in the photograph in Figure 68 taken in July 2009. It is also possible that pigeons might

have eaten the grass seed in the mixes as these bare patches are unusual and the viability of the seed is not in question. The patches do correspond with mixes that had a low exotic content and higher grass content. That said, on the rest of the plot there was poor establishment of exotics and high competition from weeds such as creeping thistle. It is worth noting here that, had a sufficient layer (50mm) of sterile growing medium been spread over the site, this may have retained moisture for the seedlings to establish.

4.2.2 Brandon Hill Park, Bristol – Meadow Sowing Results

The Bristol site was on a hill. It was reportedly sprayed twice in the winter of 2007 prior to sowing. A few months after sowing quite a lot of grass was visible, some of which was in quite large tussocks. The site had not been sprayed thoroughly enough, nor had ample compost been spread. However there was establishment of lots of the plants which were in flower by autumn of that year.

Figure 70: Brandon Hill Park site, Bristol, June 2008 five months after sowing.
Coverage was quite good shortly after sowing but much grass already in evidence including some quite big tussucks implying pre-existing vegetation had not been effectively sprayed off.

Figure 71: Brandon Hill Park site, Bristol, August 2008, close-up
Although it was only the first year establishment was better in Bristol than in Queens Park (London) with several of the exotics on the way to establishing in six months. As can be seen in the photograph there was also plenty of competition from the grasses already. The pink flower is *Dianthus carthusianorum, the white Achillea millefolium and the yellow Bupthalmum salicifolium*

Figure 72: Brandon Hill Park site, Bristol, August 2008, site end
This end corresponds with the Emorsgate mix. As can be seen there is plenty of Achillea sp. (which were present in most of the mixes) showing that there was some establishment in the first year. Therefore the dry April that affected the whole of the UK did not have the detrimental effect that it may have had in Queens Park.

Figure 73: Brandon Hill Park site, Bristol, July 2009
Not much more colour in evidence than in 2008, in fact quite a lot less. This is probably due to competition from grass, possibly contamination from compost. The site had been cut in Spring.

4.2.3 Meersbrook Park, Sheffield – Meadow Sowing Results

Sheffield was the most successful meadow sown, in terms of establishment and colour content.

Figure 74: Meersbrook Park site, Sheffield, Spring 2008, 3 months after sowing.

Germination and coverage was quite good and even (see Figure 74), with much less grass than in Bristol, and much less sparse than in Queens Park, London.

Figure 75: Meersbrook Park site, Sheffield, August 2008

In the first year, there was good evidence of establishment of some of the species. In Figure 75 we can see the salvia, achillea and the oxeye daisies - as well as the inevitable weeds. Salvias could also be seen in the first year at the Bristol site.

Figure 76: Meersbrook Park site, Sheffield, June 2009

By June 2009, the plot was characterised by robust colour and very good establishment of some of the species such as the *lychnis coronaria*, seen in the foreground of Figure 76. The yellow is provided by the self-seeded *Senecio jacobea*. Visible on the ground are the seed heads of the broad leaved dock which it was necessary to remove (Prof. James Hitchmough can be seen doing this in Figure 77)

Figure 77: Meersbrook Park site, Sheffield, June 2009, from a distance

Figure 78: Meersbrook Park site, Sheffield, August 2010

The site showed considerably less colour and height by 2010 (see Figure 78). This was due to the meadow having been mown over earlier in the year. There was, however, a certain amount of diversity but the aesthetics were very different from 2009. It was on this plot that the questionnaire survey was conducted in 2010.

4.2.4 Ruskin Park, London – Meadow Sowing Results

The annual meadow at Ruskin Park was relatively successful in term of it fulfilling the requirements of the project. It was sown (quite late) at the end of May and the different mixes were identifiable in the plots by mid-July (see Figure 84 and Figure 85 on pages 153-154) and the questionnaire could be conducted as planned. In general terms the results were predictable: in early summer the plots sown with mixes that were predominantly native (that had actually been sown with cornfield annuals albeit at different densities) had very good colour and, indeed, were very popular. The cornflowers ceded to the corn chamomile, corn cockle and corn marigolds and the poppies made a good show. Early in the summer the exotic annuals were not at their best but as the summer developed and the British native annual wildflowers receded they put on some girth and by late August and through the whole of September the bright pinks of the cosmos and oranges of the ever flowering Californian poppies dominated the whole area of planting. This planting was very popular in late summer. People came and sat amongst the plants on the mown grass and could be seen really studying the flowers. People reported that they had visited it repeatedly and it even featured in the London Evening Standard's "Homes and Properties" section, *Spotlight on Camberwell* (Figure 86)

Figure 79: Ruskin Park site, London, prior to sowing. Sand is evident on the surface of the soil. The site had formerly been a bowling Green. Top dressing with sand would have been a regular part of the maintenance schedule and this sand was in evidence all over the site

Figure 80: Ruskin Park, London, sub-plot: Mix number 1, early July. A typical early show of a cornfield annual mix. The blue soon ceded to yellow and white, and was brown and senescent by the end of August.

Figure 81: Ruskin Park, London, sub-plot: Mix number 8, early July (same day). Early in the season this plot was characterised by gaps and ephemeral weeds, later in the season it would be fill of two-meter high Cosmos.

Figure 82: Ruskin Park, London, a sunny day in October. The native plots can be seen in the background, in the foreground is plot number 9. People enjoyed visiting and sitting on the mown grass amongst the flowers. Many also showed a lot of interest, like the man in the photograph who has stopped to look at the flowers.

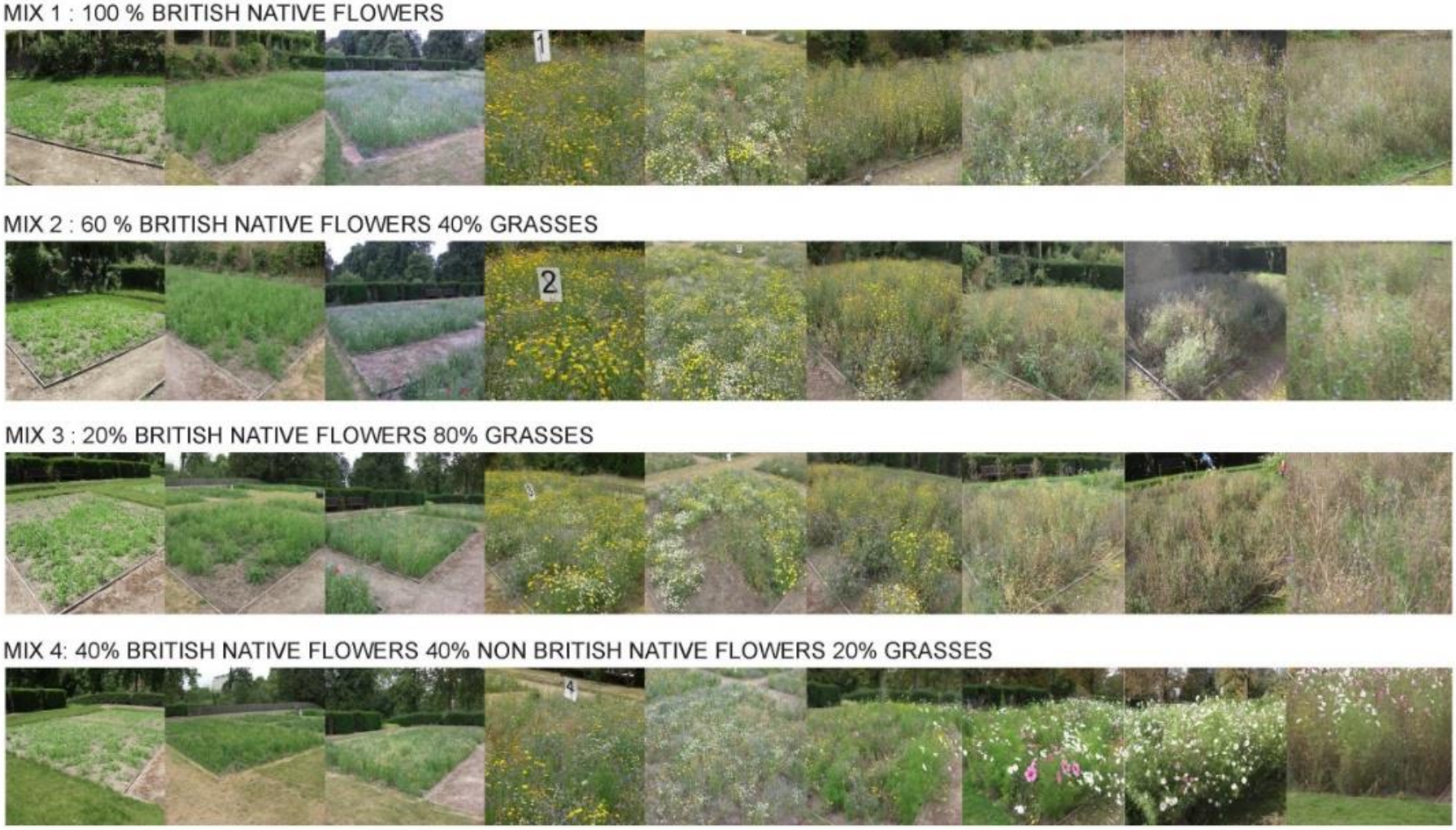


Figure 84: Ruskin Park, London, mixes 1-4, summer-autumn 2010

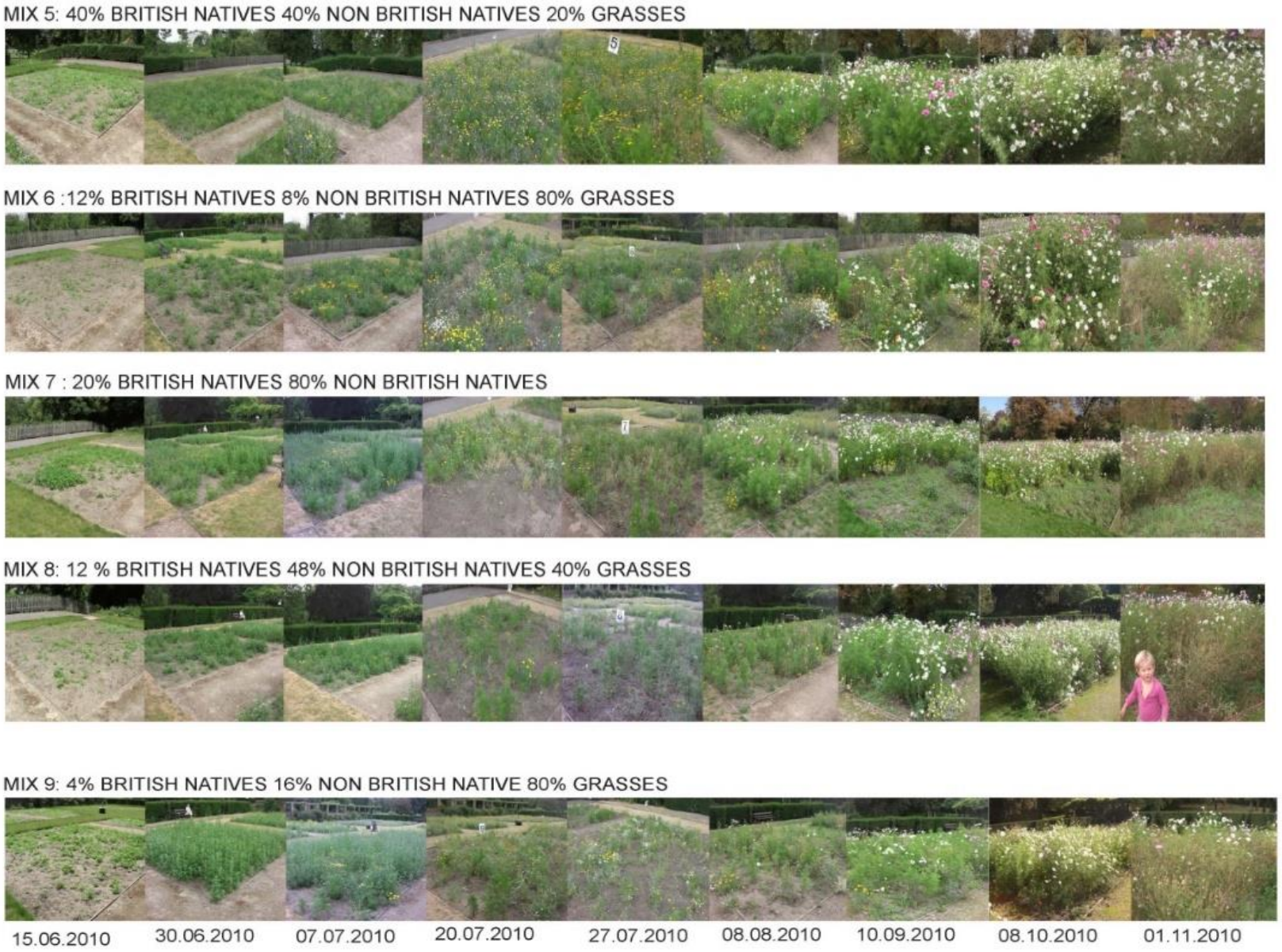


Figure 85: Ruskin Park, London, mixes 5-9, summer-autumn 2010

Figure 86: Photograph from evening Standard. "Spotlight on Camberwell" Homes and properties section

4.3 Discussion of results of sowing.

The perennial meadows did not provide the colour deemed necessary as a basis on which to conduct the surveys. In terms of long-term establishment of the seeds that had been sown, they all failed to a greater or lesser degree. Reasons for this failure are various and are discussed in relation to each site below.

4.3.1 Queens Park, London

The area used in Queens Park, London, was called a "bund". It was one of three low mounds of spoil that had been generated when installing an elaborate drainage system in the park in an attempt to alleviate the annual flooding of the amenity grass, which had made winter sports (notably football) impossible in this small park. The spoil comprised subsoil, low in nutrients and obviously well drained. It had been deemed suitable for wildflowers for these two reasons. Previously seeds had been sown on these sites but the results had been characterised by short periods of colour provided by single species, such as Ox eye daisies and Mustard Rocket *Sisimbrium irio.* Once these had flowered the whole site would succumb to creeping thistle and docks that would then exploit the scant resources that were left. It was hoped by the City of London that this research project would improve the bunds by lengthening the flowering window.

In terms of the project the site was treated according to instructions. It was noticed that the compost was a little bit thin in places prior to sowing. What was really noticeable in the Spring of 2008, after germination, was the gappiness. Spraying had obviously been successful but there were big areas of no vegetation at all, not even grasses. It had been a very dry April and the site was partially overhung by a tree. One of the employees at Queens Park posited that actually the site might even be too dry. This would make sense in terms of the previous species that had managed to survive on this site. Pigeons may also have contributed to the problem, eating the seed: on the day of sowing pigeons were seen pecking at the areas that had been sown. Whatever the reason was at Queens park, the initial problem was not functional competition at the outset, rather a failure of seeds to establish (or possibly even germinate) early in the year. The gaps persisted for more than a year suggesting that the seed was in fact, eaten (otherwise it might have been expected to have lain dormant and germinated in the autumn or Spring of the following year). Careful scrutiny of an

earlier photograph of the site (, coupled with evidence from this project's attempts, would indicate that there is a patch of the bund that most plants will not grow on, not even creeping thistle.

Figure 87: Queens park research site in 2007, prior to preparing the site for sowing. The area at the front corresponds with the area shown in the right hand photo where the vegetation failed to establish

Figure 88: Meersbrook Park, Sheffield

4.3.2 Brandon Hill Park, Bristol

The site in Bristol, by contrast, showed good vegetation cover in the Spring. By August many of the sown species were identifiable but even in the Spring of 2008 during the first visit there was already evidence of grass that had not been killed: there were some quite large tussocks and thick cover. These did not occur uniformly over the site, there were also areas that were quiet gappy. As in Queens Park, there was not much evidence of uniformity of germination during this first site visit after sowing. However, unlike Queens Park, many plants did eventually manage to establish and young plants in flower were evident in late summer, notably *salvias, linum, and lychnis*.

4.3.3 Meersbrook Park, Sheffield

The first site visit to Sheffield was much more promising. It appeared that most of the pre-existing vegetation had been killed off successfully and germination had been successful. The seeds looked well on their way to early establishment and the different ratios of forbs to grasses were already in evidence. By late summer

the site was white with Oxeye daisies and *Achillea* and by 2009 many of the plants had established, were in flower and also attaining great height. In 2009 there were also a lot of weeds such as broad leafed docks and ragwort. The vegetation was tall, wild and luxuriant. It was looking promising in terms of colour for 2010, the anticipated year for the questionnaire research. It did get cut down late in 2009 but also in the Spring of 2010. This cutting hugely compromised the height and colour content that had been anticipated in the summer of 2010. The site on which the surveys were conducted was characterised by long grass with the occasional splash of colour provided by an uninvited weed. The cutting was done without consultation with Sheffield University and was an oversight.

All three perennial sites, then were subject to problems, though not the same ones. Bristol and Sheffield were most likely mismanaged while the Queens Park site probably had unusual edaphic conditions and possibly problems with predation.

4.3.4 Ruskin park, London

The annual meadow at Ruskin Park did provide plenty of colour. No grasses at all germinated. This is most likely due to pigeons which did again descend en masse after the sowing and were seen pecking at the site at this stage. As far as the different ratios were concerned the differences between them could be read differently at different times in the flowering season. For example at the beginning of the season, when the cornflowers were the dominant flowers in terms of colour, plots 1 and 2 looked similar in colour content, with plot 3 having less (the ratios of native:grasses had been 100% natives, 60:40 and 20:80 respectively). By the time the cornflowers had ceded to the yellow of the corn marigolds, plots 1, 2 and 3 looked very similar. At this time of year the plots sown with a very low native seed content (plots 7, 8 and 9) were looking very spare, given that there was no evidence of any grasses. Gaps and weeds were the dominant aesthetic. However as the season progressed these three plots became more and more similar looking as the Cosmos had successfully established and they got bigger and bigger until by September the three plots were virtually indistinguishable and full of bright colour which lasted until late October. The

density and intensity of colour was highest at the beginning (on the native plots) and end (with the non-native plots) of the season, with more variety but more moderate colour in the mixed plots.

What became clear in the Ruskin Park site was that nature abhors a vacuum. In the absence of grasses the Cosmos over time filled the spaces, both the natives and the exotics.

Figure 89

Figure 90

Chapter 5: Results of Questionnaires

5.1 Introduction to the results.

The results of the quantitative study are presented in this chapter. To recap, two sets of surveys were undertaken. One surveyed the attitudes of users in Meersbrook Park, Sheffield and the other surveyed the attitudes of users in Ruskin Park, London. The first questionnaires were conducted in late July 2010 in Ruskin Park, over a period of a week, where 176 people filled in the questionnaire. The second survey, in Meersbrook Park, comprised a sample of 187 and was conducted over a week at the beginning of August 2010. People were generally friendly and happy to cooperate when approached. Many said how much they liked the planting and what an unexpected surprise it was, and were interested in the background to the project. The weather was generally good on the days of the questionnaire. The surveys were conducted both at the weekend and midweek. In London, many people came from the hospital nearby, both staff and patients at lunchtime and throughout the day.

The headline findings of this chapter can be described as follows;

1. **Colour has an influence over preference. But the relationship is not linear.**
2. **Age, occupation, gender, other open spaces visited and familiarity all have an influence on preference.**
3. **Respondents expressed almost unanimously positive feedback about the sown vegetation. Both for annual flowers and for th long grass**
4. **Gappiness and weeds are poorly tolerated.**
5. **Visitors are regular. In Meersbrook park many come every day. They know, love and are interested in their local park. Many come to socialise in summer but in the main respondents came all year round.**
6. **Respondents liked to engage on a creative level with the management of their park, this was reflected in the comments**

As was described in the methodology the questionnaire survey comprised several types of question that can loosely be divided into three groups.

1. Demographics
2. User profile
3. Attitude to planting

For the first two elements, demographics and user profile, the results for the two different research sites will be presented together and differences between them will be discussed.

Results relating to the actual plantings (number 3 above) will be presented separately. The planted plots were so very different at the times the questionnaires were conducted that directly comparing primary results would most likely not be a fruitful discussion. The Ruskin Park meadow in London was full of annual flowers, particularly in beds 1, 2 and 3, in which cornflowers were at the end of their flowering and corn marigolds were in full flower. The Meersbrook Park meadow in Sheffield was grassy, with tall plants conspicuously absent and a few native perennial flowers dotted through the planting. All of the plots can be seen in detail in appendices 8 and 9.

5.2 Combined Questionnaire results: Sheffield (Meersbrook Park) in relation to London (Ruskin Park).

5.2.1 Demography

In both Sheffield and London more women than men answered the questionnaire (64 and 58 % respectively). In terms of age the distribution of the age range of the respondents was fairly similar with the 31-45 age group forming a larger proportion of the respondents in London than in Sheffield (43% and 27% respectively). The 18-30 age range was more greatly represented in Sheffield than in London. Age frequency decreased towards the upper and lower end of the spectrum in both parks.

Respondents, were, in the main, well educated, with more than half of the Sheffield respondents educated to degree level or higher (although, however, more than one quarter of the Sheffield respondents had left school at 16). 72% of respondents in Camberwell were educated to degree level or higher (with 34% educated to post- graduate level). These results were partially reflected in the occupation profile of the two groups of respondents with Skilled and Professional levels being fairly similar but the Unskilled group being slightly more highly represented in Sheffield than in London. It is worth mentioning that the 'not in employment' included retired people and full-time parents as well as unemployed people.

Table 3:age of respondents (%)

Age	No of respondents (%)	
	Sheffield	Ruskin
UNDER 18	5	3.5
18-30	24	18.5
31 - 45	27	43
46 - 55	23	15
56-65	10	10
OVER 65	11	10

Table 4:Education level of respondents (%)

Education	No of respondents (%)	
	Sheffield	Ruskin
School up to age 16	26	7
School up to age 18	7	9
Qualifications or training eg armed forces/nursing	13	12
Undergraduate degree	29	38
Postgraduate degree	25	34

Table 5 : Occupation of respondents (%)

Occupation	No of respondents (%)	
	Sheffield	Ruskin
Unskilled	23	9
Semi skilled	32	38
Skilled/professional	17	24
Not in employment	28	29

Table 6: Questionnaire results (% of respondents) for gender

Gender	No of respondents

	Sheffield	London
Men	42	36
Women	58	64

5.2.2 Park visit behaviour patterns: Sheffield and London.

There was quite a difference between the behaviour patterns of the two groups of respondents in the two parks. While most of them came regularly to the park and all year round, almost 40 % of the respondents in Sheffield came daily (compared to 13% in London). Of the London respondents 45% came less than once a week while this figure was 25% in Sheffield.

Of the Sheffield respondents the largest proportion were there to walk the dog (almost half the respondents; this figure was only 5% for the London respondents). More than half of the London respondents said that they were there for pleasure. The second largest user group in London was the group there to look after children (while in Sheffield the second largest group was there for pleasure.)

5.2.2.1 Visit frequency/seasonality

In response to the following question;
A1) How often do you visit this park?
☐Daily or more
☐4-6 times per week
☐1-3 times per week
☐A few times a month
☐Once a month or less
☐Never

Table 7: Visit frequency (%)

Visit frequency	No of respondents (%)	
	Sheffield	Ruskin
Never	3	8
Once a month or less	12	20
A few times a month	14	17
1-3 times per week	18	24
4 - 6 times per week	15	17
Daily	38	14

Table 8: % responses to the question "When do you visit the park"

When do you visit the park?	No of respondents (%)	
	Sheffield	Ruskin
All year round	94	82
In summer only	6	18

5.2.2.2 Other open spaces visited

Respondents were asked about other types of open space they liked to visit;
A3) Which other open spaces do you visit most regularly?
☐ *Other urban parks*
☐ *Countryside around the city/National parks*
☐ *Seaside*
☐ *Cemeteries*
☐ *Allotment*

These were grouped into three groups; Human designed/heavily manipulated (this comprised other urban parks, cemetaries and allotments), less heavily manipulated/natural (comprising seaside and countryside around the city), and both.

Table 9 : "Which other spaces do you visit most regularly" (%)

Other open spaces regularly visited	No of respondents (%)	
	Sheffield	Ruskin
Human designed/heavily manipulated	30	46
Less heavily manipulated/natural	20	17
Both	50	37

When asked about which other open spaces they mostly frequented almost half of the respondents in London cited human designed and heavily manipulated open spaces, with a good proportion of the rest citing **both** natural and heavily manipulated spaces. In Sheffield half of the respondents said that in terms of other open spaces, they tended to visit both natural and built up spaces. These results reflect the proximity and ease of access of Sheffield to more natural environments, but also show that even in the heart of a very large capital city, in this particular park more than half of the users do have access to natural environments. There may be socioeconomic reasons for this, but that was outside the realm of this study.

5.2.2.3 Reason for visiting park

A4) Why do you come to the park. *Please write down the four main reasons you come to the park placing a number in the box where 1 = most important reason and 4 = least important reason*

☐ *To sit/lie down, sunbathe*
☐ *To walk the dog*
☐ *To walk for pleasure*
☐ *To walk for transport*
☐ *To cycle*
☐ *To skateboard*
☐ *To jog/run*
☐ *For other sports*
☐ *To supervise/play with children*
☐ *To observe wildlife/greenery*
☐ *To meet/socialise with people*
☐ *To picnic*
☐ *Other organised activities*

Table 10: What is your main reason for visiting the park

Main reason for visiting park	No of respondents (%)	
	Sheffield	Ruskin
For pleasure	33	53
To walk dog	48	5
For transport	7	3
For sport	0	3
To socialise	4	7
For nature	3	6
To supervise children	5	23

The list of reasons people came to the park was reduced from 13 to 7 for purposes of analysis. As to why the respondents were in the park; the main motive seemed to be for pleasure. It is worth taking into account that the questionnaires were undertaken over a period of a week and not just at the weekend. The second most common reason for visiting Ruskin park was to supervise children. In Meersbrook Park, Sheffield, the main motive was to walk the dog, with the 'for pleasure' group taking second place. Taking care of children was cited as the main reason for being in the park by 23% of the Ruskin Park respondents, while only 5% of the Sheffield respondents cited this as being their main reason for being in the park.

5.2.3 Attitudes

The feeling towards the meadows amongst all the respondents was positive. This positivity was more unanimous in London than in Sheffield. There was slightly more ambivalence and negativity present in the Sheffield attitudes to the meadows in general.

5.2.3.1 General attitudes

Overall Impression

Table 11: What is your overall impression of the meadow in the park

Overall impression	No of respondents (%)	
	Sheffield	Ruskin
A little negative	3	1
Don't know	4	0.5
A little positive	25	11
Positive	68	87

Outline Shape

Table 12: "How do you feel about the outline shape of the meadow" (%)

How do you feel about the outline shape of the meadow?	No of respondents (%)	
	Sheffield	Ruskin
Negative	6	2
Don't know	24	4
Positive	70	94

5.3 Questionnaire Results - Ruskin Park, London

5.3.1 Attitudes to the plots themselves - Ruskin Park

5.3.1.1 Preferred plot

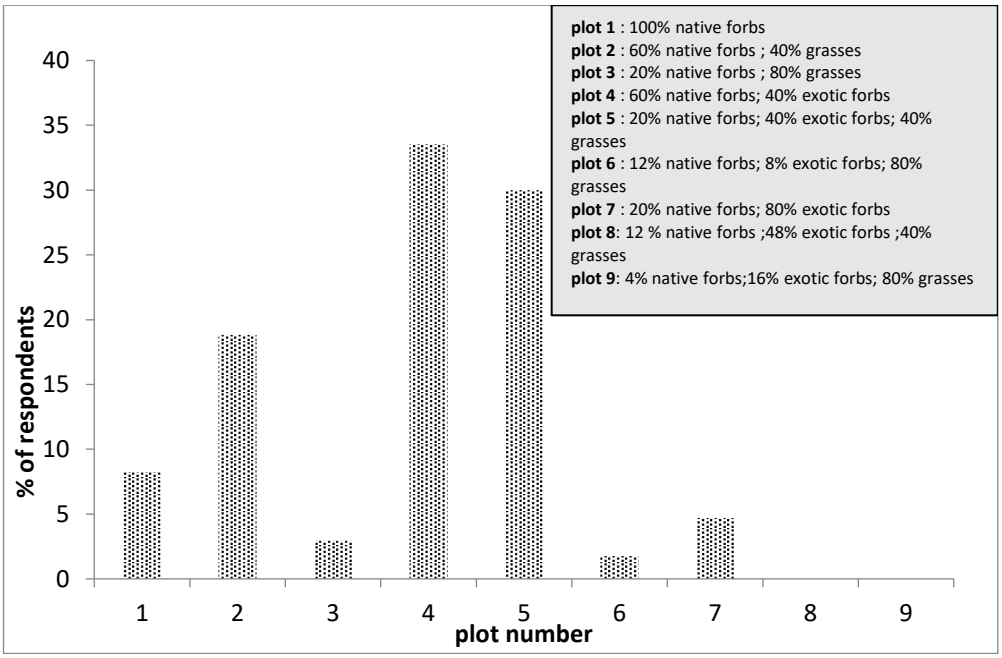


Figure 91: Questionnaire results (% of respondents) for preferred plot

63 % of the respondents said they preferred plots 4 and 5 (33% preferring plot 4 and 30% preferring plot 5) with a further 18% preferring plot 2 (Figure 91 above). 'Native forbs' were present in all of these plots. The preferred two plots also had a 40% 'exotic forb' content. At the time of the survey the 'native forbs' were in full flower and comprised yellow (*Chrysanthemum segetum*), white (*Anthemis arvensis*) and blue (*Centaurea).* The exotic forbs that were in flower at the time of survey were the bright orange *Escholzia californica*, the deep red *Linum grandiflorum* and the yellow/orange of the *Coreopsis tinctoria.* Clumps of the bright green Cosmos yet to flower also contributed to the colour palette of the exotic plots. (see appendix X). These results suggest that flower colour is the biggest influence on preference with range of colour taking preference over number of flowers per unit area. Plots 1, 2 and 3 had a much larger surface area of flower than the other plots with a high density of Corn marigold (*Chrysanthemum segetum*). The *native* forbs that were in flower comprised the yellow of the corn marigold (*Chrysanthemum segetum)* and the blue of the cornflower (*Centaurea cyanus*). Plots 1, 2 and 3 were in full flower but had no

exotic forb content. Plots 4 and 5 had plenty of natives as well as a few exotic forbs in flower. These were the preferred plots. Plot number 7 was also the preferred plot for 5% of the respondents. This plot, although gappy, had an even matrix of Cosmos yet to flower (see appendix). Plots 6, 7, 8 and 9 were the least preferred plots and will be discussed in the next section.

Figure 92: Plot number 2. No exotics (for a better picture see appendix)

Figure 93: Plot number 4. 40 % exotics. (for a better picture, see appendix X)

Figure 94: Plot number 5 40% exotics. For a better picture see appendix x

5.3.1.2 Least preferred plot

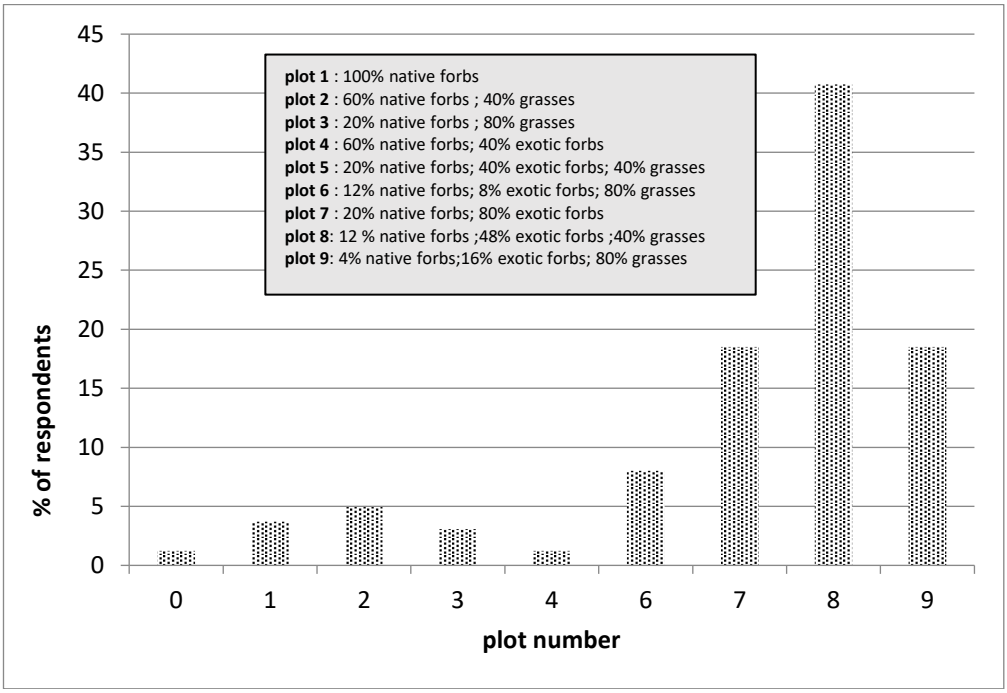


Figure 95: Questionnaire results (% of respondents) for least preferred plot?

The least preferred plots were plots 8 and 9 (Figure 95 above). These were the plots with the lowest number of native forbs. Plot 8 had been sown with 12% Native forbs, 48% Exotic forbs and 40 % grasses, plot 9 just 4% Native forbs, 16% exotic forbs and 80 % grasses. On the day of undertaking the questionnaires these two plots were characterised by a paucity of ground cover with many gaps

and lack of flower quantity and variety (see Figure 96 and Figure 97 below and appendices XX for more detailed pictures). The gaps were a result of poor establishment of grass (seed had possibly been eaten by pigeons), and the exotic flowers were yet to flower. Interestingly, later in the summer (ie September/October) it was these plots that looked the most colourful with masses of metre high Cosmos "Sensation" in full flower.

Figure 96: Plot number 8, the least popular plot this had been a 48% exotic plant plot. However weeds had been a problem so were removed leaving big gaps.

Figure 97: Plot number 9 This was the second most unpopular plot.

In the photographs taken on the day, in plot number 8 (Figure 96) Cosmos can be seen at its preflowering stage, a few coreopsis flowers and many gaps. Plot number 9 (Figure 97), the second least preferred plot, is characterised by gappiness.

5.3.1.3 Summary of Results for preference - Ruskin Park.

These results for the Ruskin Park site, in terms of preference, seem to support some of the studies mentioned in the Literature review. These early findings for Ruskin Park point to colour influencing preference up to a certain point, but less beyond a certain amount of colour. As was identified by Hands and Brown, people want a certain amount of colour but not too much, especially in mature vegetation. The fact that plots 4 (Figure 93, page 169) and 5 (Figure 94, same page) in Ruskin Park – which had less colour than the previous three plots - were the preferred plots supports the hypothesis of Hands and Brown (who was citing the Kaplans) that people prefer "mid-range" complexity. When it gets too "busy" (here a term used in reference to colour), ie too much colour, preference will go down.

The results in Ruskin park for the least preferred plot also support findings of Hands and Brown who, through content analysis, established that sparseness during the establishment phase was one of the most powerful predictors of negative preference. It was in this context that this study recommended rapidly establishing plants for rehabilitation sites. The least preferred sites in Ruskin Park were the ones with the largest amounts of exposed soil. Of the two plots with similarly exposed amounts of soil, it was the least floriferous one (plot 8) that was the least popular amongst respondents.

This will be further discussed in the discussion chapter.

5.3.2 Agreement with statements about preferred/least preferred plots, Ruskin Park

The respondents were next asked to stand in front of their preferred or least preferred plot and state how much they agreed or disagreed with certain statements about aspects of the plot in front of them. The aspects they were asked about included colour, combination of colours, balance of colours, freshness, tidiness etc. From these answers it was hoped that reasons for preference might be inferred. The stronger the agreement the more influential on preference each factor would be.

5.3.2.1.Preferred plot. Ruskin Park (annuals)

The graphs below (Figure 98 - Figure 104) summarise the results of the respondents' attitudes to their preferred plots. Two patterns emerged in the responses, the first in relation to strength of opinion and the second in relation to unanimity of opinion. While all of the responses were mostly in agreement with the statements, the strength of agreement was greatest for the statement "I like the colour/combination of colours" (Figure 98) and "I like the butterflies and other insects I can see in the meadow" (Figure 102). Unanimity of agreement was most pronounced in relation to the statement "I like the colours/combination of colours, I like the balance between the colours" and I like the butterflies and other insects I saw in the meadow" where almost nobody disagreed with these

statements. There was an element of disagreement with regard to “freshness” (Figure 103), fullness (Figure 104) and tidiness (Figure 101).

5.3.2.1.i.Colour/combination of colours. Ruskin park annuals.

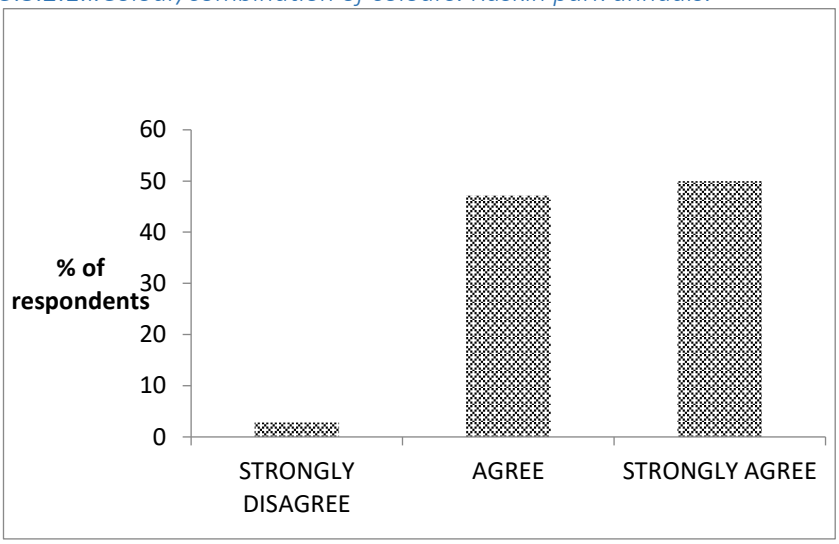


Figure 98: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the colours/combination of colours' in relation to your preferred plot?"

5.3.2.1.ii Balance between the colours. Ruskin park annuals.

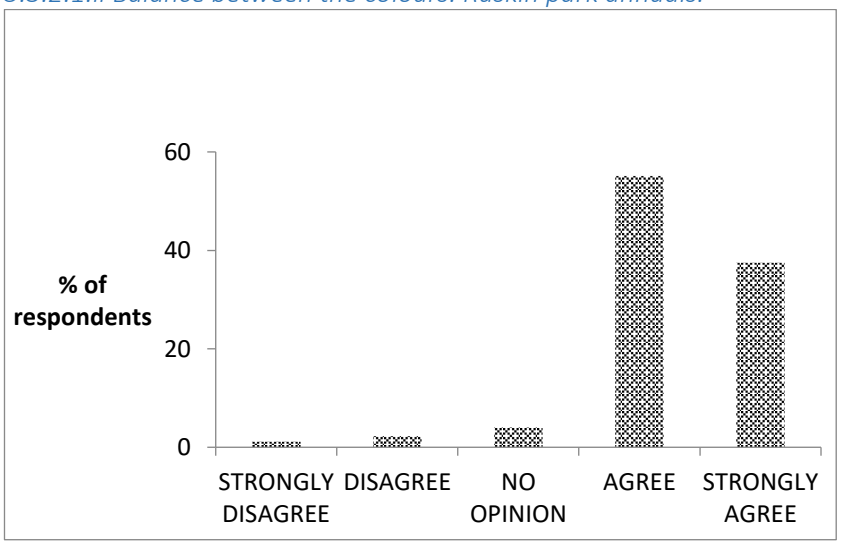


Figure 99: Questionnaire results (% of respondents) for “Do you agree with the statement 'I like the balance between the colours' for your preferred plot?”

5.3.2.1.iii Overall amount of colour. Ruskin park annuals.

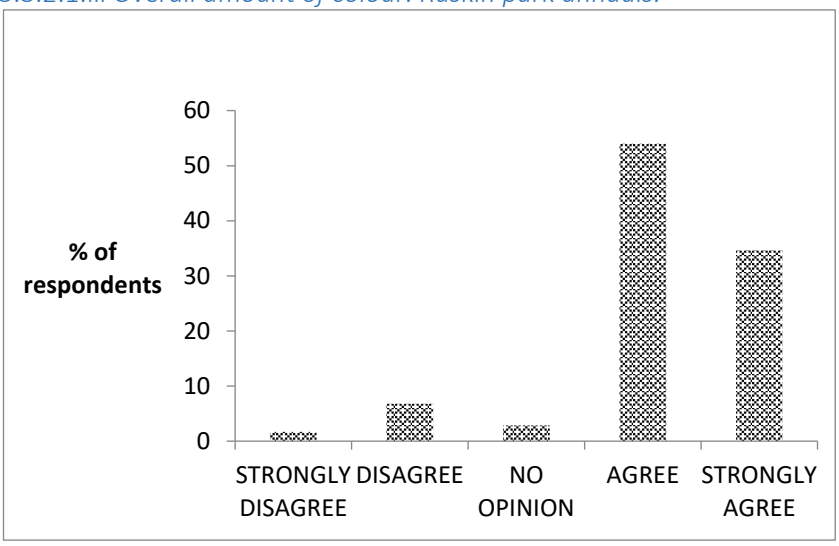


Figure 100: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the overall amount of colour' for your preferred plot?"

5.3.2.1.iv. Neatness. Ruskin park annuals.

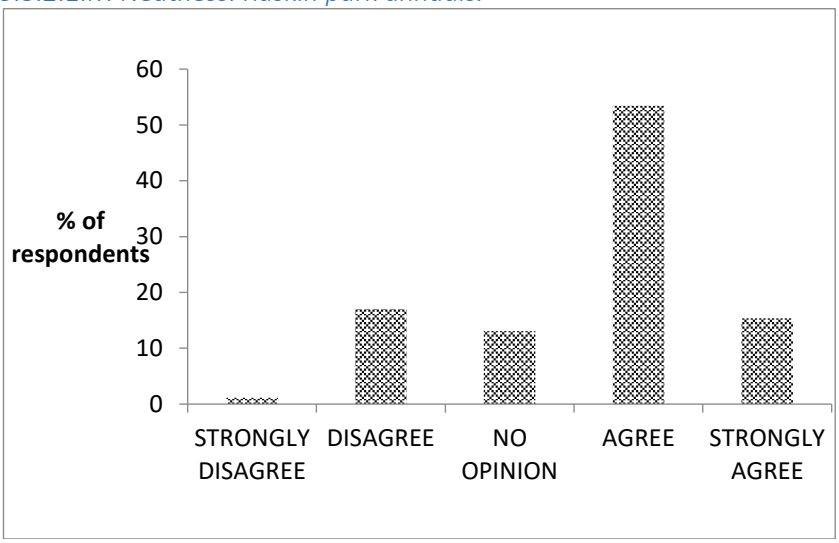


Figure 101: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks neat and well tended' for your preferred plot?"

5.3.2.1.iv Invertebrates. Ruskin park annuals.

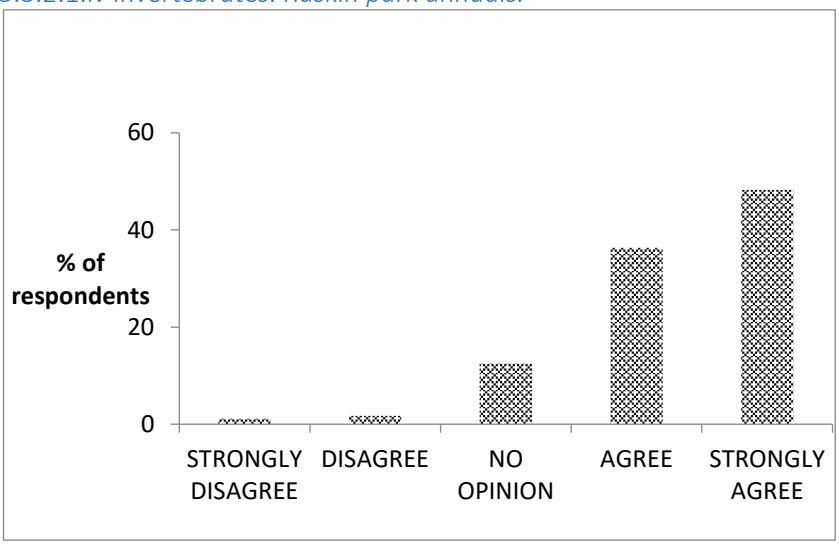


Figure 102: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the butterflies and other insects I saw in the meadow'?"

5.3.2.1.v Freshness. Ruskin park annuals.

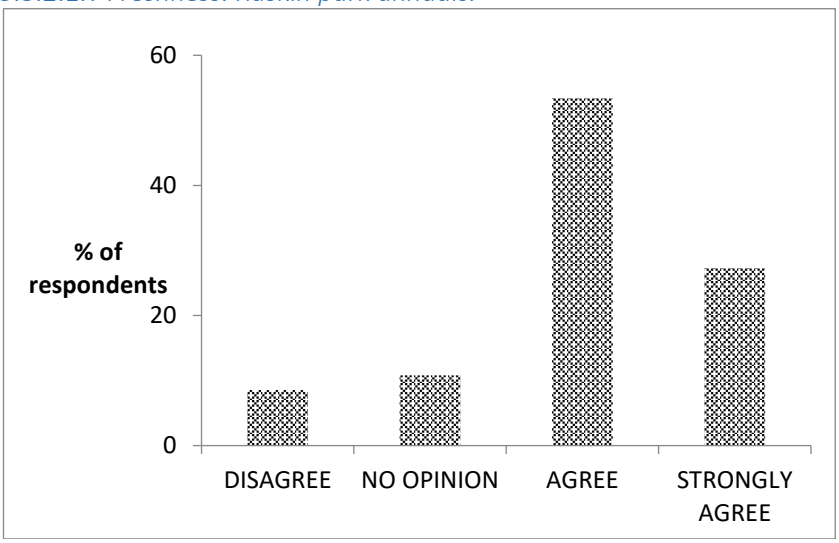


Figure 103: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks fresh' for your preferred plot?"

5.3.2.1.vi Fullness. Ruskin park annuals.

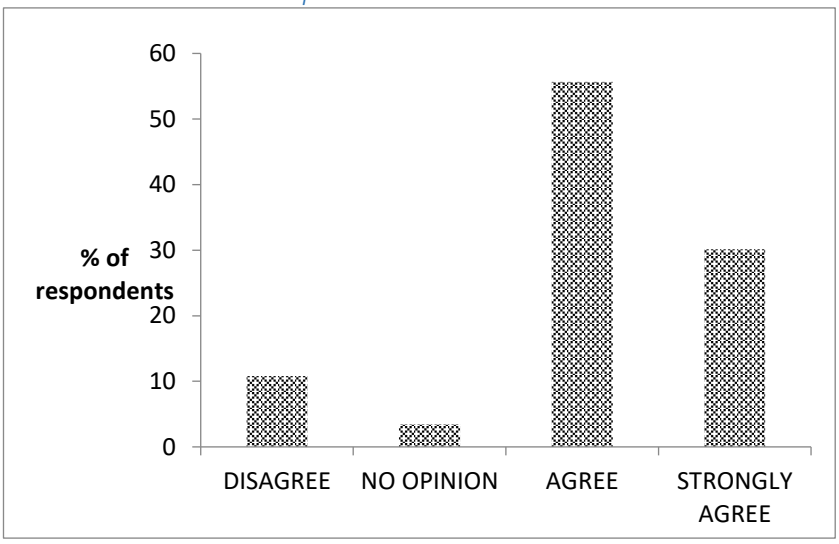


Figure 104: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks full' for your preferred plot?"

5.3.2.2. Least preferred plot. Ruskin Park (annuals)

The same variables were explored in relation to the respondents' least favourite plots. Some additional variables that might have an unfavourable influence on attitude, such as "deadness", presence of gaps and bare patches and "overgrownness", were also explored in relation to the least favourite. Opinions tending to be less unanimous for these statements than for the statements concerning their favourite plots, with responses to the statements about their least favourite plots actually characterised by ambivalence. For example, where the statement *"I like the flower colours and combination of colours"* had been unanimously agreed with for their preferred plots, when it came to the least preferred plots the responses were split, with disagreement (34%) and agreement (40%) represented in almost equal measure (Figure 105). There was less agreement in relation to the overall amount of colour (Figure 107), with 57 % disagreeing and strongly disagreeing with the idea that there was enough colour (while 21 % agreed). Ambivalence again surfaced in the responses to the statement "*I like the insects and other insects I saw in the meadow*" with 19% disagreeing with the statement, 30% agreeing and 30% having no opinion (Figure 108). Similarly, there was ambivalence for the statements "*The meadow looks fresh*" (38% disagreeing and 24% agreeing, Figure 109); "*The meadow looks overgrown*" (45% disagreeing and 18 % agreeing, Figure 110); "*The dead plants spoil the flowers*" (28% agreed and 34 % disagreed, Figure 111) and "*The meadow*

looks dead" (44% agreed and 20% disagreed, Figure 112). However, in relation to gappiness there was once again unanimity of opinion with 72 % agreeing and, more importantly, strongly agreeing that their least favourite plot had a lot of bare patches (Figure 113).

In summary then, the major influencing factor in negative opinion about the planting was not colour, amount of colour, freshness or senescence but gappiness. Bare earth was the one thing that incited the strongest and most unanimous views amongst respondents. This was reflected in the choices of least preferred plot.

5.3.2.2.i. Flower colour. Ruskin Park annuals.

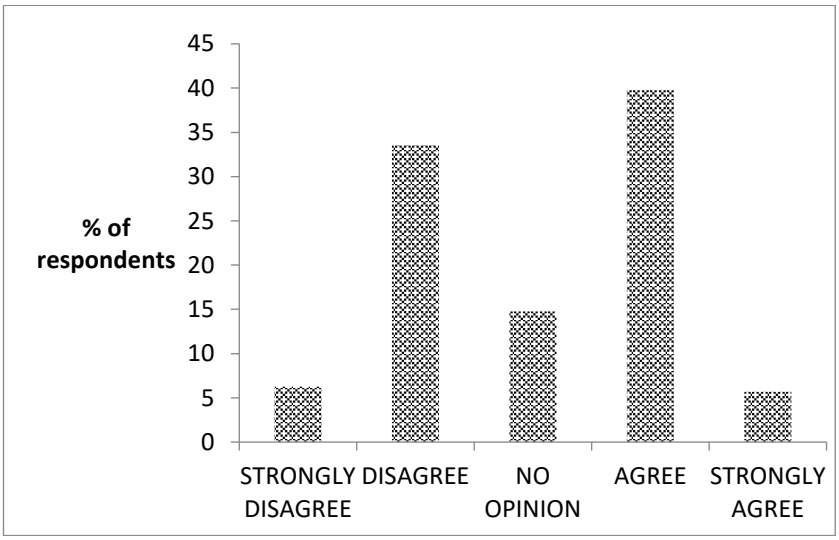


Figure 105: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the flower colours/combination of colours' for your least favourite plot?"

5.3.2.2.ii Balance between the colours. Ruskin Park annuals

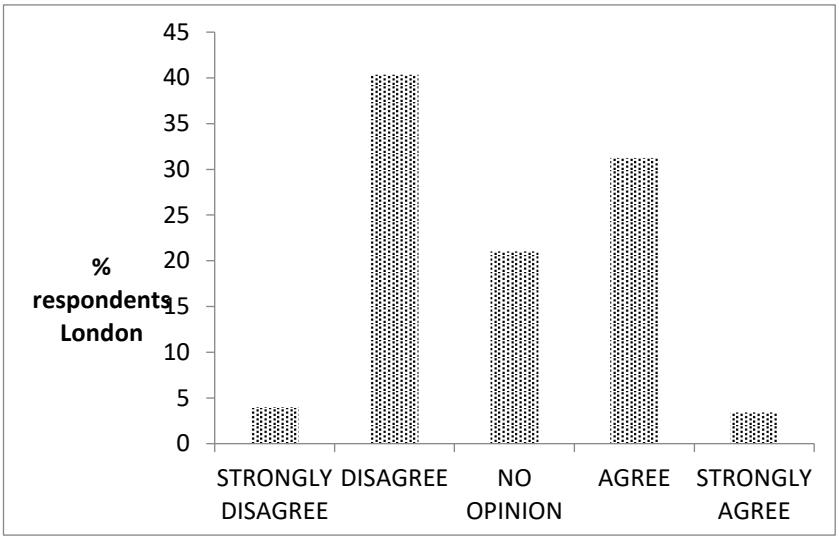


Figure 106: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the balance between the flowers' for your least favourite plot?"

5.3.2.2.iii Amount of colour. Ruskin Park annuals.

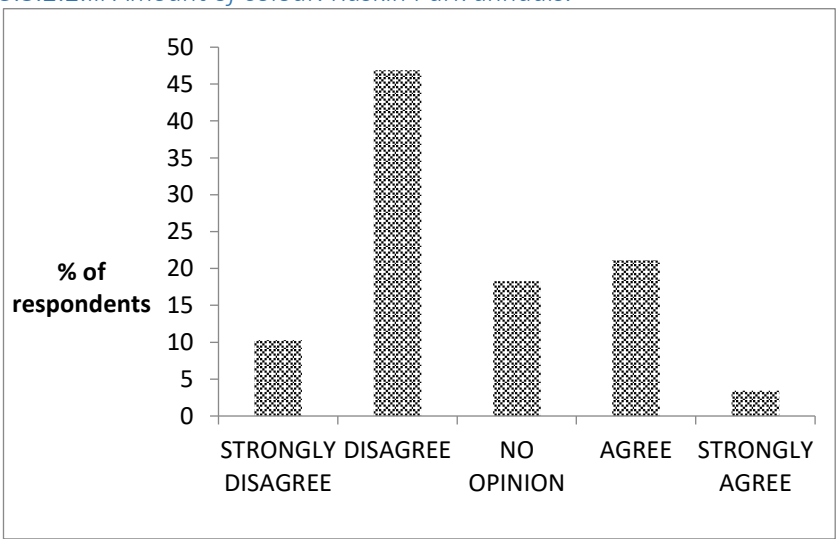


Figure 107: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the overall amount of colour' for your least favourite plot?"

5.3.2.2.iv Invertebrates. Ruskin Park annuals.

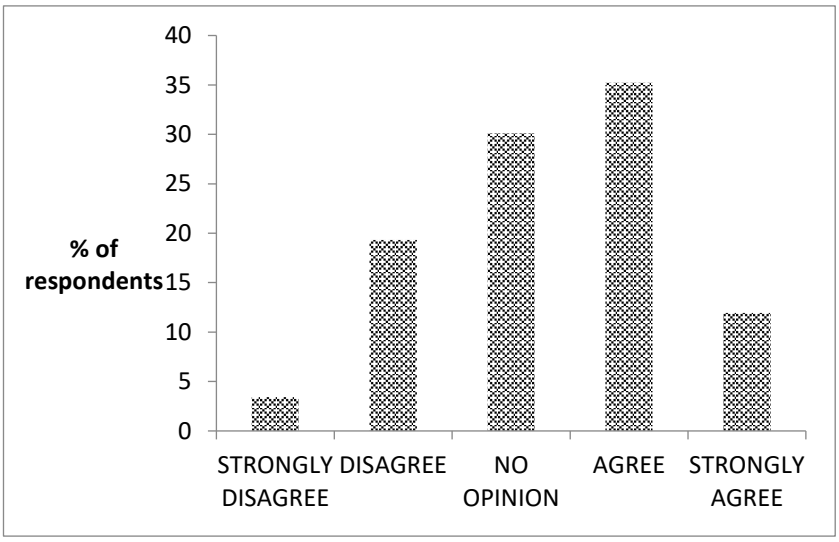


Figure 108: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the butterflies and other insects I saw in the meadow' for your least favourite plot?"

5.3.2.2.v. Freshness. Ruskin Park annuals.

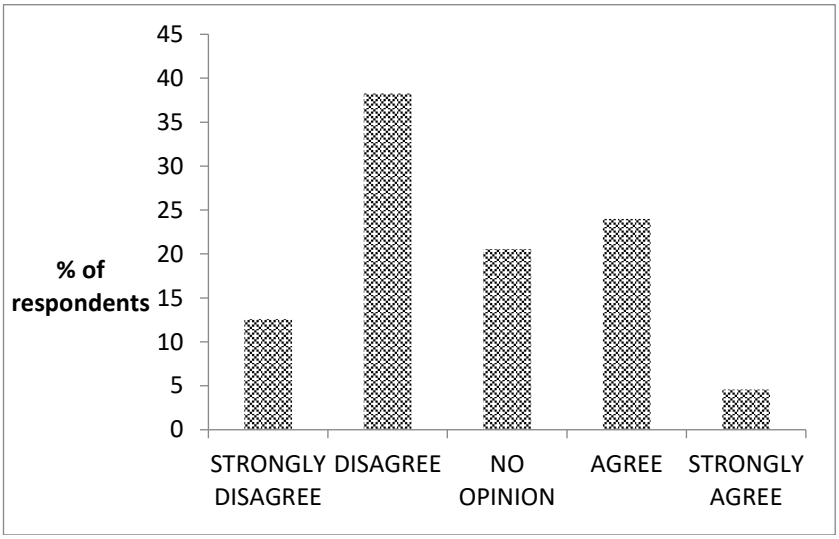


Figure 109: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks fresh' for your least favourite plot?"

5.3.2.2.vi Overgrownness. Ruskin Park annuals.

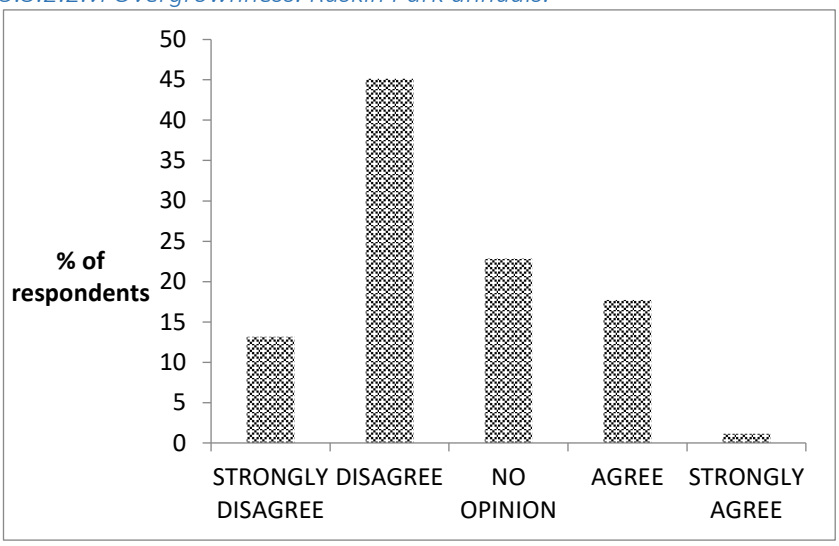


Figure 110: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks overgrown' for your least favourite plot?"

5.3.2.2.vii Senescence. Ruskin Park annuals.

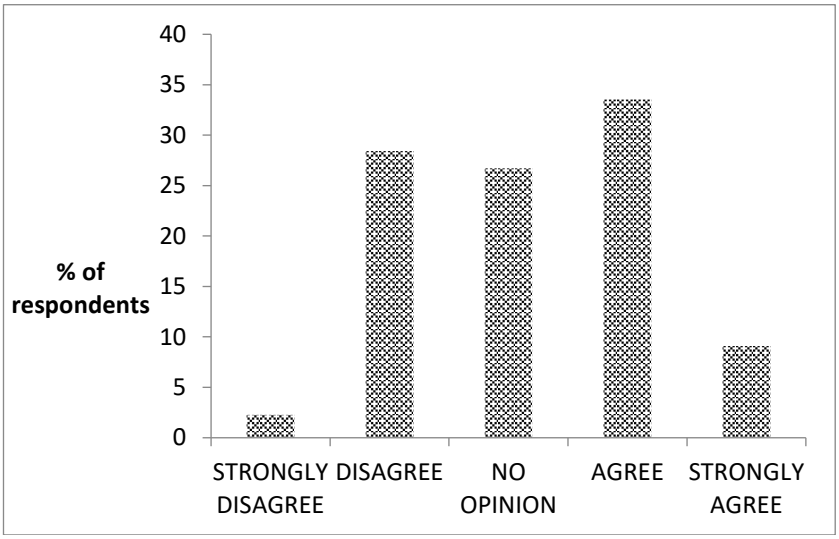


Figure 111: Questionnaire results (% of respondents) for "Do you agree with the statement 'The dead plants spoil the flowers' for your least favourite plot?"

5.3.2.2.viii Deadness. Ruskin Park annuals.

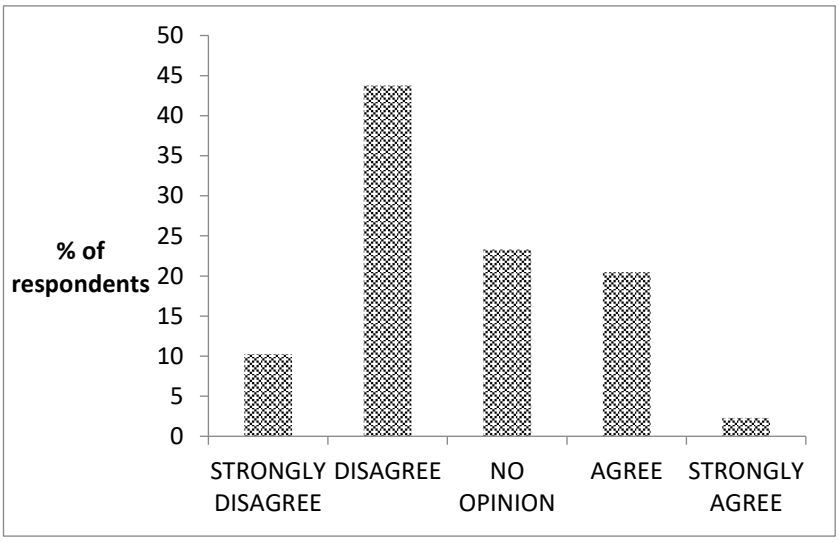


Figure 112: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks dead' in reference to your least favourite plot?"

5.3.2.2.ix Gappiness. Ruskin Park annuals.

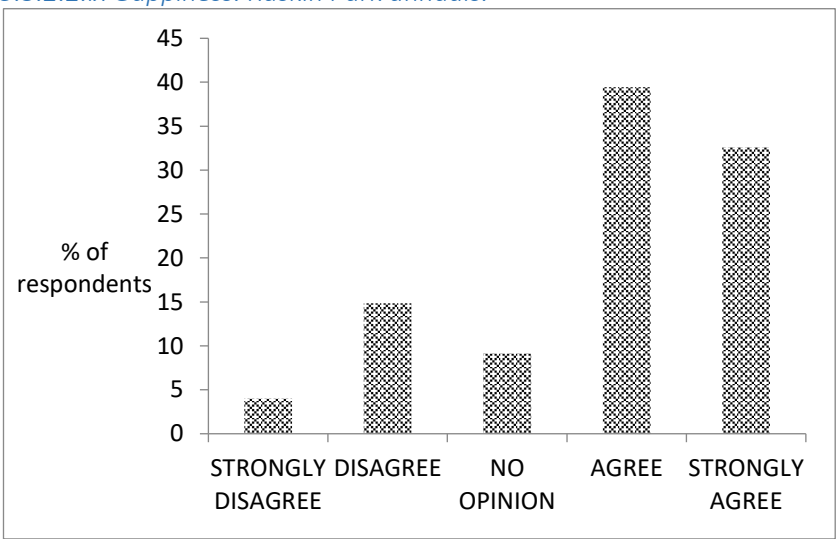


Figure 113: Questionnaire results (% of respondents) for "Do you agree with the statement 'There are lots of bare patches in the meadow' in reference to your least favourite plot?"

5.3.3. General attitude to the planting – Ruskin Park (annuals)

5.3.3.1 Appropriateness. Ruskin Park annuals

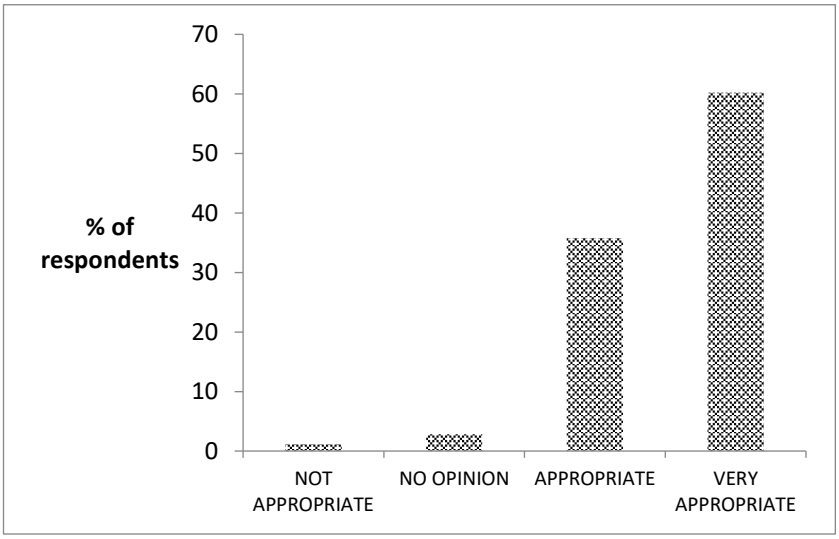


Figure 114: Questionnaire results (% of respondents) for "Do you think meadow type planting is appropriate in the park?"

Respondents unanimously responded positively to the meadow planting in general with almost all (96%) believing the planting to be appropriate or very appropriate in the park (Figure 114).

5.3.3.2 Preference to other planting in the park. Ruskin park annuals.

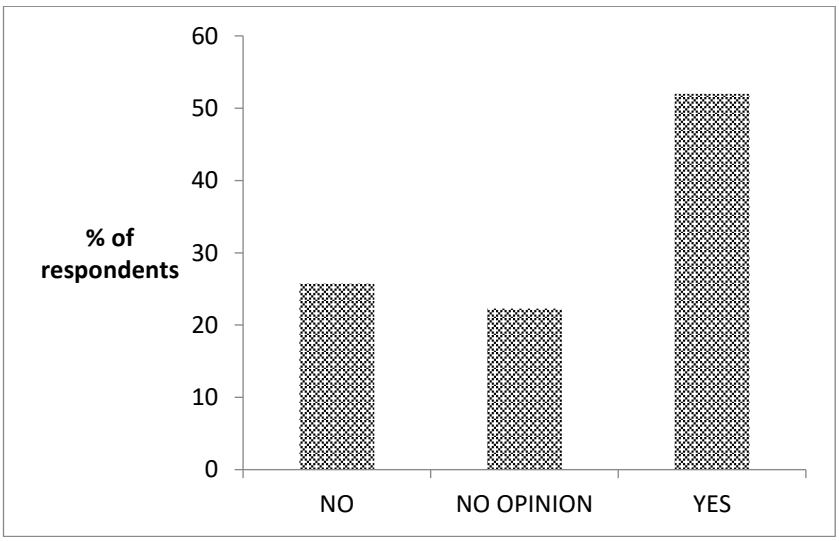
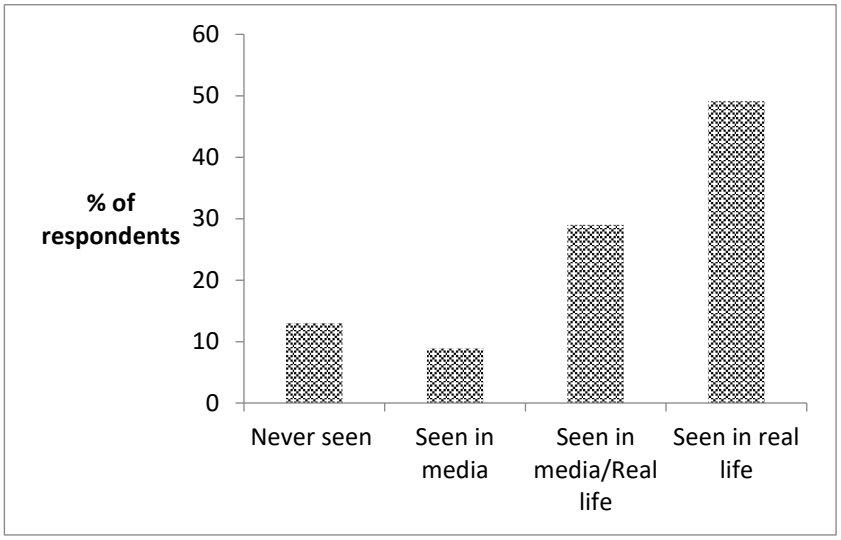


Figure 115: Questionnaire results (% of respondents) for "Do you prefer this type of vegetation to other types of vegetation in the park?"

When asked whether they preferred this type of meadow vegetation to other types of vegetation in the park the majority of respondents said they did (52%) (Figure 115).

5.3.4. Cultural factors.

5.3.4.1 Familiarity



5

Figure 116: Questionnaire results (% of respondents) for "What is your familiarity with meadow-type planting?"

Respondents were asked about their familiarity with meadow type planting. 49 % reported that they had seen it in real life while 13 % had no familiarity with it at all (Figure 116). It was thought that familiarity may have some bearing on attitude towards the planting. This would be explored later the analysis of the results.

5.3.4.2 Membership of wildlife organisation or other. Ruskin Park.

Respondents were asked whether they were a member of a nature conservation group or horticultural society, or friends group. Most were not members of either. There were more members of the Friends of Ruskin Park (11%) than there were of a nature conservation group. (Table 13).

Table 13: Questionnaire results (% of respondents) for "Are you a member of a nature conservation, horticulture or friends group?"

Group	N° of respondents	
	%	count
Nature/wildlife conservation charity or organisation/Horticultural society	7	12
Friends group	11	19
Both conservation org and horticultural society	2	5
None	80	140

5.4.Associations between the questions – Ruskin Park

5.4.1. The tests used

Statistical tests were used to explore some of the hypotheses identified in the introduction, notably regarding age, gender, occupation and familiarity. (The latter was explored through two variables, firstly the answer to the question "which other open spaces do you visit regularly" and secondly "how familiar are you with this type of planting").

Once the data had been coded and organised, some of it was deemed suitable for statistical exploration. The data was coded using numbers, for example Men became a 1 and Women a 2, constituting two groups of respondents whose responses to a given question could be compared. Respondents were also grouped was by age, with six groups whose response to a given question could be compared. There were other groups such as occupation, reason for being in park and so on as has been shown in the results so far.

Responses were compared by *one-way analysis on ranks test*, also known as a Kruskall Wallis test. This *a priori* test is an alternative to a simple one way ANOVA (analysis of variance) test; it is a non-parametric test (described in the methodology) and a significant result proves that one group of dependent variables is *stochastically dominant* over another ie differs unpredictably. This test does not say which group dominates, nor does it say how many groups stochastically dominate each other. To find this out once a significant result has been proved, a post hoc or *a posteriori test* is undertaken. These tests compare groups in twos, so-called pairwise comparisons, to identify which differ significantly from each other in terms of mean responses to a given question. In this case the Tukey Honest Significant Difference (HSD) test was used, which makes pairwise comparisons of different mean scores of different groups to a given question to see which ones differ significantly.

Advice was sought for this part of the research from the statistical helpdesk at Sheffield university who, over the course of several visits, provided advice and support with the software and theory. The next sections of this chapter deal with

applying some of these rather abstract-sounding statistical methods to the real examples from the Ruskin Park results in order to analyse the Ruskin Park data.

5.4.2 Statistical Associations found – a priori test

Significant results of the explorations of associations of the demographic variables with user patterns are shown in Table 14; with general attitude to the planting in Table 13, with specifica attitude to preferred plot in Table 16 and with specific attitude to least preferred plot in Table 15. Nonsignificant interactions are shown on the tables as ns. Significant interactions (p= 0.05 – 0.01) as *. Very significant interactions (p=0.01 – 0.001) as **. Extremely significant interactions (p=≤0.001) as ***.

5.4.2.1 Statistical associations regarding user patterns of the respondents.

Table 14: Associations regarding user patterns. Results of a Kruskall Wallis one way analysis of variance test. The columns are the variables being tested (user patterns) and the rows the dependent variables.

Factors (independent variables that may influence : → User patterns : Dependent variable↓	Reason for visiting the park	Visit frequency (How often do you visit the park?)	When do you visit the park?	Occupation	Gender	Familiarity	Which other open spaces do you visit most regularly?	Age
How often do you visit the park?	*	n/a	***	*	ns	ns	ns	ns
When do you visit the park?	**	***	n/a	ns	ns	ns	*	ns
What is your main reason for visiting the park?	n/a	**	***	ns	ns	ns	*	ns

Significant interactions (p=0.05-0.01): *. Very significant interactions (p=0.01-0.001): **. Extremely significant interactions (p=≤0.001): ***

In the first set of results relating to respondents' user patterns, respondents had been asked how often they came to the park, when they visited the park and what their main reason for visiting the park was. These behaviour questions are given as the dependent variables in the results table (Table 14), forming a row each. As can be seen in the results table (Table 14), there were five significant results. Significant associations were found between:

1. how often people came to the park (visit frequency) and their reason for being there (p=0.012). This result could be translated as frequency of visits being dependent on the reason for being in the park. Although this is not a surprising finding it does illustrate the effectiveness of using the Kruskall Wallis test on the data that was collected and organised as part of the study. Posthoc analysis may reveal the nature of this significance.
2. when in the year respondents visited the park and reason for visiting (p=0.001). Again, this result is not surprising but shows the effectiveness of the test.
3. respondents' occupation and visit frequency (p=0.049).
4. which other open spaces people visit and when in the year they visit the park (0.021).
5. other open spaces visited and their main reason for visiting the park (p=0.038)

These significant interactions will be explored later in this chapter by way of post hoc tests.

5.4.2.2 Statistical associations regarding general attitude towards the planting.

Table 15: Associations regarding attitudes towards the planting. Results of a Kruskall Wallis one way analysis of variance test. The independent variables are the columns. This table shows that

there were significant differences between the occupation groups with regard the overall impression of the park, and between the different genders as to the overall shape of the meadow.

Factors (independent variables that may influence : → / Attitude statements : Dependent variable↓	Reason for visiting the park	Visit frequency (How often do you visit the park?)	Occupation	Gender	Familiarity	Which other open spaces do you visit most regularly?	Age
What is your overall impression of the meadow in the park?	ns	ns	*	ns	ns	ns	ns
How do you feel about the outline shape of the meadow?	ns	ns	ns	*	ns	ns	ns
Which area of the meadow do you fund most appealing?	ns	ns	ns	ns	ns	ns	ns
Which area of the meadow do you find least appealing?	ns	ns	ns	ns	ns	ns	ns

Significant interactions (p=0.05-0.01): *. Very significant interactions (p=0.01-0.001): **. Extremely significant interactions (p=≤0.001): ***

Table 15 shows the second set of results of the Kruskall Wallis test and relates to the overall impression of the meadow planting in the park and preferred plot. There were two significant associations reported by the test, between:

1. peoples' occupation and their overall impression of the park (p=0.029)
2. gender of the respondents and how they felt about the outline shape of the meadow.

5.4.2.3 Statistical associations regarding respondents' attitude towards their preferred plot

Table 16: Results of the Kruskall Wallis analysis of variance test exploring associations between attitudinal statements about the respondents' preferred plots (dependent variables) and other variables such as Reason for visiting the park, frequency, occupation etc (independent variables).

Factors (independent variables that may influence : → Attitude statements : Dependent variable↓	Reason for visiting the park	Visit frequency (How often do you visit the park?)	Occupation	Gender	Familiarity	Which other open spaces do you visit most regularly?	Age
[Most] I like the flower colours/combination of colours	ns	ns	ns	ns	ns	*	ns
[Most] I like the balance between the colourful flowers	ns	ns	ns	ns	ns	*	ns
[Most] I like the overall amount of colour	ns	ns	ns	ns	ns	ns	ns
[Most] The meadow looks neat and well-tended	ns	ns	ns	ns	ns	ns	ns
[Most] I like the butterflies and other insects I saw in the meadow	ns	ns	ns	ns	ns	ns	ns
[Most] The meadow looks fresh	ns	ns	ns	ns	ns	ns	ns
[Most] The meadow looks full	ns	ns	ns	ns	ns	ns	ns

Significant interactions (p=0.05-0.01): *. Very significant interactions (p=0.01-0.001): **. Extremely significant interactions (p=≤0.001): ***

Table 16 shows the third set of results yielded by the Kruskall Wallis test. Again only two significant interactions were identified between:

1. other open spaces regularly visited and the statement "I like the flower colours/combination of colour" (p= 0.027).
2. other open spaces visited and the statement 'I like the balance between the colourful flowers'.

5.4.2.4 Statistical associations regarding respondents' attitude towards their least preferred plot

Table 17: Results of the Kruskall Wallis analysis of variance test exploring associations between attitudinal statement about their least preferred plots (these form the independent variable columns) and other variables such as reason for visiting the park, visit frequency, occupation etc.

Factors (independent variables that may influence : → Attitude statements : Dependent variable↓	Reason for visiting the park	Visit frequency (How often do you visit the park?)	Occupation	Gender	Familiarity	Which other open spaces do you visit most regularly?	Age
[Least] I like the flower colours/combination of colours	ns	ns	ns	ns	ns	ns	ns
[Least] I like the balance between the colourful flowers	ns	ns	ns	ns	ns	ns	ns
[Least]I like the overall amount of colour	ns	ns	ns	ns	ns	ns	ns
[Least]The meadow looks neat and well- tended	ns	ns	ns	ns	ns	ns	**
[Least] I like the butterflies and other insects I saw in the meadow	ns	ns	ns	ns	ns	ns	ns
[Least] The meadow looks fresh	ns	ns	ns	ns	ns	ns	*
[Least] The meadow looks overgrown	ns	ns	ns	ns	ns	ns	ns
[Least] The dead plants spoil the flowers	ns	ns	ns	ns	ns	ns	*
[Least] The meadow looks dead	ns	ns	ns	ns	ns	ns	ns
[Least] There are lots of bare patches /gaps in the meadow	ns	ns	ns	ns	ns	ns	ns

Significant interactions (p=0.05-0.01): *. Very significant interactions (p=0.01-0.001): **. Extremely significant interactions (p=≤0.001): ***

Table 17 shows the results of the fourth set of Kruskall-Wallis tests which explored associations between people's least preferred plots and other (dependent) variables. Three significant associations were borne out of these tests, all related to age, between:

1. their attitude towards the 'tidiness' of their least preferred plot (p=0.001).
2. their attitude towards the 'freshness' of their least preferred plot (p=0.034)
3. their attitude towards the statement 'The dead plants spoil the flowers' regarding their least favourite plot (senescence).

Summary of the results of the a priori statistical analysis for Ruskin Park

1. **<u>other open spaces visited</u> may influence when respondents visit the park, what their reason is for visiting the park and their views about the planting, particularly their preferred piece of planting.**
2. **<u>Occupation</u> may influence overall opinion of the meadow in the park.**
3. **<u>Gender</u> may have an influence opinion on the overall shape of the meadow.**
4. **<u>Age</u> may have an influence over people's attitudes to their least preferred plot.**

5.4.3. Further investigation of associations - Post hoc tests

The significant associations identified above were further investigated by way of post hoc Tukey HSD tests. The Tukey Honest Significant Difference test searches for means that are significantly different from one another so can be used to tease out sifgnificant differences between groups (also known as *data dredging*) once the Kruskall-Wallis test has identified an *a priori s*ignificant link. The detailed results of these tests are included as appendices, and the analysis is given in the next part of this chapter.

5.4.3.1 Post hoc analysis of the usership/behaviour associations

As was shown in Section 5.4.2.1 there were five significant associations identified by the Kruskall-Wallis test with regards to park usership/behaviour . These were each in turn subjected to further analysis to try to find the nature of the differences.

5.4.3.1.i Association between how often people came to the park and their reason for being there (KW p=0.012)

The post hoc Tukey HSD test (results shown in appendix 1) identified significant differences between the means of the group stating they were there to socialise and both the group who came to walk the dog (p=0.009) and the group that came to supervise children (0.021), with the former group coming significantly less often. The results of the post hoc tests yielded by SPSS are shown in appendix 10, table 8. The mechanics of the statistics are explained in this appendix. It is worth mentioning here that these mean scores do not actually reflect the actual number of visits (ie they are not actual means) but constitute means of *ordinal ranks* for visit frequency (the different ranks are broken down in the table caption). Thus a mean score of 4.75 for dog walkers for example will mean that these dogwalkers, as a group, come to the park on average just under 4 times per week (a score of 4 = 1-3 times per week, of 5 = 4-6 times per week). The statistical tests used, as was stated earlier, *are* suitable for ordinal data, including the post hoc Tukey HSD test.

Main finding : Dog walkers and people who come to supervise their children come significantly more often that those who come to socialise

Table 18: Association between frequency of visits to the park and reason for being there, results of Tukey HSD test using letters (p=0.021). Means with different letters are significantly different. Those who came to socialise came significantly less often than those that came to supervise children or walk the dog. The means scores are means of visit frequency : there were six groups
1. never, 2. once a month or less, 3. a few times a month, 4. 1-3 times a week
5. 4-6 times per week, 6. Daily, thus the higher the score th greater the frequency of visits

	How often do you visit the park?			
What is your main reason for visiting the park?↓	Mean rank score for the groups for visit frequency.	N	Std. Deviation	Significant differences between the groups are demoted by the different letters.
For pleasure	3.54	92	1.448	ab
To walk dog	4.75	8	1.488	a
For transport	4.33	6	1.211	ab
For sport	3.60	5	1.517	ab
To socialise	2.42	12	1.165	b
For nature	3.78	9	1.716	ab
To supervise children	3.97	39	1.442	a
Total	3.66	171	1.488	

5.4.3.1.ii. Association between when in the year respondents visited the park and reason for visiting (KW p=0.001)

The post hoc analysis investigating the association between when in the year respondents visited the park and their main reason for visiting, once again showed a **very** significant difference between those who came to socialise and *those who came to look after children and for nature (p=0.000 and p=0.002 respectively),* and a significant difference between those who came to socailise and the other groups (results in Appendix 10, table 16). These answers were coded (1) all year round and (2) in summer only, thus the mean score of 1.62 can be interpreted to mean that large group of those who came to socialise come in summer only. This group did only constitute 7 % of the sample, while 18% of the entire sample of respondents stated that they came in summer only. In terms of planting, for park managers, the importance of interesting, seasonal planting in parks that will draw in this specific user group is paramount. It may also have implications for seating and picnicking places near to naturalistic planting which is at its peak in the summer.

Main finding : In Ruskin Park most of the users come all year round, but a good proportion of those who come in summer only come to socialise

Table 19: Association between time of year of visits to the park (all year round or summer only) and reason for being there, results of Tukey HSD test using letters (p=0.021). Means with different letters are significantly different. Most of the user groups came all year round, with a significant difference between those who came to socialise and the rest. The means relate to 2 numbers. 1 being all year round and 2 being summer only.

	When do you visit the park?			
What is your main reason for visiting the park?	Mean rank score for seasonaity. 1=all year round 2=in summer only	N	Std. Deviation	Significant differences are denoted by different letters
For pleasure	1.19	89	.395	a
To walk dog	1.13	8	.354	a
For transport	1.00	6	0.000	a
For sport	1.00	5	0.000	a
To socialise	1.64	11	.505	b
For nature	1.00	9	0.000	a
To supervise children	1.10	39	.307	a
	1.17	167	.380	

5.4.3.1.iii. Association between respondents' occupation and visit frequency (p=0.049).

This was the third significant interaction in relation to usership identified by the Kruskall-Wallis test. When investigated further the Tukey HSD test identified no significant differences between the means of the four occupation groups.

5.4.3.1.iv Association between access to other open spaces and when in the year they visit the park (kw 0.021)

Comparison of the means of the groups by way of the Tukey HSD test identified a significant difference between the mean rank scores of those who stayed in the city and those who got out regularly (

Table 20). To recap, a score of 1 was 'all year round' and a score of 2 was 'in Summer only'. As can be seen in the table, those who only had access to human-designed landscapes (47% of the sample) were significantly more likely to come all year round (mean rank score 1.11) than those who have access to less heavily manipulated landscapes (17%), whose mean rank score was 1.33. This suggests how dependent regular, intra-seasonal park users are on their park and how it is

potentially the main source of access to nature for almost half of the sample. Full results shown in Appendix 10, table 9.

Table 20: Association between access to other open spaces and time of year of visits to the park (all year round or summer only), results of Tukey HSD test using letters (p=0.024). Means with different letters are significantly different.

A3 WHICH OTHER OPEN SPACES DO YOU VISIT MOST REGULARLY↓	When do you visit the park . Mean scores of ranks.	N	Std. Deviation	Significant differences are denoted by different letters
human designed/heavily manipulated	1.11	76	.309	a
less heavily manipulated	1.33	27	.480	b
both	1.23	62	.422	ab
Total	1.19	165	.392	

Put simply, the table above shows that a significantly greater proportion of those who only had access to human designed and heavily manipulated landscapes came all year round (Tukey p= 0.024 see appendix).

5.4.3.1.v Association between other open spaces visited and main reason for visiting the park (p=0.038)

The Tukey post hoc test reported a difference between the group with regular access to less heavily manipulated space and those who had access to both types of space (Tukey p= 0.030. See appendix 10 table 10). The graph in Figure 117 below attempts to suggest where this difference lies. A graph has been used as the "reason for visiting" is a nominal variable, therefore cannot be quantified. This would require further testing to be proven but this study used the Tukey test to explore this idea. While all three of the groups cited pleasure as their main reason for visiting the park there was a lower proportion of those with access to **both t**ypes of space who were there for pleasure, but a visibly higher proportion of them were there for nature (and to look after children). This suggests that people with access to both types of space might seek more nature in their urban park experience which ties in to theories about familiarity influencing landscape interaction. This result may tentatively support the ecocentrism and familiarity theories mentioned in the literature review, and will be discussed in relation to the literature review at the end of this chapter.

Main finding : People with access to both built up and less built up spaces may be more likely to cite nature as being their main reason for visiting the park than those with only access to heavily built up space.

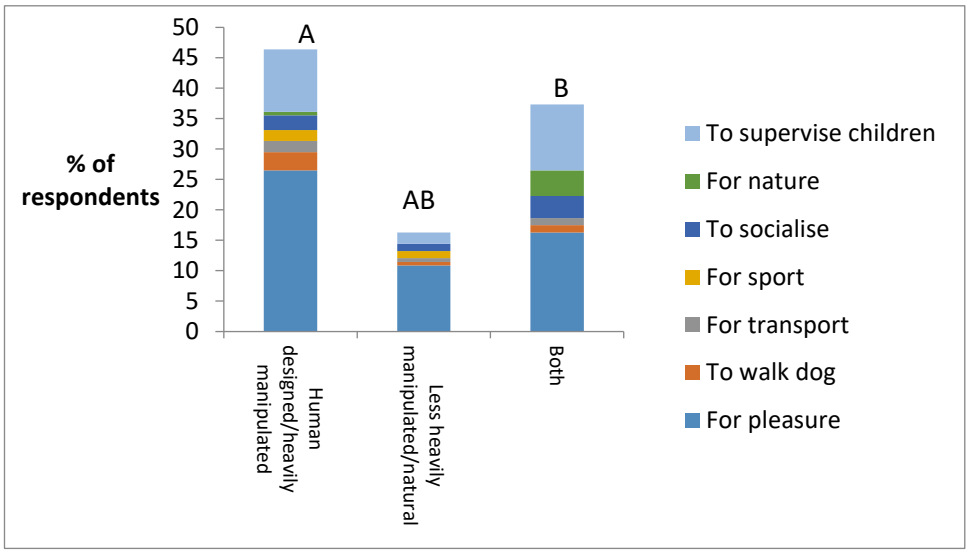


Figure 117: Association between other open spaces visited and main reason for visiting the park, % of respondents in each access group citing each reason

5.4.3.2 Post hoc analysis of general attitude to the planting

Two significant associations were suggested by the Kruskall-Wallis test in relation to people's general attitudes to the planting. The first was that people's occupation might have an influence over their overall impression of the meadow in the park (p=0.029). Subjecting this to a Tukey post hoc test (at p=0.05) indicated a significant difference between the semi-skilled group and the group not in employment (p= 0.013). (The SPSS test is shown in appendix 10 table 12). The difference between the means of these two groups is 0.27 and deemed significant. The not in employment group had the lowest opinion about of the meadow (although this was still high with the top score being 2). In fact all of the groups had a high opinion of the meadow.

Main finding : the semi-skilled have a higher general opinion of the meadow than the not-in-employment group.

Table 21: Association between occupation and attitude towards the meadow, results of Tukey HSD test using letters (p=0.05)). Means with different letters are significantly different. The mean

scores were calculated from a five point scale : -2 negative -1 a little negative 0 – no opinion 1 positive 2 very positive

General attitude to the planting → / Occupation groups↓	Mean attitude score (between -1 and 2)	Significant differences are denoted by different letters
Unskilled	1.77	ab
Semiskilled	1.96	a
Skilled	1.86	ab
Not in employment	1.69	b
Total	1.84	

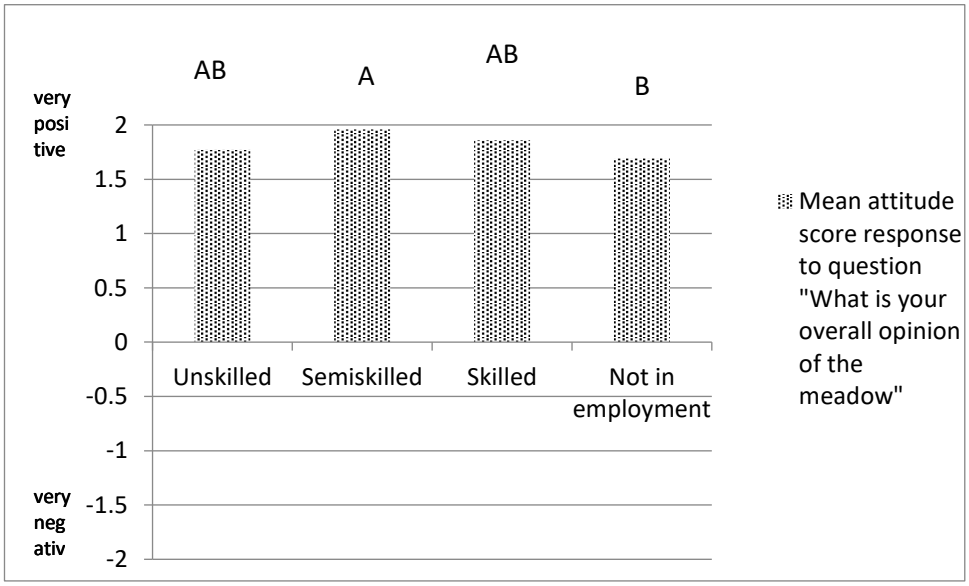


Figure 118: Association between occupation and attitude towards the meadow, graph showing different mean results of Tukey HSD test using letters (p=0.05). Means with different letters are significantly different.

The 'not in employment' group comprised the unemployed, parents looking after children, retired people and students. The broadness of the groups coupled with the relative narrowness of the difference between the responses suggest further research regarding 'not in employment' would be necessary.

The second significant association in relation to general attitude was between the gender of the respondents and how they felt about the outline shape of the meadow (Mann-Whitney p=0.019). Responses ranged from -1 to 2 with -1 being negative, 0 being no opinion, 1 being positive and 2 being very positive to the question 'How do you feel about the outline shape of the meadow?' Women felt more positive about the outline shape of the meadow (as is shown in the mean scores in Table 22)

Main finding. Women feel significantly more positive about the outline shape of the meadow than men in Ruskin park

Table 22: Mean values of the response 'How do you feel about the outline shape of the meadow?

Gender	Mean	N	Std. Deviation
Men	.82	62	.559
Women	.99	108	.216
Total	.93	170	.386

A graphic breakdown of the *strength* of opinion between the men and the women (Figure 119) shows that the results as a whole were almost unanimously positive with a very small proportion of men expressing a negative opinion.

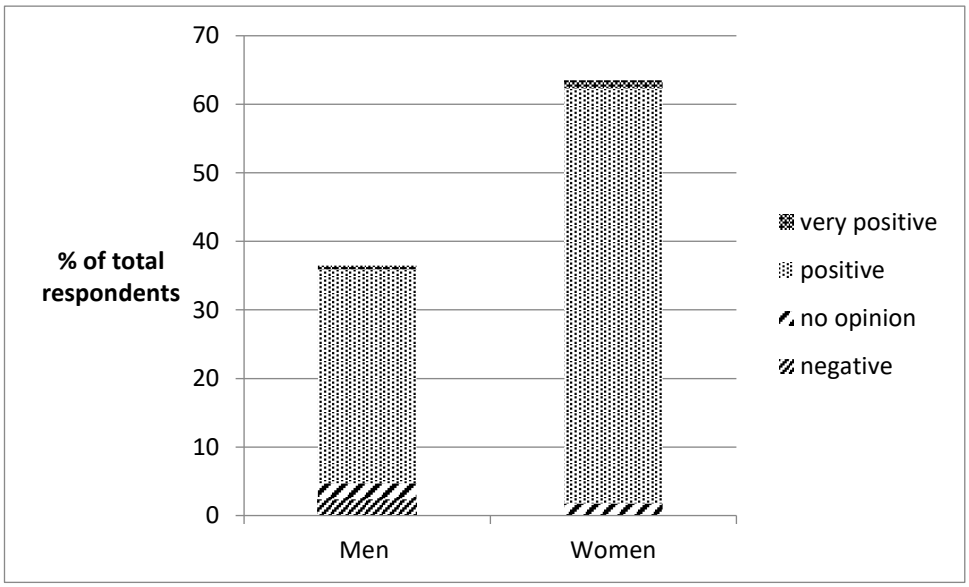


Figure 119: Opinions of men and women about the outline shape of the meadow

5.4.3.3 Post hoc analysis of Likert responses regarding attitude towards different meadow types.

5.4.3.3.i Associations relating to preferred plot – experience of other types of landscape

When asked about aspects of their preferred plot there were two significant associations initially identified by the Kruskall-Wallis test, both with regard to other open spaces visited by the respondents, the first being colour (KW p=0.027) and the second being balance of colours (0.049).

The range of responses was from -2 (strongly disagree) to 2 (strongly agree). A post hoc Tukey HSD test did not reveal the nature of the significant difference between the groups for flower colour (Table 21).

Table 23: Mean scores for the response to the question 'I like the flower colours/combination of colours' for the three 'other open spaces' groups. There was no significant difference reported between the means, although the likert scores were higher for those who tended to visit human-designed spaces

Likert response→ Types of other open space visited↓	Mean score for 'I like the colours/ combination of colours' in preferred plot.	N
Human designed/heavily manipulated	1.27	78
Less heavily manipulated/natural	1.57	28
Both	1.51	63

Table 24: Mean scores for the response to the question 'I like the balance between the colours' for the three 'other open spaces groups'

Likert response→ Types of other open space visited↓	Mean score for the statement "I like the balance between the colours" in my preferred plot	N	Significant differences are denoted by letters
Human designed/heavily manipulated	1.12	78	a
Less heavily manipulated/natural	1.25	28	ab
Both	1.41	63	b
Total	1.25	169	

For balance of colours, as can be seen in Table 24 (full results in appendix 8), post hoc Tukey tests revealed that the difference between the group who stayed in cities and the group who visited both cities and natural landscapes was significant (p=0.048). (Full results in appendix 10, table 11).

For both of these statements, mean scores for the respondents who visited both natural and urban spaces were higher (although for the first statement this was not significant). These results could tentatively suggest that the broader the landscape experience, the greater the appreciation of balance. However the difference between the overall means was small and only significant for one of the responses.

Main finding : Experience of both natural and non-natural landscapes positively influence preference for aspects of naturalistic planting

5.4.3.3.ii Associations relating to least preferred plot - Age

When asked about their least favourite plots an influential factor over their strength of opinion, identified by the Kruskall-Wallis test, appeared to be age, with three apparent significant interactions identified by the Kruskall-Wallis test. The first was in relation to the statement *'For my least preferred plot the meadow looks neat and well tended'* (KW: very significant : p = 0.001), the second in relation to the statement *'For my least preferred plot the meadow looks fresh'* (KW p=0.034), the third in relation to the statement *'For my least preferred plot the dead plants spoil the flowers'* (p=0.023).

a) Neatness

Table 25: Mean results for the different age groups in relation to the statement 'The meadow looks neat and well tended'

Likert statement → / Different age groups Ruskin Park ↓	Mean score for the statement "in my least preferred plot the meadow looks neat and well tended	N	Significant differences are denoted by different letter
UNDER 18	-1.50	6	a
18-30	-.81	31	ab
31 - 45	-.75	75	a
46 - 55	-.20	25	ab
56-65	-.33	18	ab
OVER 65	.11	18	b
Total	-.57	173	

A Kruskall-Wallis test revealed a significant difference between the mean results of different age groups (p=0.001). in relation to neatness. Respondents could answer from strongly agree (2) to strongly disagree (-2).

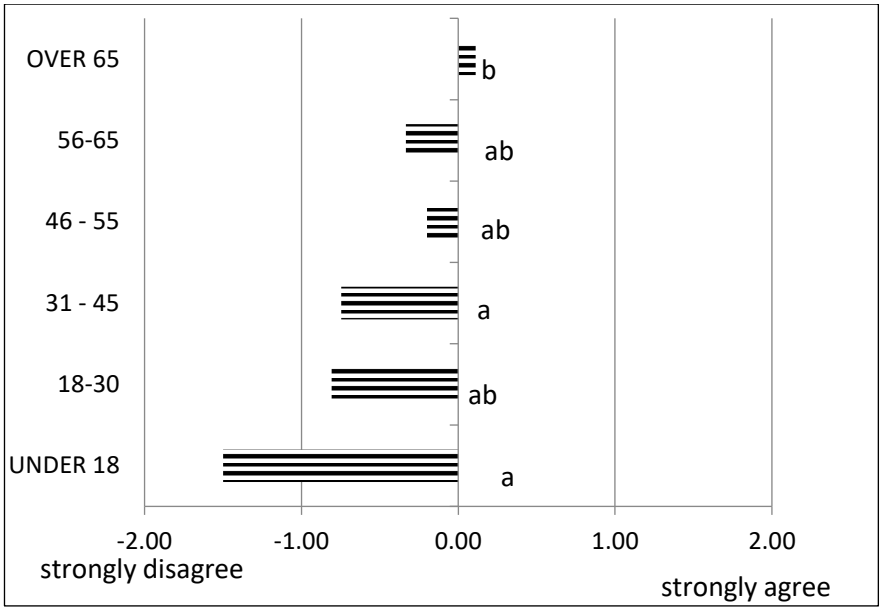


Figure 120: Results for the different age groups in relation to the statement 'The meadow looks neat and well tended. The graph shows the under 18s tended to strongly disagree with this statement, and as the age increased so did agreement. Significant differences are indicated by the letter; the groups that share a letter do not significantly differ, while those that do not share a letter, do.

Mean scores for the question "How much do you agree with the statement "The meadow looks neat and well- tended" for your least favourite plot were subjected to a post hoc Tukey HSD test which revealed a significant difference between the groups (see Table 25 and Figure 120 above, full results in appendix 10 table 15). This graph shows that the difference in attitude was significantly different between the under-18s and over-65s, as well as between the 31-45s and the over 65s. Interestingly the Tukey post hoc test did not reveal a significant difference between the 18-30s (who had a similar mean score for the level of disagreement of 0.81 to the 31 – 45s). This may have been due to the sample size of this age group being smaller. However this test does point strongly to the fact that as people get older their opinions became less strong with regard to messiness.

b) Freshness

The second association identified by the Kruskall -Wallis test in relation to respondents' preferred plot was between the statement "my least preferred plot looks fresh" and age, once again (KW p=0.034). The mean scores for the different age groups' responses to this statement are tabulated below. The Tukey post hoc test identified, once again, a significant difference between the mean scores in the under 18 age group and the over 65s (see appendix 10 table 14).

Table 26: mean scores of the responses of the different age groups to the statement "For your least preferred plot how much do you agree or disagree with the statement 'The meadow looks fresh'. The scores ranged from -2 (strongly disagree) to 2 (strongly agree)

Age groups↓	Mean score	N	Significant differences are denoted by different letter
UNDER 18	-1.50	6	a
18-30	-.53	30	ab
31 - 45	-.29	75	ab
46 - 55	-.12	25	ab
56-65	-.17	18	ab
OVER 65	.06	18	b
Total	-.30	172	

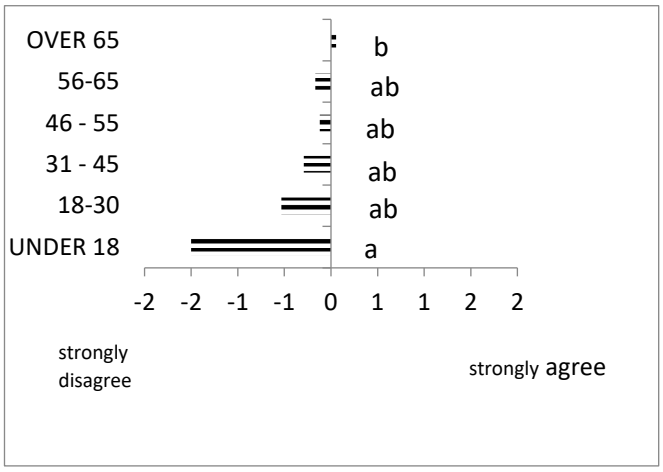


Figure 121: Mean scores for the question "How much do you agree with the statement 'The meadow looks fresh' for your least favourite plot (Kruskall Wallis P=0.024<0.05). Bars and labels with different letters are significantly different at the P=0.05 level (Tukey test).

The graph (Figure 121, above) shows the nature of this significant difference between the under-18s and the over-65s. There is a similar pattern to the previous association (messiness) with the younger contingent disagreeing most strongly and this opinion becoming increasingly mild until the over-65s are actually agreeing with relatively positive statements about their least favourite plot.

c) Deadness

Once again there was a significant difference between the under-18 age group and the over-65 age group in relation to the statement "The dead plants spoil the flowers" (Figure 122). For the rest of the age groups opinion was broadly spread with agreement and disagreement in equal measure.

Table 27: results for the Tukey HSD test comparing the means of the scores of the different age groups response to the statement "The dead plants spoil the flowers" The disagreement of the over 65s was significantly different from the agreement of the under 18s.

Age groups ↓	Mean score	N	Significant differences between the means are denoted by different letter
UNDER 18	1.17	6	**a**
18-30	.58	31	ab
31 - 45	.11	75	ab
46 - 55	.08	25	ab
56-65	.17	18	ab
OVER 65	-.22	18	**b**
Ave. score	.20	173	

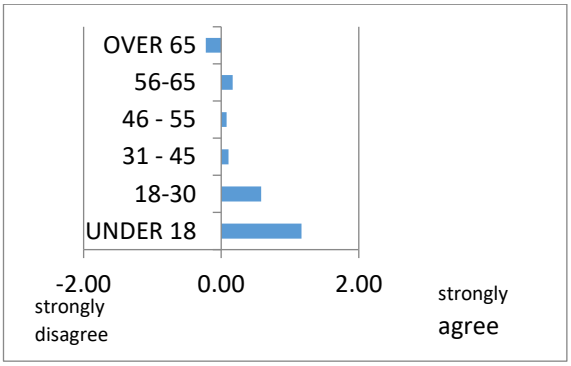


Figure 122: graph of results for the Tukey HSD test comparing the means of the scores of the different age groups response to the statement "The dead plants spoil the flowers" The disagreement of the over 65s was significantly different from the agreement of the under 18s

Main findings in relation to age (results of post hoc tests comparing different age groups):

1. **Older people are more tolerant of messiness than the under-18s and the 31 – 45 age group**
2. **Younger people, the under-18s, have stronger negative opinions about planting that they do not find satisfactory, in relation to the concept of freshness**
3. **Younger people will agree with the idea of "deadness" in relation to their least preferred plot, even in the absence of any evidence of deadness.**

5.5 Questionnaire Results: Meersbrook Park, Sheffield

The general results for Sheffield were presented earlier in this chapter, combined with the Ruskin Park results.

5.5.1 General attitude to the planting

5.5.1.1 Appropriateness

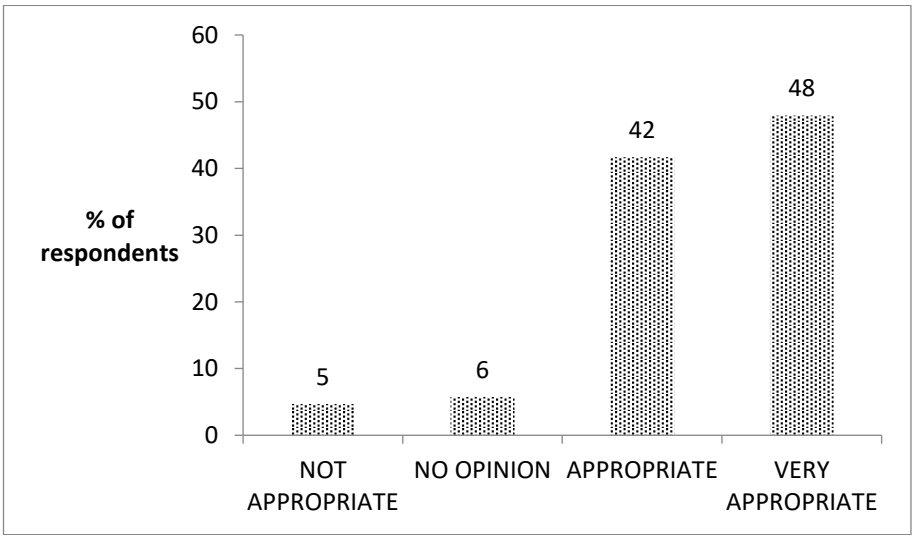


Figure 123: Questionnaire results (% of respondents) for "Do you think meadow type planting is appropriate in the park?"

Respondents responded unanimously positively to the meadow planting in general with almost all (90%) believing the planting to be appropriate or very appropriate in the park.

5.5.1.2. Preference to other planting in the park

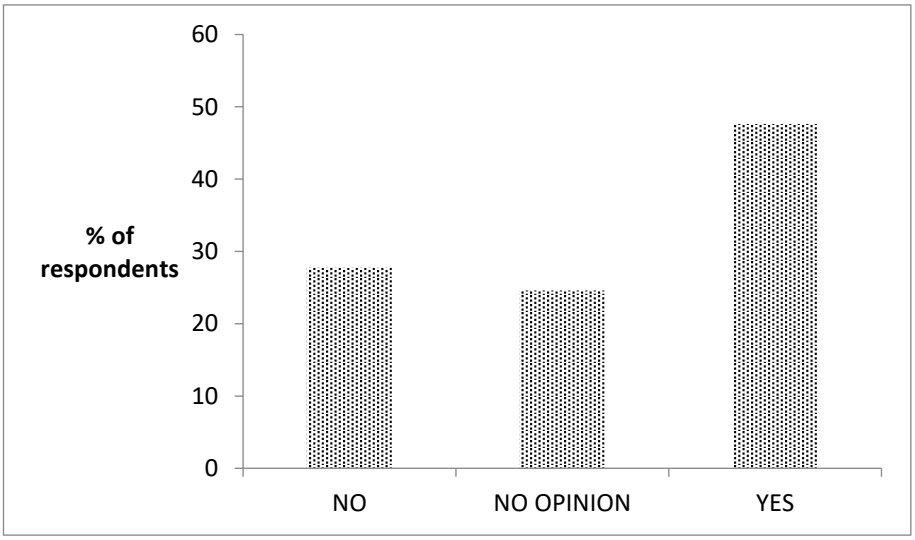


Figure 124: Questionnaire results (% of respondents) for "Do you prefer this meadow type vegetation to other types of vegetation in the park?"

5.5.2 Attitudes to the plots themselves

5.5.2.1 Preferred plot

(larger photos shown in appendix 9)

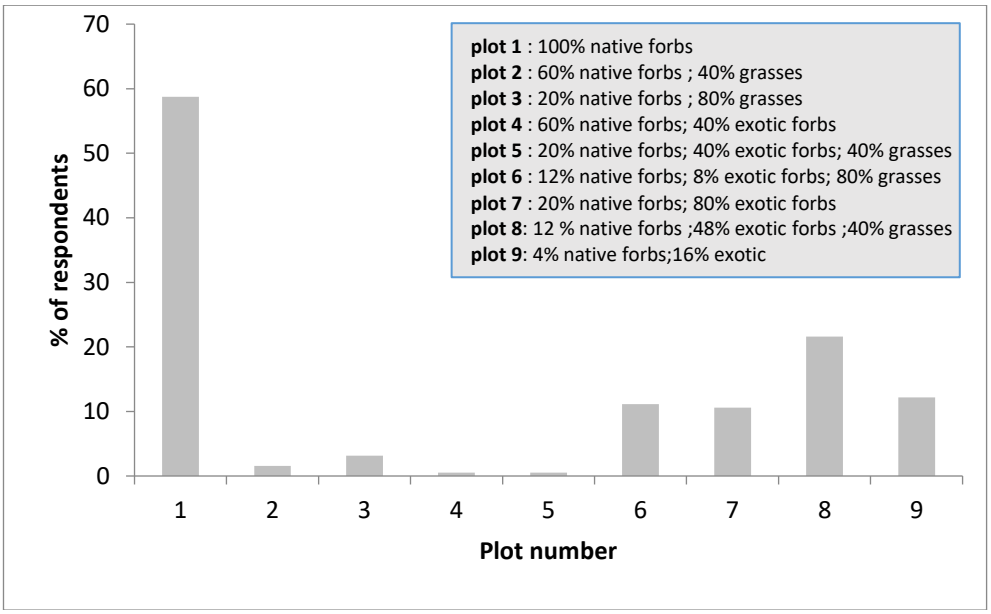


Figure 125: Questionnaire results (% of respondents) for preferred plot

58 % of the respondents at Meersbrook Park identified plot number 1 as being their preferred plot, with the rest of the preference being divided loosely between plots 6, 7, 8 and 9. The preferred plot had originally been sown with 100 % native perennials and was characterised by a large yellow toadflax *Linaria vulgaris* growing in the middle of it. The other four preferred plots were marked in their difference from the other plots by the presence of pink flowers, even though the weed content of these plots was also quite marked. 21% identified plot 8 as being their preferred plot which was characterised by diverse tall grasses at various stages of their lifecycle, some flowers and a large nettle plant. Plot numbers 9, 6 and 7 all had colourful flowers in them but, as can be seen in the images below, were relatively similar in terms of grass:flower ratio. Plots 6 and 7 were characterised (but by no means dominated) by the presence of *Malva sylvestris* (common mallow) and oxeye daisies, as well as the sporadic yet notable presence of *Lychnis coronaria* (bright pink exotic) and Plot number 9 had a wider range of flowers than plots 6 and 7. Photographs of all of the plots can be seen in the appendices.

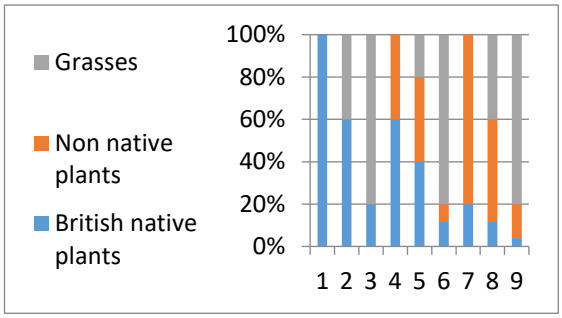


Figure 126: original seed mix configurations

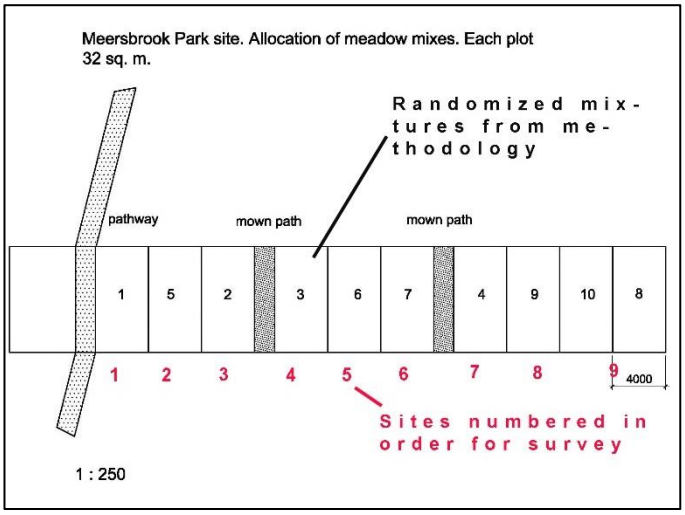


Figure 127:

Figure 126 and Figure 127 above show the seed mixes originally sown in the Meersbrook Park plots. The Red numbers are the site survey numbers. The black numbers were the numbers of the randomized mixes originally sown in 2007. The preferred site was number 1 which also corresponded with mix number 1, shown in Figure 126 to be 100% native grasses. The four other almost equally preferred sites were sites 6, 7, 8 and 9 corresponding with mixes 7, 4, 9 and 10/8 respectively. Despite the fact that these plots all had originally been sown with some non-native flowers, the actual pink flowers that were in evidence were mostly native, notably *Malva moschata* and *Centaurea nigra* (see appendix x). The relationship between the original research design and preference will be discussed in the findings, however no meaningful patterns could be seen between the original research design and preference for this site. The plots in Meersbrook park had been randomised and the graphic has been shown of the layout really to at this stage in the study.

Figure 128: Plot 1, Meersbrook Park, Sheffield

Figure 130: Plot 9, Meersbrook Park, Sheffield

Figure 131: Plot 6, Meersbrook Park, Sheffield

5.5.2.2 Least preferred plot

The least preferred plots in Meersbrook park were plots 5, 4 and 8 (see Figure 132 below). 40% of respondents stated that plot number 5 was their least preferred plot, with plots 8 and 4 running behind with 20 % and 20% respectively.

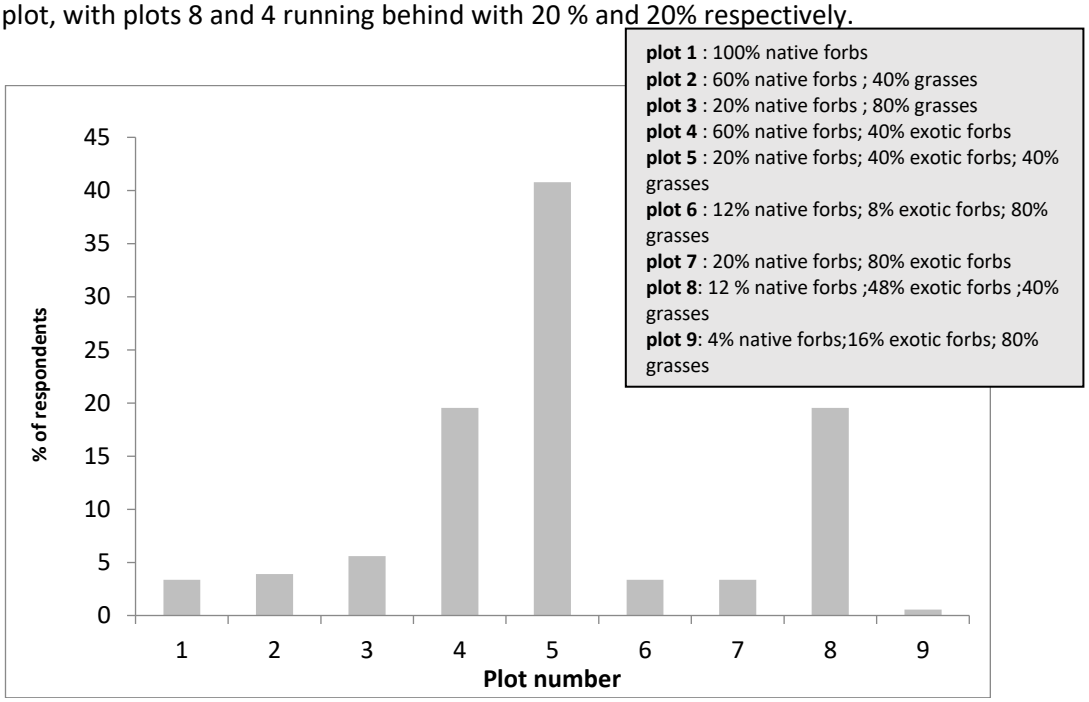


Figure 132: Questionnaire results (% of respondents) for least preferred plot

They were not necessarily the least floriferous. The height of the planting in plots 4, 5 and 6 were lower than the other plots. Plot 5 could be characterised by a **lack of plant diversity and absence of flowers**. The photographs (below and in appendix) show this clearly. The single, identifiable dock weed (*Rumex crispus*) in

the middle of plot 5 is framed by the monotony of the grass around and and absence of the height and structure provided the senescent grass heads in plots 7, 8 and 9. These two factors combined may have made it the least preferred plot.

Figure 133: Plot 5, Meersbrook Park, Sheffield

Plot 4, like plot 5, and unlike all of the other plots, also had the brownish flower heads of *Rumex crispus* and, despite the presence of a bit of pink in the form of knapweed (Centaurea nigra) and Malva moschata, was least preferred plot for 19% of respondents.

Figure 134: Plot 4, Meersbrook Park, Sheffield

Plot 8, having been the preferred plot for 20% of the respondents was also least preferred for 19% of the respondents. Structure, height and grass diversity combined to characterise plot number 8 but the presence of a very large spreading nettle may have cast it out of favour for 19% of the respondents. The ambivalence about plot number 8 may be due to the both negative and positive connotations of nettles. Traditionally they have been seen as a weed, and one that stings and colonises neglected areas of high nutrient availability. Latterly

their benefical qualities in terms of wildlife potential and even as a wild food may have ingratiated them with a small proportion of the respondents.

Figure 135: Plot 8, Meersbrook Park, Sheffield

It would appear that the presence of weeds is a factor that negatively influences preference but that said, plot number 7 was the weediest plot (some of the docks had actually been cut down) but there was diversity of structure and a large block of colour in the form of a large *Malva moschata* which may have mitigated the negative aesthetic presentation of the weeds. This will be further discussed in the discussion section of the quantitative results.

5.5.3 Attitudes to the plots themselves. The Likert responses

5.5.3.1 Preferred plot

As with Ruskin Park the respondents were asked to stand in front of their preferred or least preferred plot and state how much they agreed or disagreed with certain statements about aspects of the plot in front of them. The aspects they were asked about were colour, combination of colours, balance of colours, freshness, tidiness etc. From these answers it was hoped that reasons for preference might be inferred. The stronger the agreement, the more influential on preference each factor would be.

When asked about colour and combination of colours for their preferred plot (Figure 136 - Figure 138) there was unanimity of agreement that respondents liked the colours (95% agreed), the balance between the colours (88%) and the overall amount of colour (85%). When it came to statements about liking the grasses (Figure 139 - Figure 140), although a sizable majority agreed with statements about liking the grasses, a good proportion (20% and 15% respectively) had no opinion about the grasses, implying they are less of an influence than colour on preference.

Regarding messiness (Figure 141) the responses show a measure of ambivalence with 40 % disagreeing that their preferred plot looked neat and tidy, 20 % having no opinion and 20 % agreeing.

While 68% of respondents purported to agree that they liked the butterflies' and other invertebrates' presence over their preferred plot, a quarter of the respondents had no opinion about this statement (Figure 142). This would suggest that 25% did not actually see any butterflies or invertebrates.

Respondents broadly agreed with the statements about freshness (Figure 143) and fullness (Figure 144) but disagreement was also visible for both of these statements (13% and 14% respectively).

5.5.3.1.i Colour. Meersbrook. Preferred plot.

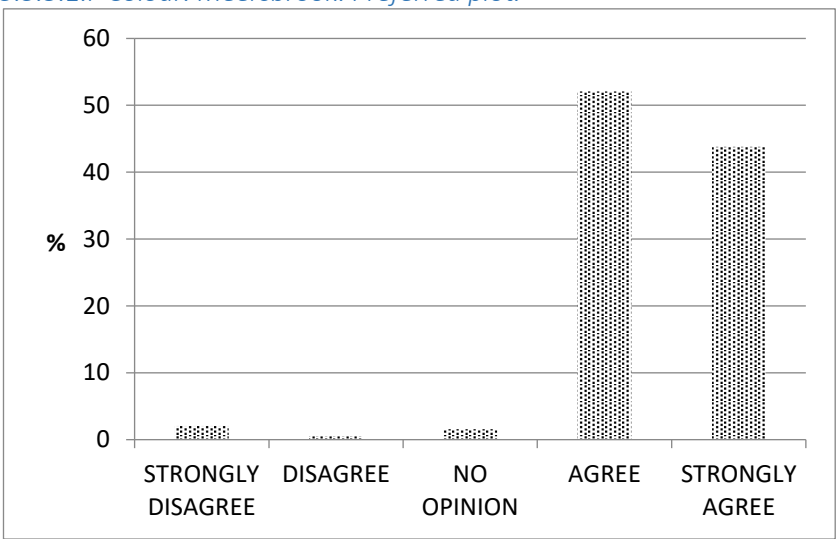


Figure 136: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the colours/combination of colours' in relation to your preferred plot?"

5.5.3.1.ii Balance between the colours. Meersbrook. Preferred plot.

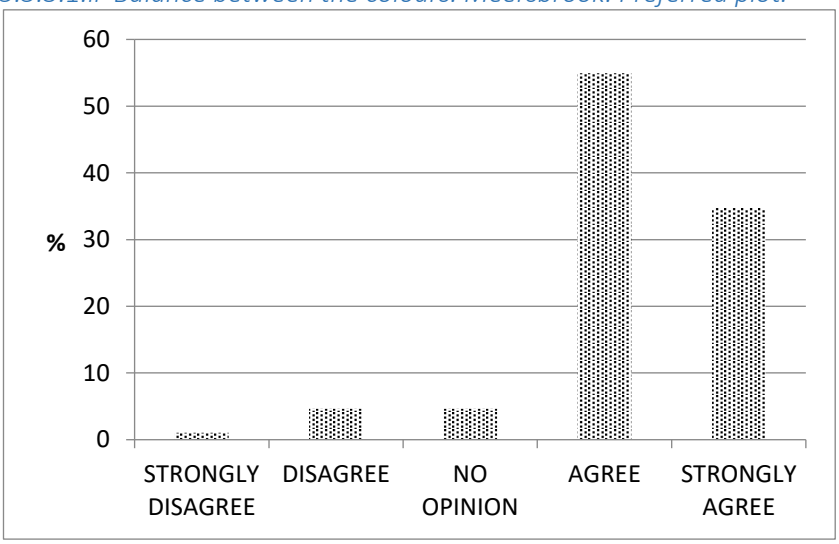


Figure 137: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the balance between the colours' for your preferred plot?"

5.5.3.1.iii Overall amount of colour. Meersbrook. Preferred plot.

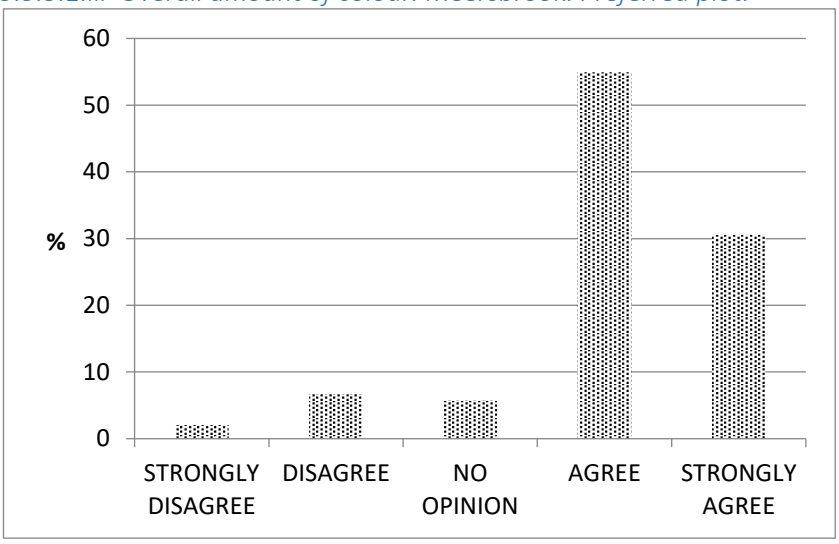


Figure 138: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the overall amount of colour' for your preferred plot?"

For the colour statements the responses were fairly similar for all three statements for the Sheffield preferred plot. Most agreed with the statements about colour.

5.5.3.1.iv Grasses. Meersbrook. Preferred plot.

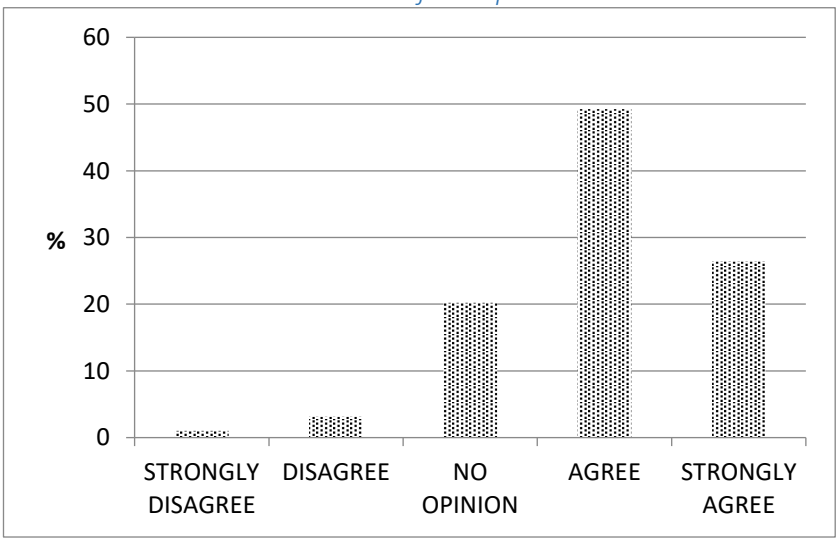


Figure 139: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the grasses moving in the wind' for your preferred plot?"

The agreement was slightly less strong for the statement about grasses.

5.5.3.1.v Green of the Grasses. Meersbrook. Preferred plot.

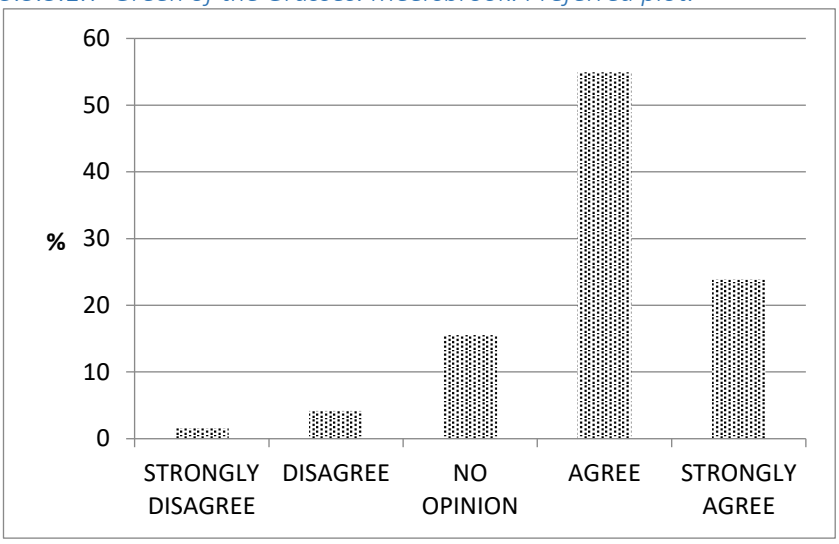


Figure 140: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the green of the grasses' for your preferred plot?"

5.5.3.1 vi Neatness. Meersbrook. Preferred plot.

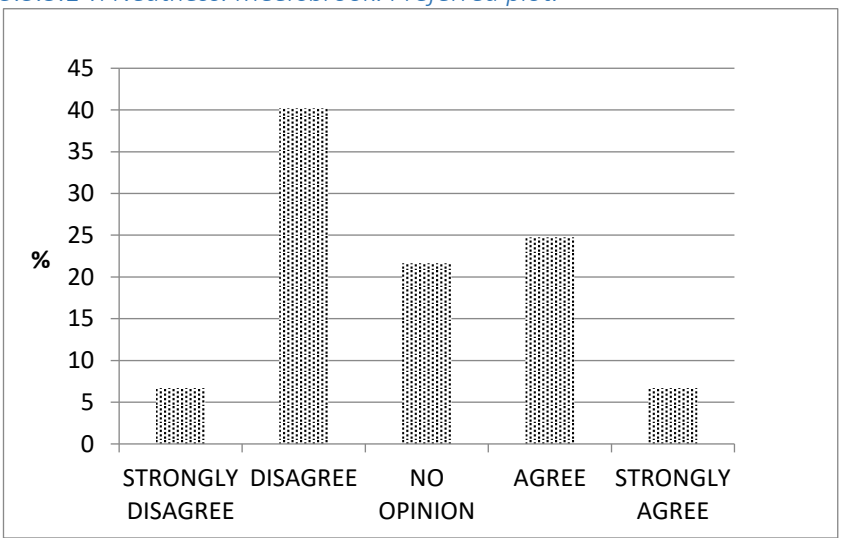


Figure 141: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks neat and well tended' for your preferred plot?"

Respondents did not really agree that their preferred plot looked neat and well tended.

5.5.3.1 vii Invertebrates. Meersbrook. Preferred plot.

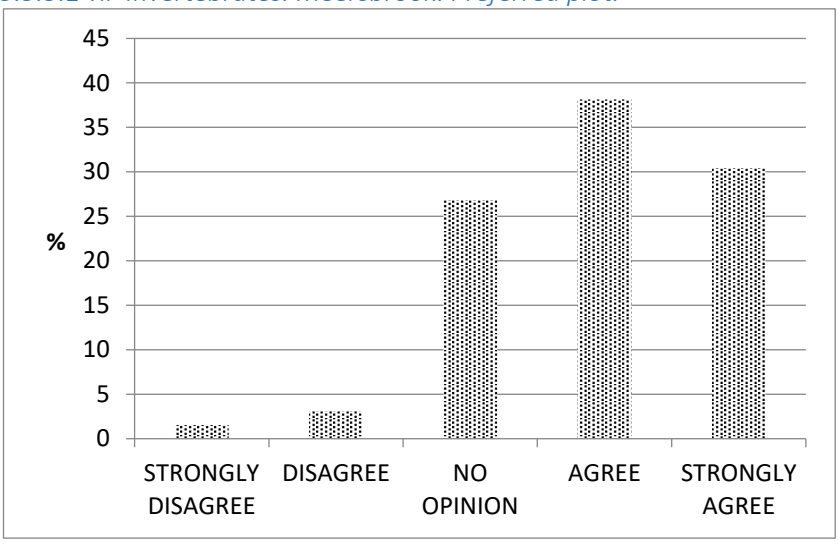


Figure 142: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the butterflies and other invertebrates I saw' in your preferred plot?"

Respondents broadly agreed with this.

5.5.3.1.viii Freshness. Meersbrook. Preferred plot.

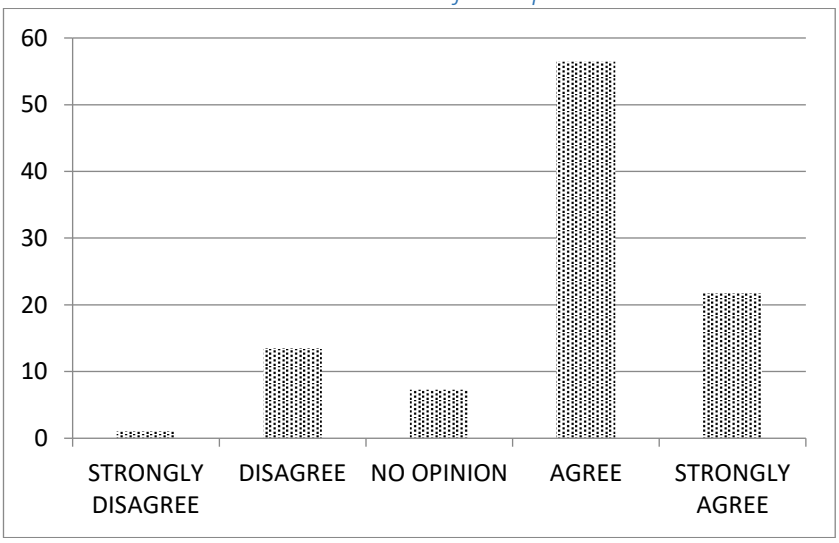


Figure 143: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks fresh' for your preferred plot?"

5.5.3.1.ix Fullness. Meersbrook. Preferred plot.

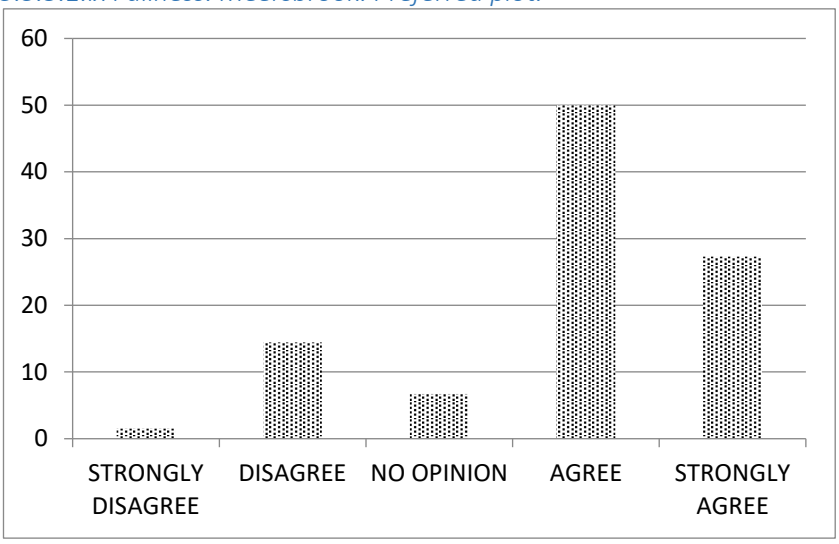


Figure 144: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks full' for your preferred plot?"

Respondents generally agreed with statements about freshness and fullness.

5.5.3.2 Least preferred plot

The same variables were explored in relation to respondents' least favourite plot. Respondents broadly (70% and 72% respectively) disagreed with the statements about liking the actual colours and the balance between the colours, although there there was agreement with the statement about the overall amount of colour (57% agreed and 25 % had no opinion about this). These results reflected the fact that the only colour that was being offered to the respondents was green, and that there was a lot of it! This result indicates that in the absence of flowers green is an acceptable "colour" for respondents. Large amounts of the colour green were not indicated to be a negative aspect.

Approximately one quarter of the respondents had no opinion about grasses but a good proportion agreed that they like the grasses blowing in the wind and they liked the green of the grasses (Figure 148 and Figure 149) in their least preferred plot.

63 % disagreed that their least preferred plot looked neat and tidy but there was a degree of ambivalence about this with 17% having no opinion and 14% agreeing that it looked neat and well tended.

As far as invertebrates and butterflies were concerned a sizable 42 % professed to having no opinion about this with regards their least preferred plot (Figure 151) This suggests that they simply saw none so were not equipped to give an opinion. 30% agreed that they liked the butterflies and other invertebrates flying over their least favourite plot. The question of butterflies elicited little disagreement for both preferred and least preferred plot. In fact the shape of the results for both preferred and least preferred plot was similar (Figure 142, page 213, and Figure 151, below).

With regards to freshness there was a degree of ambivalence in the responses, with 33% disagreeing that their least preferred plot looked fresh, and 35% agreeing. A further 19% had no opinion about freshness. This may be due to confused notions of the word fresh.

There was less ambivalence regarding fullness; 25 % disagreed that their least preferred plot looked full while 52% agreed that their least preferred plot looked full.

Again there was ambivalence with regards senescence; the statement “The dead plants spoil the flowers” elicited quite a lot of disagreement as well as agreement and people broadly (but not unanimously) disagreed with the statement “The meadow looks dead” (Figure 154).

5.5.3.2.i Colour Meersbrook. Least preferred plot.

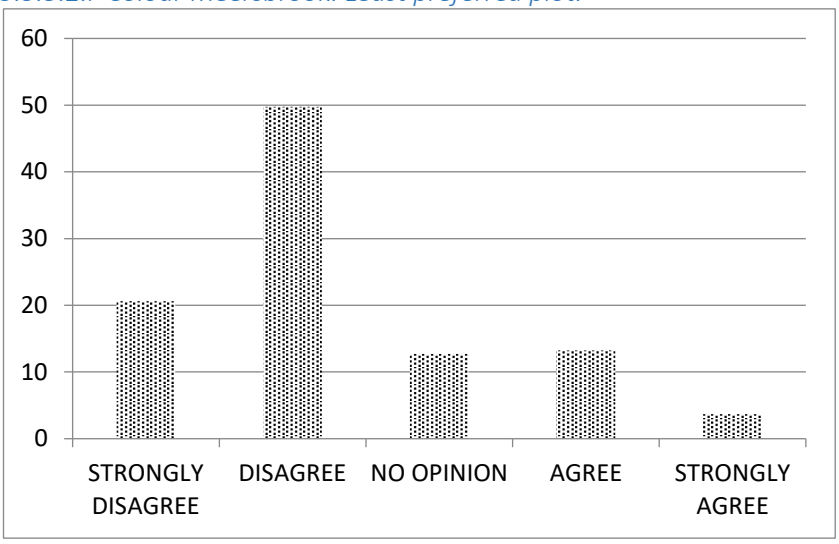


Figure 145: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the flowers colours/combination of colours' for your least favourite plot?"

5.5.3.2.ii Balance. Meersbrook. Least preferred plot.

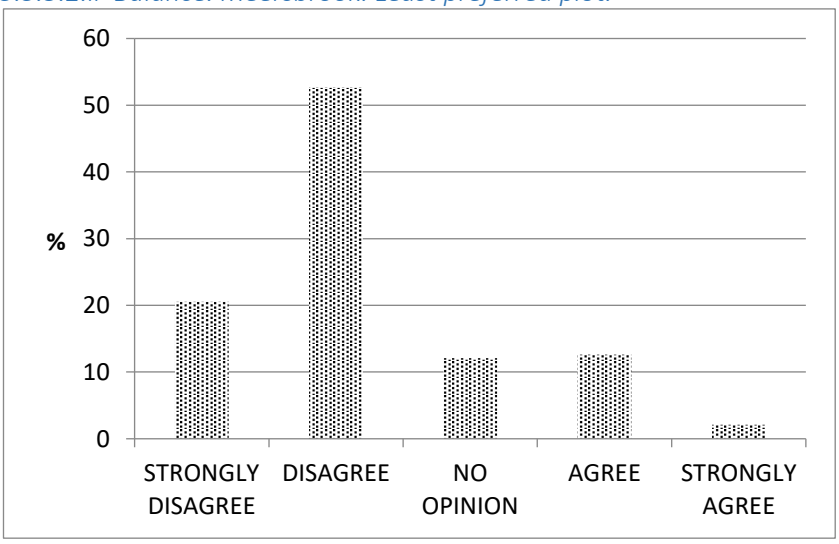


Figure 146: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the balance between the colourful flowers and grasses' for your least preferred plot?"

5.5.3.2.iii Overall amount of colour. Meersbrook. Least preferred plot.

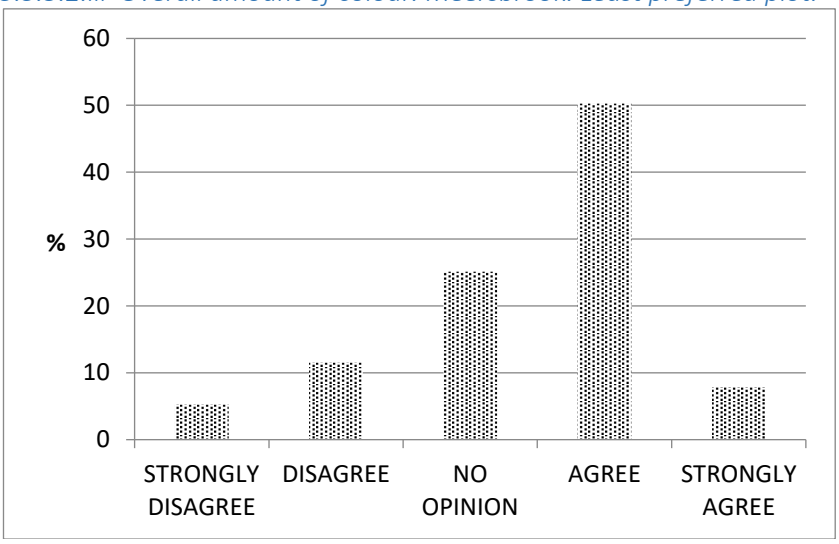


Figure 147: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like the overall amount of colour' for your least favourite plot?"

5.5.3.2.iv Grasses. Meersbrook. Least preferred plot.

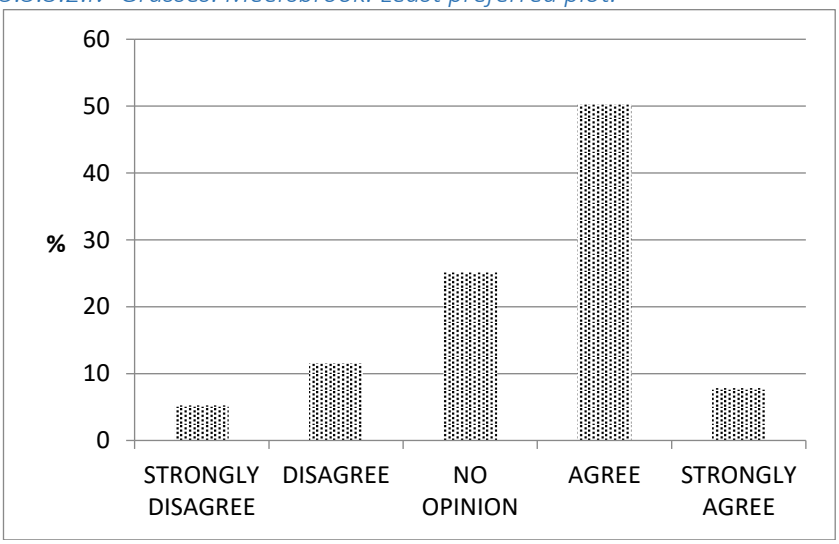


Figure 148: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like to see the grasses blowing in the wind' for your least favourite plot?"

5.5.3.2.v Green of the grasses. Meersbrook. Least preferred plot.

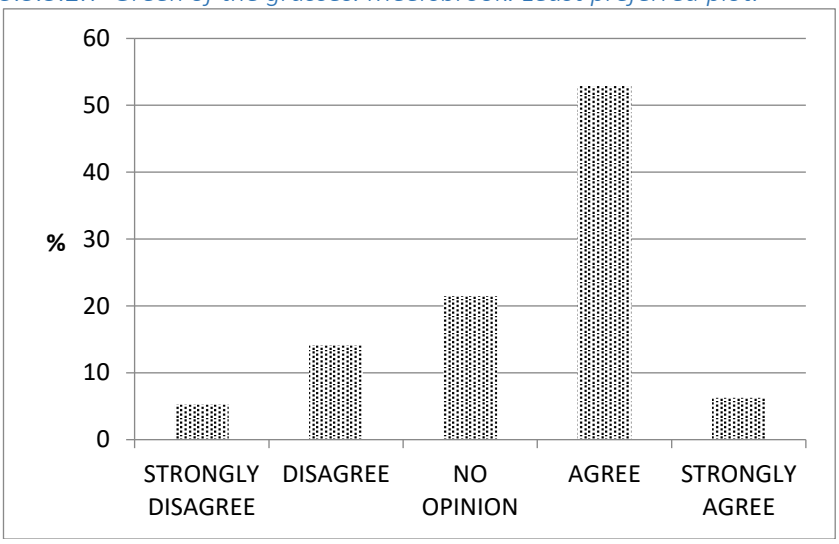


Figure 149: Questionnaire results (% of respondents) for "Do you agree with the statement 'I like green of the grasses' for your least favourite plot?"

5.5.3.2.vi Neatness. Meersbrook. Least preferred plot.

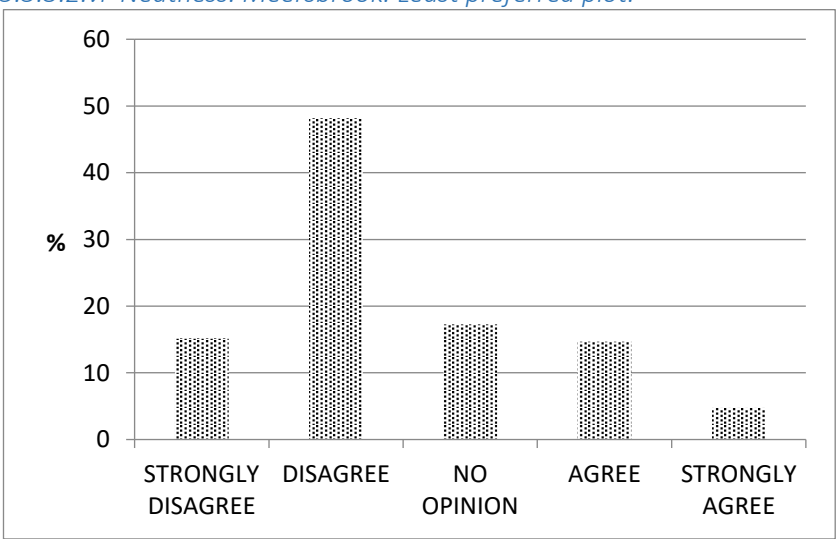


Figure 150: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks neat and tidy' for your least favourite plot?"

5.5.3.2.vii Invertebrates. Meersbrook. Least preferred plot.

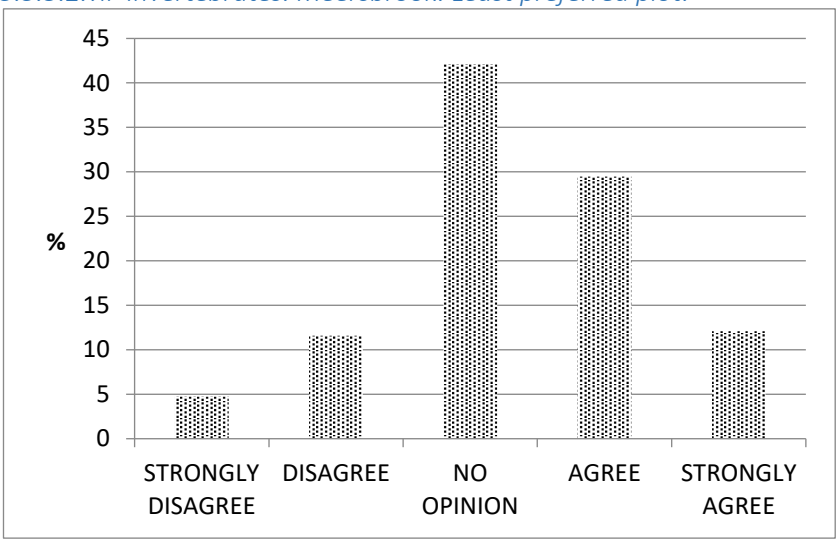


Figure 151: "Do you agree with the statement 'I like the butterflies and other insects I saw in the meadow' for your least favourite plot?"

5.5.3.2.viii Freshness and Fullness. Meersbrook. Least preferred plot.

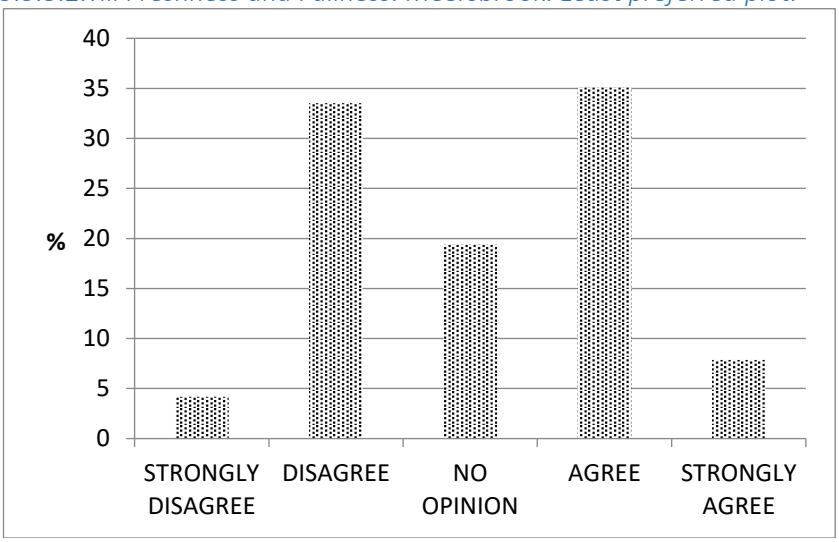


Figure 152: "Do you agree with the statement 'The meadow looks fresh' for your least favourite plot?"

5.5.3.2 (ix) Fullness. Meersbrook. Least preferred plot.

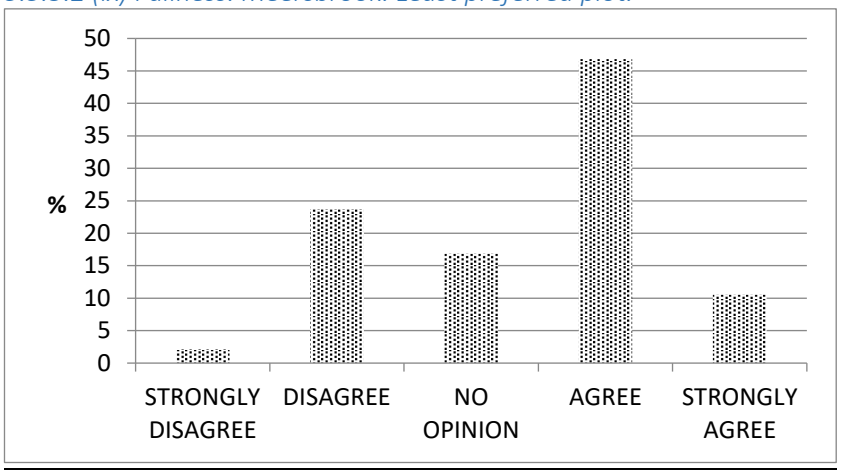


Figure 153: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks full' for your least favourite plot?"

5.5.3.2.x

Deadness. Meersbrook. Least preferred plot.

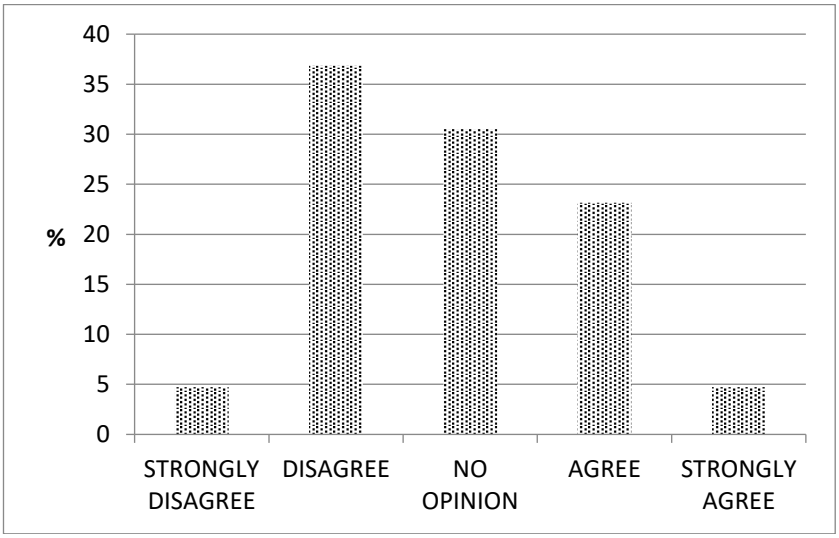


Figure 154: Questionnaire results (% of respondents) for "Do you agree with the statement 'The dead plants spoil the flowers' for your least preferred plot?"

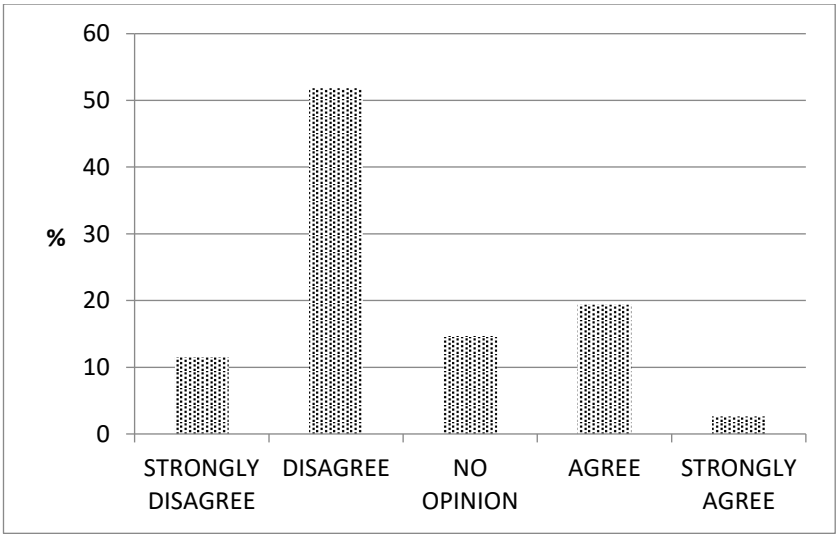


Figure 155: Questionnaire results (% of respondents) for "Do you agree with the statement 'The meadow looks dead' for your least preferred plot?"

5.5.3.2.xi Gappiness, Meersbrook, Least preferred plot

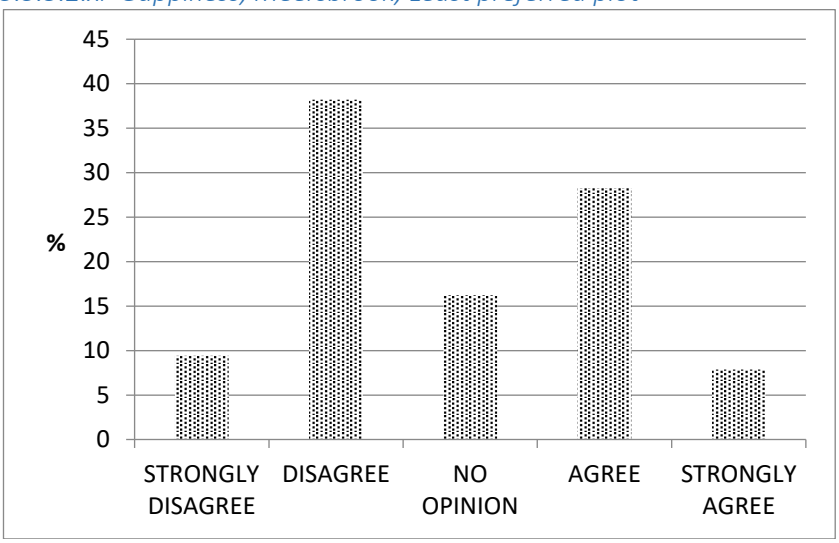


Figure 156: Questionnaire results (% of respondents) for "Do you agree with the statement 'There are lots of bare patches in the meadow' for your least preferred plot?"

5.5.4. Cultural Factors

5.5.4 1. Familiarity. Meersbrook.

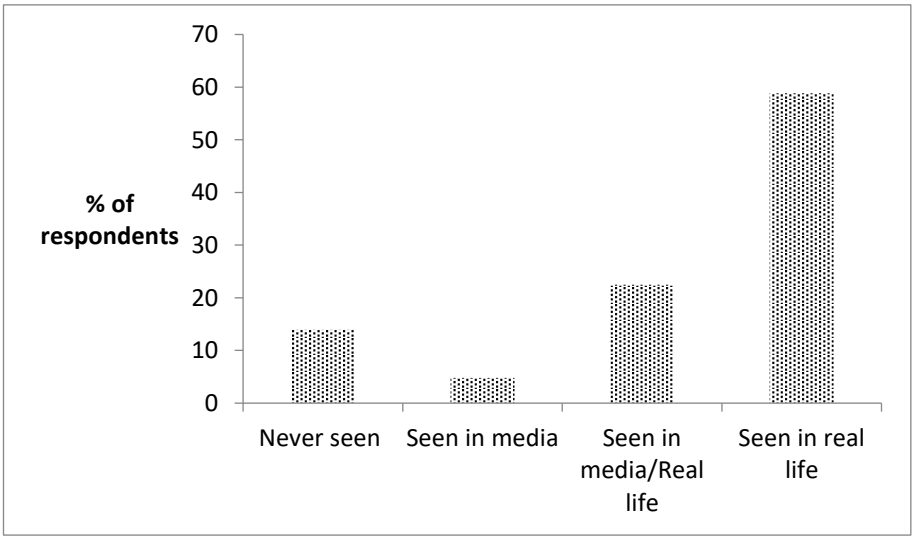


Figure 157: Questionnaire results (% of respondents) for "What is your familiarity with meadow-type planting?"

Respondents were asked about their familiarity with meadow type planting (Figure 157). 58% reported that they had seen it in real life while 13% had no familiarity with it at all. It was thought that familiarity may have some bearing on attitude towards the planting.

5.5.4.2 Membership of wildlife or other organisation

Table 28: Questionnaire results (% of respondents) for membership of wildlife or other organisation

Group	Nº of respondents	
	%	count
Nature/wildlife conservation charity or organision/Horticultural society	23	45
Friends group	2	2
None	75	148

In Sheffield 23 % of respondents said they belonged to an organisation concerned with looking after nature.

5.6 Associations between the questions – Meersbrook Park, Sheffield

In the light of the Ruskin Park findings, age, gender, familiarity and occupation were explored to see if they would have any bearing on people's preferences. The same statistical procedures were taken for Meersbrook Park in Sheffield as had been taken for Ruskin Park in London. Having undertaken the statistical explorations at length for Ruskin Park in London the Meersbrook ones are presented next. There were significant statistical associations found in Meersbrook Park for age, gender, familiarity and occupation.

5.6.2 The statistical associations

5.6.2.1 Associations between age and other variables

In terms of people's behaviour there were no significant differences between the different age groups. In the attitude statements, however, there were significant differences reported by the test. There were significant differences reported for the relationship between age and "How do you feel about the outline shape of the meadow" (p=0.20) and "What is your overall impression of the meadow in the park (p=0.020). The Tukey post hoc tests did not reveal the nature of this difference.

Main Kruskall Wallis (a priori) findings for age.

1. Age and behaviour : No significant findings reported.
2. Age and attitude : Significant association for "How do you feel about outline shape?" and "What is your overall impression?"
3. Age and attitude. Significant association for most preferred plot : "*I like the butterflies and other invertebrates I saw flying over the meadow" and "The meadow looks fresh"*

   Significant association for most preferred plot *"I like the grasses moving in the wind" ." I like the overall amount of colour"*

   I like the balance between the colourful grasses and flowers. The dead plants spoil the flowers.

Table 29: Results of a Kruskall Wallis one way analysis of variance test for Meersbrook park The columns are the variables being tested and the rows the dependent variables.

	Age	**gender**	**occupation**	**familarity**
how often do you come to the park	ns	ns	ns	ns
When do you come to the park	ns	ns	ns	ns
what is your main reason for coming to the park	ns	ns	ns	ns
which other open spaces do you visit regularly	ns	ns	ns	ns
overall impression	*	ns	ns	ns
outline shape	*	ns	ns	ns
most appealing plot	ns	ns	ns	*
least appealing plot	ns	ns	ns	ns
[Most] I like the flower colours/combination of colours	ns	ns	*	ns
[Most] I like the flower colours/combination of colours	ns	ns	ns	ns
[Most] I like the grasses moving in the wind	ns	**	ns	ns
[Most]I like the overall amount of colour	*	ns	ns	ns
[Most] I like the green of the grasses	ns	**	ns	ns
[Most] The meadow looks neat and tidy	ns	ns	ns	ns
[Most] I like the butterflies and other insects I saw in the meadow	*	ns	*	ns
[Most] The meadow looks fresh	*	ns	*	ns
[Most] The meadow looks full	ns	ns	ns	ns
[Least] I like the flower colours/combination of colours	*	ns	ns	ns

[Least] I like the balance between the colourful flowers and grasses	*	ns	ns	ns
[Least] I like the grasses moving in the wind	**	ns	ns	**
[Least] I like the overall amount of colour	ns	ns	*	**
[least] I like the green of the grasses	ns	ns	ns	ns
[Least] The meadow looks neat and tidy	ns	ns	ns	ns
[Least] I like the butterflies and other insects I saw in the meadow	ns	ns	ns	ns
[Least] The meadow looks fresh	ns	ns		ns
[Least] The meadow looks overgrown	ns	ns	ns	ns
[Least] The dead plants spoil the flowers	*	ns	ns	ns
[Least] The meadow looks dead	ns	*	**	*
[least] There are lots of bare patches in the meadow	ns	ns	ns	ns
[least] The meadow looks full	ns	ns	*	ns

Significant interactions (p= 0.05 – 0.01) : *. Very significant interactions (p=0.01 – 0.001) : **. Extremely significant interactions (p=≤0.001) : ***

There were also significant differences in the differences between the answers of the different age groups for how much they agreed with the statement "*I like the butterflies and other invertebrates I saw flying over the meadow in my preferred plot"* (p= 0.012) *"I like the overall amount of colour in my preferred plot"* and for *"The meadow looks fresh in my preferred plot" KW* p=0.024. All of these significant findings were subjected to the Tukey comparison of means post hoc test and the differences that were revealed were between the 18-30s and the 31-45 age groups for one of the statements *"I like the butterflies and other insects I saw in the meadow"* (Tukey score p=0.042). The 31- 45 age group scored significantly higher for this statement than the 18-30s. The other statement in which a significant difference in attitude between the age groups was seen was "The meadow looks fresh" [on my preferred plot] in which the 18-30s (Tukey p-0.014) and 31-45 (Tukey p=0.021) age group all reported a higher score than the over 65s. (see appendix 10 tables 1 and table 5).

As far as their least preferred plots were concerned there was significant difference between the different age groups in relation to the statement "*I like the flower colour/combination of colours*" (KW P=0.035) and *"I like the balance between the flowers and the grasses*" (KW p= 0.041) as well as a very significant

difference for "*The dead plants spoil the flowers*" (0.007). All of these significant differences were explored by way of a post hoc test which:

•For the statement "the dead plants spoil the flowers" there was a significant difference between the under 18 age group and the 56 -65s and the 31-45. While the under 18s *agreed* with this statement (their mean score was .67), groups of the the older respondents disagreed significantly. This echoed results from the Ruskin Park survey.

Table 30: Associations between age ranges and attitudes to invertebrates and to freshness, results of Tukey HSD test using letters. Means with different letters are significantly different.

Age groups↓		[Most] I like the butterflies and other insects I saw in the meadow	Significant differences are denoted by different letters	[Most] The meadow looks fresh	Significant differences are denoted by the means
under 18	Mean	.33	ab	.78	ab
	N	9		9	
	Std. Deviation	.866		.972	
18 - 30	Mean	**.64**	a	**1.07**	**a**
	N	44		43	
	Std. Deviation	.990		.704	
31 - 45	Mean	**1.19**	b	1.02	a
	N	48		48	
	Std. Deviation	.867		.863	
46 - 55	Mean	1.07	ab	.80	ab
	N	41		41	
	Std. Deviation	.787		1.030	
56 - 65	Mean	1.00	ab	.44	ab
	N	18		18	
	Std. Deviation	1.085		1.247	
over 65	Mean	.84	ab	**.21**	**b**
	N	19		19	
	Std. Deviation	.765		1.032	
Total	Mean	.93		.83	
	N	179		178	
	Std. Deviation	.918		.967	

•"I like the balance between the grasses and flowers". There was a significant (Tukey p=0.031) difference revealed between the 18 – 30 (mean score -1.16) and the over 65s (mean score -.37) age group for the statement "*the dead plants spoil the flowers*", as well as between the 18 -30s (mean score -.89) and 31 – 45s (Tukey p=0.036) (see appendix 10 table 2)

•"I like the colours/combination of colours for my least preferred plot". There was a significant difference between the 18-30 and the 31-45s (Tukey p =0.037) and the 18-30s and the over 65s (Tukey p=0.024) (See appendix 10 table 4)

Main post hoc findings for age: Sheffield.

1. 31 – 45 age group have the highest sensibility towards invertebrates, significantly higher than 18 – 30s. Under 18s have the lowest.
2. 18 -30s and 31-45s believe their preferred planting looks fresh. Sig. more than the over 65s.
3. In terms of least preferred plot 18 – 30s disagree the strongest with statement “I like the colours”, significant difference between this group and the over 65s and the 31-45s who disagree less.
4. In terms of least preferred plot the 31-45 and the under 18s agree the strongest with the statement “the dead plants spoil the flowers”
5. In terms of least preferred plot the 18 – 30s disagree more strongly with the statement “I like the flowers combination of flowers than the over 56s and the 31 -45.

Table 31: Associations between age ranges and attitudes to balance between colourful flowers & grasses, and to deadness, and to flower colour .results of Tukey HSD test using letters. Means with different letters are significantly different (see appendix 10 tables

Statements **about least preferred plot** that were reported, by the Kruskall Wallis test to depend on age→ / Different age groups ↓		Means of the likert scores for I like the balance between the colourful flowers and grasses (-2 – 2)		Means of the Likert scores for "The dead plants spoil the flowers" (-2-2)		Means of the likert scores for I like the flowers/ combination of flowers (-2 – 2)	
under 18	Mean	-.89	**ab**	**.67**	**a**	**-1**	**ab**
	N	9		9		9	
	Std. Deviation	.928		.866		.866	
18 - 30	Mean	**-1.16**	**a**	-.16	ab	-1.11	**a**
	N	44		44		44	
	Std. Deviation	.680		1.077		.754	
31 - 45	Mean	**-.55**	**b**	**.00**	**a**	**-.46**	**b**
	N	49		48		48	
	Std. Deviation	1.138		1.031		1.148	
46 - 55	Mean	-.97	**ab**	-.08	ab	-.77	ab
	N	39		40		39	
	Std. Deviation	.743		.917		.986	
56 - 65	Mean	-.56	**ab**	**-.78**	**b**	**-.67**	**b**
	N	18		18		18	
	Std. Deviation	1.247		.548		1.328	
over 65	Mean	**-.37**	**b**	-.32	ab	-.21	**b**
	N	19		19		19	
	Std. Deviation	1.116		.885		1.273	
Total	Mean	-.79		-.13		-.71	
	N	178		178		177	
	Std. Deviation	.990		.988		1.077	

So as far as age is concerned in Sheffield we could tentatively suggest that the 31 – 45s have greater sensibility to wildlife in meadows as their mean score for agreement with the statement on the Likert scale was significantly higher than other groups. We could also suggest that younger people are stricter about their views with significantly more agreeing that the dead plants spoiled the flowers. As

they got older they disagreed more with this statement (ie became a bit more tolerant). Younger adults appeared to be a bit less generous in their judgement about the colour, balance of flowers and grasses in their least favourite plot.

5.6.2.2 Associations between gender and other variables

Regarding gender, there were no significant differences in behavioural patterns reported by the Mann Whitney and Kolgorov Smirnoff tests. However in terms of attitude there were significant differences reported between men and women in relation to two statements about grasses *"I like the green of the grasses*" (p=0.001) and *"I like to see the grasses blow in the wind*" (p=0.001).
Women were significantly more tolerant of the grasses blowing in the wind than the men (indicated by the mean scores).

Main finding. Gender Sheffield Meersbrook park.

1. **Women have stronger preference for grasses than men .**
2. **Women are less likely to say "my least preferred plot looks dead" than men.**

Table 32: Associations between gender and attitudes to grasses moving in the wind

Likert Statements **about preferred plot** that were reported, by the Mann Whitney U test to depend on gender→ Gender groups↓	"I like the grasses moving in the wind" mean score (between -2 strongly disagree to 2 strongly agree)	N	Standard deviation
men	0.68	76	.968
women	1.14	95	.682
Total	0.97	172	.852

Table 33: Associations between gender and attitudes to the green of the grasses

Likert Statements **about preferred plot** that were reported, by the Mann Whitney U test to depend on gender→ Gender groups↓	"I like the green of the grasses" mean score" (between -2 strongly disagree to 2 strongly agree)	N	Standard deviation
men	0.69	76	.935
women	1.15	95	.733
Total	0.97	172	0.848

There was also a significant difference reported for men and women in relation the "the meadow looks dead (Mann Whitney p=0.004). Women agreed with this statement significantly less (MW p=0.014)

Table 34: Associations between gender and attitudes to deadness

Likert Statements **about least preferred plot** that were reported, by the Mann Whitney U test to depend on gender→ Gender groups↓	"The meadow looks dead" mean score (-2 strongly disagree. 2 agree)	N	Standard deviation
men	-0.37	76	1.006
women	-0.48	95	.971
Total	-.41	172	.992

5.6.2.3 Associations between occupation and other variables

The different occupation groups, as previously indicated, were divided into four groups: unskilled, semi-skilled, skilled and not in employment. For the behavioural statements no significant differences were reported. There were, however, some significant differences reported for attitude. For their most

preferred plot there were significant differences between the occupation groups reported in the Kruskall-Wallis test for "*I like the colour and amount of colour*" (0.035), "*I like the butterflies and other invertebrates I saw flying over the meadow*" (0.044) and "*The meadow looks fresh*" (p=0.012). These were explored by way of Tukey and Games Howell post hoc tests, with the following significant differences being highlighted:

• *"I like the overall amount of colour*"

Significant difference between skilled and not in employment (Tukey p=0.014)

•*"I like the butterflies and other insects"*

Significant difference between semi skilled and those not in employment (Tukey p=0.11) See appendix 10 table 7b.

• *"The meadow looks fresh"*

Significant difference between semi skilled and those not in employment (Tukey= 0.029 GH p=0.024) (See appendix 10 table 7c)

Main findings: Occupation: Sheffield

1. The skilled occupation groups were significantly more likely to agree that their preferred plot was fresh and colourful than the not in employment group
2. The semi-skilled group were more likely to agree with positive statements about wildlife than those 'not in employment'.
3. Skilled felt more negative about amount of colour in least preferred plot than unskilled.
4. Not in employment group were more likely to think the meadow looked dead than the other groups.
5. The Unskilled group are more likely to have no opinion about fullness in their least preferred plot than the semi skilled, or any of the other groups.

Table 35: Associations between occupation and attitudes to colour, invertebrates and freshness, Mean responses for the different occupation groups that had reported significant differences

results of Tukey comparison of means test. Letters denote significant differences between the means

Likert statements about preferred plots→ / Occupation groups↓		I like the flower colours/combination of colours in my preferred plot. Mean responses		I like the butterflies and other insects I saw in the meadow. Mean responses		The meadow looks fresh. Mean responses	
unskilled	Mean	1.36	**ab**	1.00	a b	1.00	**a b**
	N	39		39		39	
	Std. Deviation	.778		1.026		.946	
semi skilled	Mean	1.39	**ab**	**1.17**	**a**	**1.06**	**a**
	N	54		54		54	
	Std. Deviation	.787		.720		.878	
skilled	Mean	**1.66**	**a**	1.00	a b	.86	**a b**
	N	29		29		28	
	Std. Deviation	.484		.802		1.044	
not in employment	Mean	**1.24**	**b**	**.60**	**b**	**.53**	**b**
	N	46		47		47	
	Std. Deviation	.673		1.056		.929	
Total	Mean	1.39		.94		.86	
	N	168		169		168	
	Std. Deviation	.717		.930		.954	

For the occupation groups, those that were not in employment, which included retired people and carers of children, reported lower scores than the semi-skilled group for some of the statements about their preferred meadow, notably in relation to freshness and wildlife and colour. This probably needs some further investigation as the 'not in employment' group also included carers of children and retired people.

There were more significant differences in attitude of the different occupation groups to their least favourite plot reported by the Kruskall wallis test. **"***In my least favourite plot I like the overall amount of colour*" KW = 0.025. **"***My least favourite plot looks full* " KW p=0.046. And "*my least preferred plot looks dead*" (0.001).

Post hoc comparison of means revealed significant differences regarding the following statements:

• **"** *In my least favourite plot I like the overall amount of colour*"; there was a significant difference between the **unskilled** and semi **skilled** group (Tukey was non significant but the Games Howell = 0.048). We can see in the comparison of the means tables that the unskilled group disagreed less (the negative scores are disagreement) than the skilled group. (see appendix 10 table 7e)

• *"My least favourite plot looks dead*". There was a **very** significant difference between the unskilled and the not in employment (p=0.001) and between the semi skilled and the not in employment. (p=0.040) and between the skilled and the not in employment (0.006). Looking at the means of the not in employment group we can see that they were the ones who were disagreed the least about this "deadness". The not in employment group comprised retired people and full time parents. (see appendix 10 table 7d)

• For *" my least favourite plot looks full*" there was a significant difference between the answers for the unskilled and the semi skilled (p=0.046). The semi skilled agreed with this statement significantly more than the unskilled. (APPENDIX 10 TABLE 7F)

Table 36: Associations between occupation and attitudes to colour, deadness and fullness in the least preferred plot. Mean responses for the different occupation groups that had reported significant differences. Letters next to the mean scores denote significant differences

Statements that yielded significant results in Kruskall Wallis tests for lest preferred plot → / Occupation groups↓		Mean responses to the statement in my least preferred plot I like the overall amount of colour		Mean responses to the statement"in my least preferred plot The meadow looks dead		Mean responses to the statement "in my least preferred lot the meadow looks full	
unskilled	Mean	**-.46**	**a**	**-.85**	**a**	**.00**	**a**
	N	39		39		39	
	Std. Deviation	1.022		.961		1.051	
semi skilled	Mean	**-1.00**	**b**	**-.55**	**a**	.56	**b**
	N	55		55		55	
	Std. Deviation	.903		.939		.977	
skilled	Mean	-.90	**ab**	**-.79**	**a**	.59	**ab**
	N	29		29		29	
	Std. Deviation	.939		.902		1.086	
not in employment	Mean	-.57	**ab**	**-.02**	**b**	.41	**ab**
	N	47		47		46	
	Std. Deviation	1.098		1.093		1.024	
Total	Mean	-.74		-.51		.40	
	N	170		170		169	
	Std. Deviation	1.011		1.028		1.042	

5.6.2.4 Associations between familiarity (with meadow-type planting) and other variables

When the familiarity variable was explored using the Kruskall Wallis test it pointed to a significant relationship between familiarity and preferred plot (p=0.034). The Tukey post hoc hsd test revealed a significant difference between the group who had never seen meadow planting and the group who had seen it in real life (Tukey p-0.021 shown in appendix 10). As can be seen in the table of results (Table 37), those who had never seen meadow planting before mostly voted for plot number 1. Preference was tabulated and shown graphically. As their experience of this kind of planting increased their preference for plots 6 and 7 increased. Of those

that professed to have seen meadow planting before, almost half did not vote for the plot with the big yellow toadflax in it, but for plots 5, 6 and 9.

Main finding : Familiarity. Meersbrook.

1. **People with little experience of this type of planting preferred the most colourful plot.**
2. **People who had experience of this type of vegetation expressed a stronger preference for grasses even in their least preferred plot than other groups.**
3. **People who had seen this planting in real life were less negative about the colour content of their least preferred plot**

Table 37: Association between familiarity and preference a breakdown of preference in the groups (N).

Plot number		What was your familiarity with meadow-type planting before seeing this planting				
		never seen	seen in media	seen in media/real life	seen in real life	Total
Which area of the meadow do you find most appealing?	1	20	5	25	55	105
	2	1	0	1	1	3
	3	1	0	1	4	6
	4	0	0	1	0	1
	5	0	0	1	0	1
	6	1	0	5	15	21
	7	0	2	5	13	20
	8	0	1	1	1	3
	9	2	1	1	18	22
	Total	25	9	41	107	182

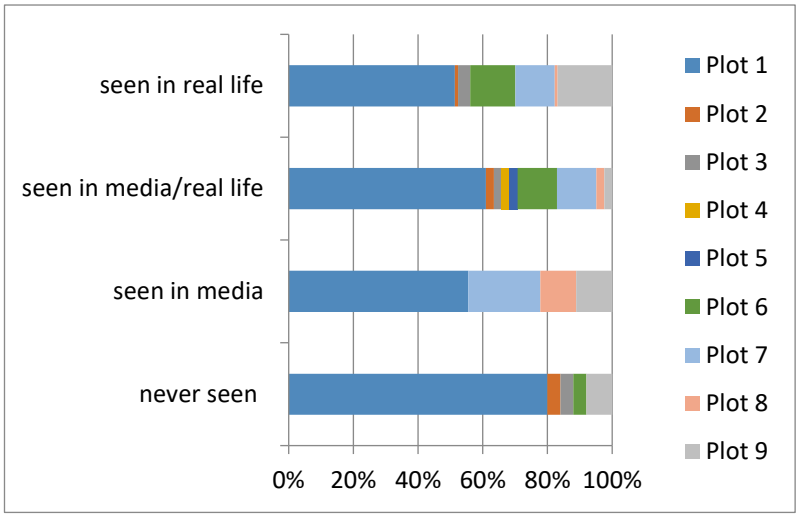


Figure 158: Graph showing breakdown of people's preferred plot according to their familiarity with this type of planting (significant difference had be flagged by the Kruskall Wallis test p=0.034) The tukey hsd test pointed to a difference between the group who had never seen the planting and the group who had experienced it in real life.

In the exploration of associations between people's attitudes and their familiarity with meadow type planting there were no significant results for people's preferred plots but there were for their least preferred:

- [least preferred plot] I like to see the grasses blowing in the wind (p=002)
- [least preferred plot] I like the overall amount of colour(p=0.007)
- [least preferred plot the meadow looks dead] p=0.028

Tukey post hoc tests were undertaken on these three statements:

- For the statement *' I like to see the grasses blowing in the wind'* there were significant differences between those that had seen the meadow in the media and real life and those that had seen it just in real life (Tukey p=0.004).
- For the statement "*I like the overall amount of colour*" in my least preferred plot there was a difference reported between those who had seen it in the media and real life as well as those who had seen it in real life (p=0.05)
- For the statement "*The meadow looks dead*" there were no significant differences revealed by the Tukey test between the familiarity groups.

It is worth bearing in mind that for the familiarity statistics the group sizes were unequal which was factored into the SPSS analysis using the harmonic mean. (See appendix 10 table 7g)

Table 38: Mean differences of the attitudes of the different occupation groups to two statements "I like the grasses moving in the wind" (Tukey p=0.004) and "I like the overall amount of colour" (Games Howell p=0.048)

What was your familiarity with meadow-type planting before seeing this planting		In my least preferred plot I like the grasses moving in the wind		In my least preferred plot I like the overall amount of colour	
never seen	Mean	.19	**ab**	-.38	**ab**
	N	26		26	
	Std. Deviation	1.096		1.235	
seen in media	Mean	.56	**ab**	-.33	**ab**
	N	9		9	
	Std. Deviation	.726		1.118	
seen in media/real life	Mean	**-.02**	**a**	**-1.19**	**a**
	N	42		42	
	Std. Deviation	1.115		.505	
seen in real life	Mean	**.65**	**b**	**-.69**	**b**
	N	110		110	
	Std. Deviation	.841		1.002	
Total	Mean	.43		-.74	
	N	187		187	
	Std. Deviation	.978		.988	

5.6.2.5 Results summary.

There appeared to be some influence of age on attitude, notably towards wildlife (the 31 – 45 age group may have had a greater sensibility towards wildlife). Younger adults had different views about "freshness" than older adults. For the least preferred plots younger people (under 18s) and the 31- 45s were in agreement that the dead plants spoilt the flowers (despite the fact that there were not really any dead plants in the plot). On the idea of balance the 18 -30s disagreed the most about there being balance between the colours. Looking at

the means, older people come across as slightly more tolerant of this type of planting, not less.

Women felt more favourably towards grasses and movement than men and were in greater disagreement that the meadow looked “dead”.

As far as occupation was concerned the “not in employment group” of which a large number were retired people and people looking after children, as well as students, reported less agreement with certain favourable qualities about their preferred plot such as wildlife, flower colours and freshness. Likewise they were the most in agreement with the statement “*The meadow looks dead*” coming across as generally a bit more negative (although this was not reported in the SPSS exploration general attitude towards the meadow statements).

Familiarity appeared to have an influence over preference and attitude. It did appear from the results that the less familiar a respondent was the more likely he/she was to choose plot number 1, the most obviously colourful one. Preference for plots 6, 7 and 9 were much greater for those with real life experience of meadow planting. Those who had seen meadow planting in real life had a more favourable attitude towards grasses, even for their least preferred plot. These findings will be further discussed Chapter 7.

5.7 Comparing the Results for Attitudes (Sheffield & London)

The next part of these results throws a cursory look at the results for the two parks side by side. Responses have been represented graphically side by side to see the similarities and differences in the shape of the responses. This is really an exploration of the shape of two sets of survey responses to similar questions about two very different pieces of vegetation. Although much of this data has been shown already, a short comparative discussion was thought to be useful.

5.7.1 Preferred Plots. Colour.

In Sheffield there was one clear winner in terms of preference. Number 1 plot was the only plot with a very big colourful flower in it and 58 percent of the respondents said that it was their favourite. Numbers 6, 7 and 9 all had a few colourful flowers in them and quite a significant 30 % of respondents preferred these plots. (these are shown in appendix 9). Preference in London was divided between two similar looking plots but that were not the most colourful. Plots 4 and 5 shown in appendix 8. A good proportion of the Sheffield respondents made the simple choice between grass and colour, with another 30% making more nuanced choices. The Ruskin park respondents had many different floriferous plots to choose from and opted for the plots with the most variety of colour and

also evidence of lifecycles, with senescence, flowering and buds all happening within the same preferred plots.

Preferred plots

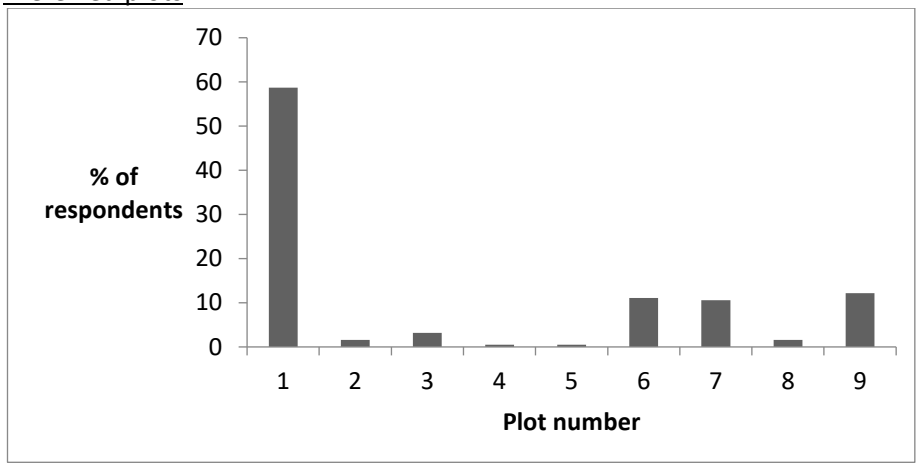


Figure 159: Preferred plot, Meersbrook Park, Sheffield

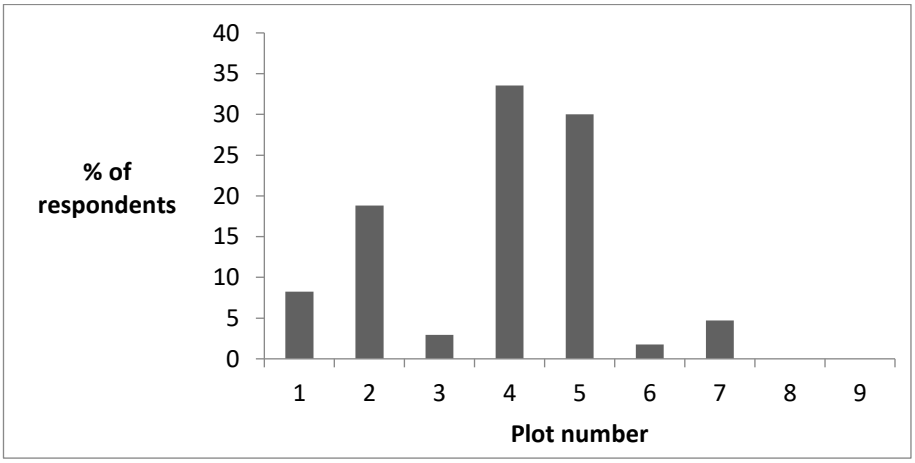


Figure 160: Preferred plot, Ruskin Park, London

Least preferred plots

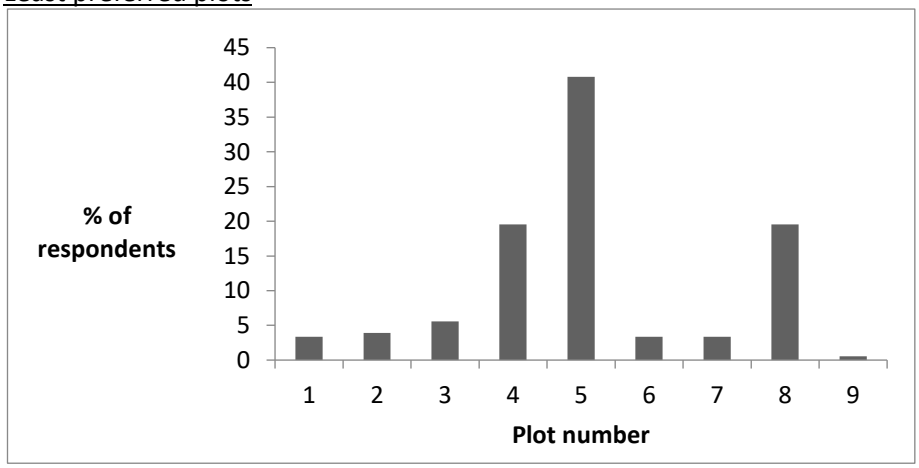


Figure 161: Least preferred plot, Meersbrook Park, Sheffield

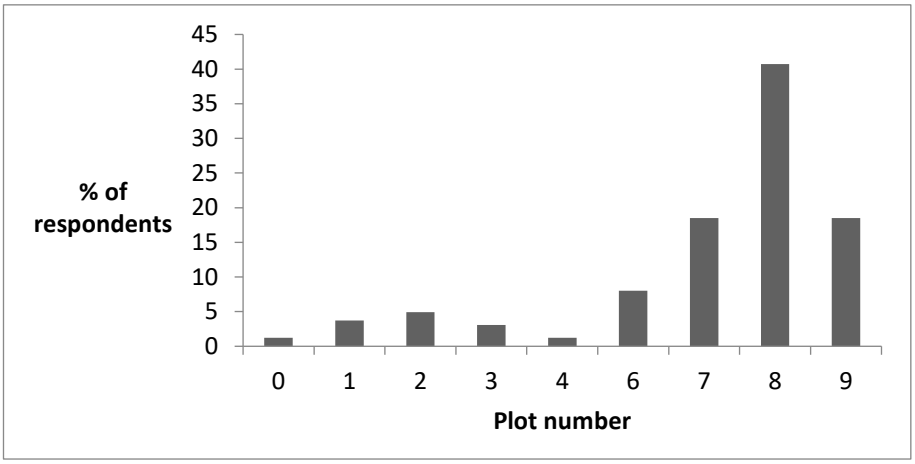


Figure 162: Least preferred plot, Ruskin Park, London

The two least preferred plots in Sheffield were grassy and lacking in colour. Number 5 which was the least favourite amongst the respondents also had a large dock leaf (albeit without the brown seed head) on it. In London the least preferred plots were the most gappy ones.

5.7.2 Attitudes to the plots themselves – preferred plots.

A comparison of responses to the same questions, but about very different looking areas of naturalistic vegetation.

5.7.2.1 Colour

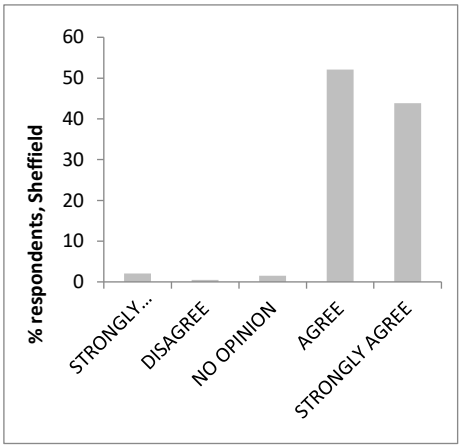


Figure 163: Do you agree with the statement 'I like the colours/combination of colours' in relation to your preferred plot? Meersbrook Park, Sheffield

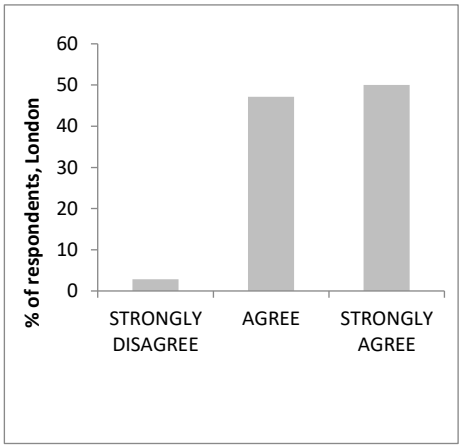


Figure 164: Do you agree with the statement 'I like the colours/combination of colours' in relation to your preferred plot?

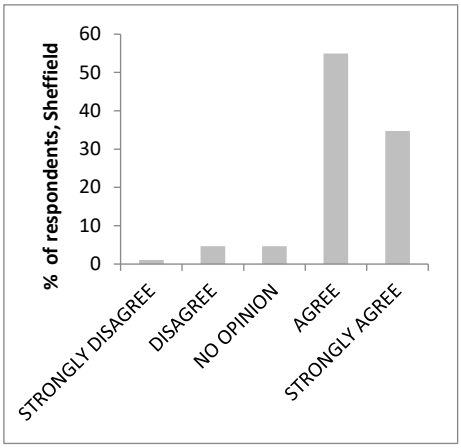


Figure 165: Do you agree with the statement 'I like the balance between the colours' in relation to your preferred plot? Meersbrook Park, Sheffield

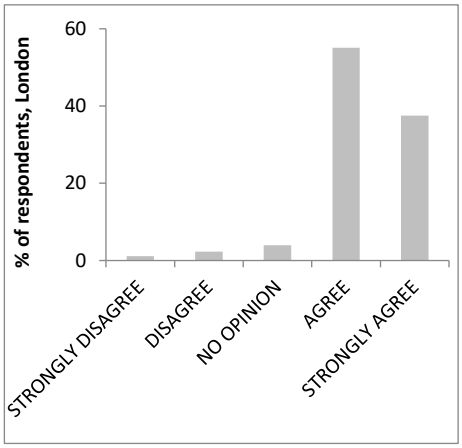


Figure 166: Do you agree with the statement 'I like the balance between the colours' in relation to your preferred plot? Ruskin Park, London

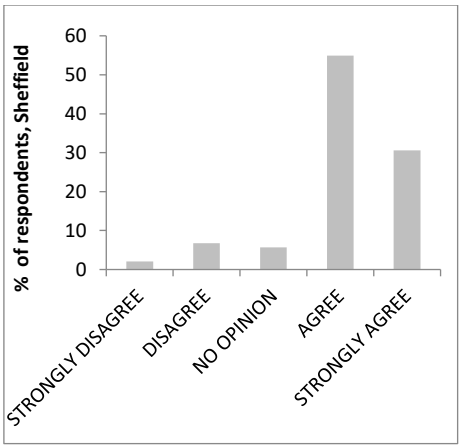


Figure 167: Do you agree with the statement 'I like the overall amount of colour ' in relation to your preferred plot? Meersbrook Park, Sheffield

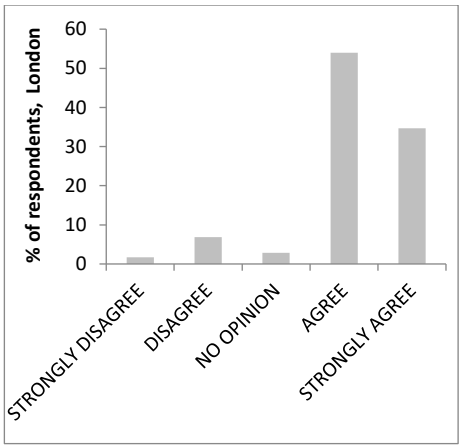


Figure 168: Do you agree with the statement 'I like the overall amount of colour' in relation to your preferred plot? Ruskin Park, London

For the three questions about colour the responses followed a very similar pattern in both London and Sheffield. (95 and 92%, respectively, agreeing that they liked the overall amount of colour, 92% and 90% that they liked the balance between the colours and 88% and 85 % agreeing that they liked the overall amount of colour for their preferred plots). Obviously the plots they were talking about were very different.

5.7.2.2 Neatness

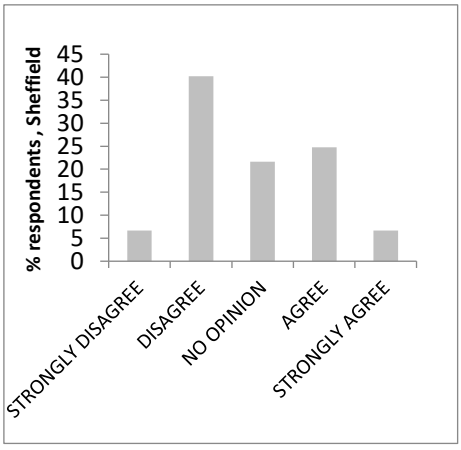


Figure 169: Do you agree that the plot looks neat and well tended for your preferred plot? Meersbrook Park, Sheffield

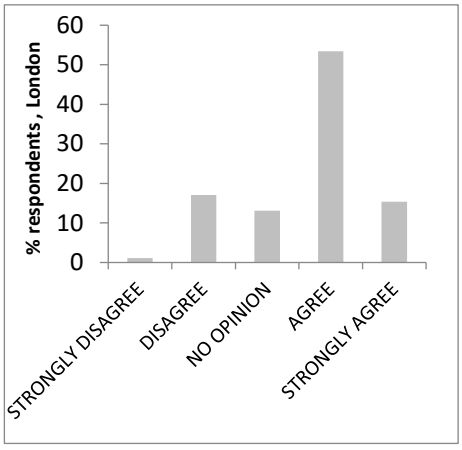


Figure 170: Do you agree that the plot looks neat and well tended for your preferred plot? Ruskin Park, London

On the question of neatness the responses differed. In Sheffield disagreement that it looked neat and well tended was the majority view, while in London 58% agreed with the statement that it looked neat and well tended. This may have been due to the layout of the meadow in London. Plots had been sown into a very geometric layout which may have instilled a feeling of order. The transition from amenity mown grass to naturalistic planting was much less defined in Sheffield. This will be discussed in chapter 7.

5.7.2.3 Invertebrates

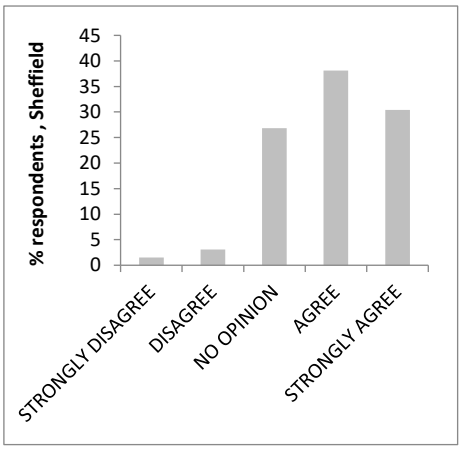


Figure 171: Do you agree with the statement 'I like the butterflies and other invertebrates I saw in my preferred plot'? Meersbrook Park, Sheffield

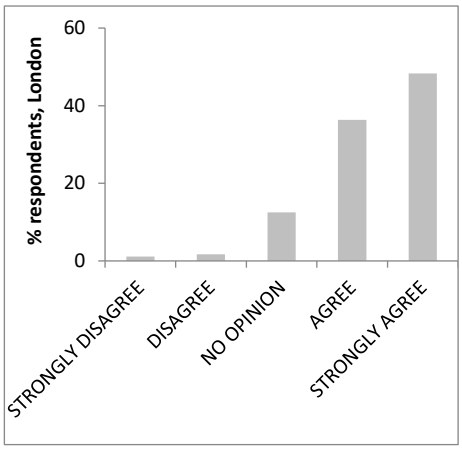


Figure 172: Do you agree with the statement 'I like the butterflies and other invertebrates I saw in my preferred plot'? Ruskin Park, London

On the question of butterflies and other insects, while there was majority agreement with the statement about butterflies and other insect this was stronger in London (84 % in comparison to Sheffield's 68 %). The sheer number of flowers in Ruskin Park had actually drawn a lot of insects from this built-up but suburban area which were heavily in evidence on the day of interviewing. In Sheffield there were lots of flying things above the meadow but they were not visible. The weather in Sheffield during the week of interviewing was worse than it had been in London which may have contributed to the less enhanced insect presence over the meadow. Also there really were a lot less flowers.

5.7.2.4 Freshness

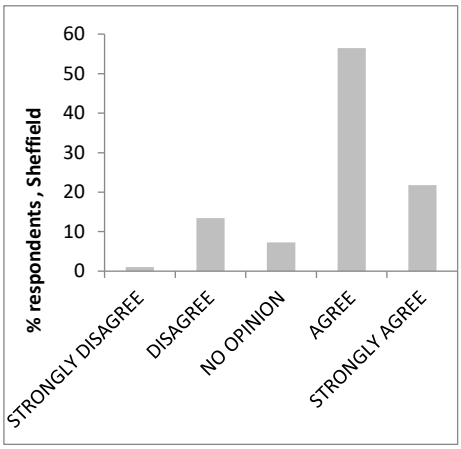


Figure 173: Do you agree with the statement 'The meadow looks fresh' for your preferred plot? Meersbrook Park, Sheffield

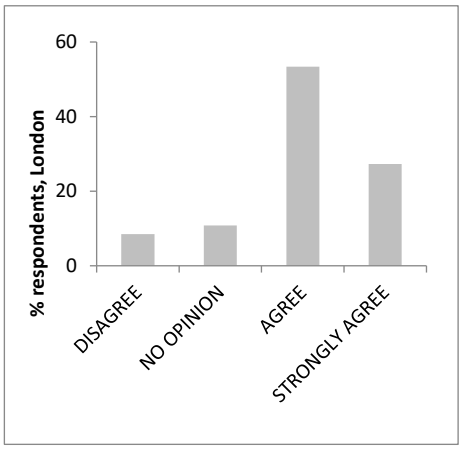


Figure 174: Do you agree with the statement 'The meadow looks fresh' for your preferred plot? Ruskin Park, London

Between 75 and 80 % of respondents agreed or strongly agreed that their preferred plot looked "fresh" for both sites

5.7.2.5 Fullness

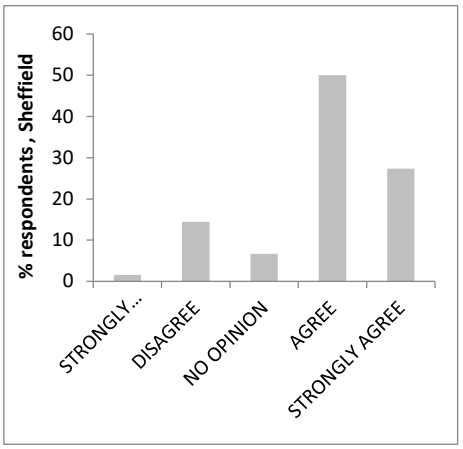


Figure 175: Do you agree with the statement the meadow looks full for your preferred plot? Meersbrook Park, Sheffield

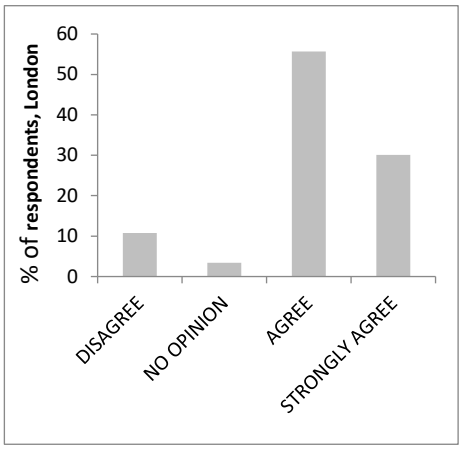


Figure 176: Do you agree with the statement the meadow looks full for your preferred plot? Ruskin Park, London

The shape of these results is similar for both Sheffield and London, it was a fairly innocuous statement. Mostly agreement but with a notable amount of disagreement (14 and 10% respectively)

5.7.3 Attitudes to the plots themselves: least preferred plots.

5.7.3.1 Colour

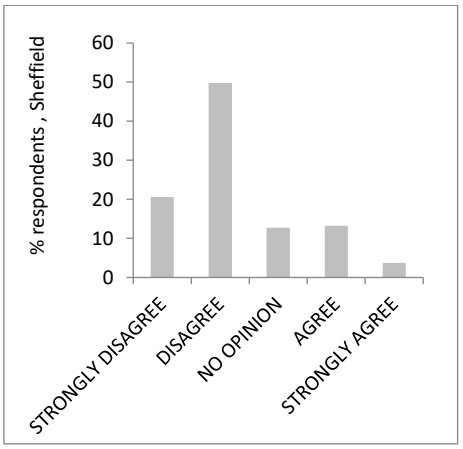


Figure 177: Do you agree with the statement 'I like the colours/combination of colours for my least favourite plot'? Meersbrook Park, Sheffield

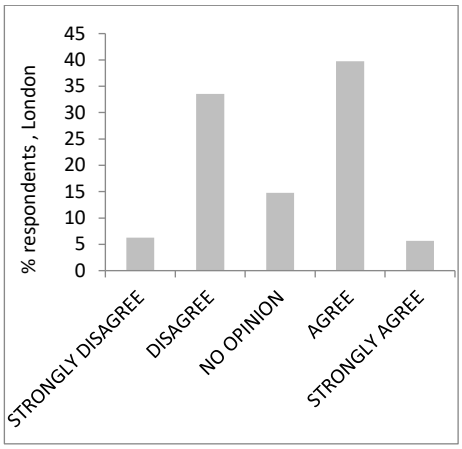


Figure 178: Do you agree with the statement 'I like the colours/combination of colours for my least favourite plot'? Ruskin Park, London

As far as colour was concerned, in people's least preferred plot in Sheffield the only colour perceptible to the respondents was Green. However in plots 8 and 9

there was flower colour in the form of few escholzias in flower and early Cosmos. This is reflected in these results.

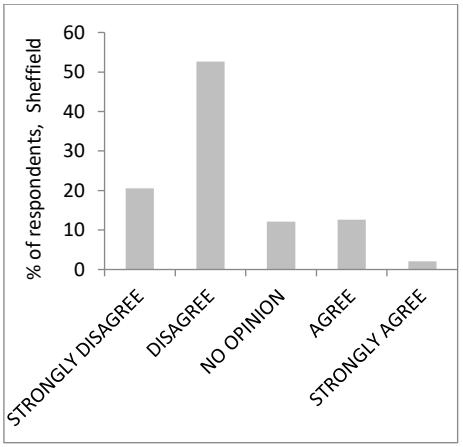


Figure 179: Do you agree with the statement 'I like the balance between the grasses and flowers'? Meersbrook Park, Sheffield

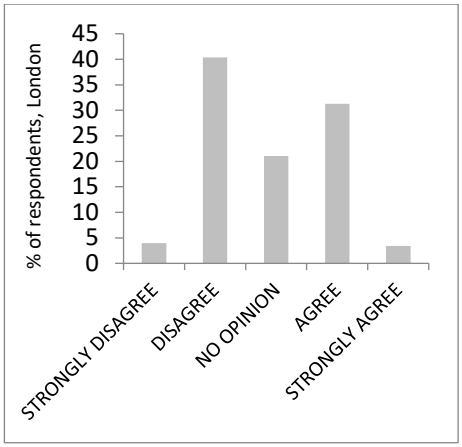


Figure 180: : Do you agree with the statement 'I like the balance between the colours? Ruskin Park, London

On the question of balance, more than half of the Sheffield respondents disagreed with the statement about balance for their least preferred plot. There was a very small amount of colour in the Ruskin Park least preferred plots which was reflected in agreement with this statement.

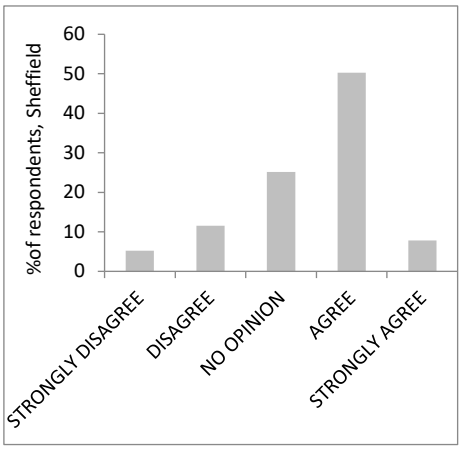


Figure 181: Do you agree with the statement 'I like the overall amount of colour' for your least favourite plot? Meersbrook Park, Sheffield

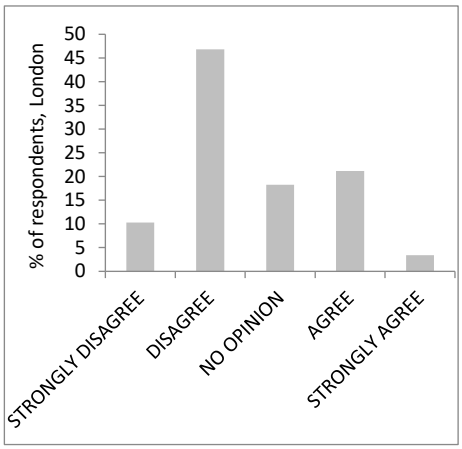


Figure 182: Do you agree with the statement 'I like the overall amount of colour' for your least favourite plot? Ruskin Park, London

In Sheffield there there was a lot of colour, but that colour was bright green. This was reflected by almost 60 % agreeing with this statement. In London, again, there was colour, but hardly any of it; mostly gaps, so respondents disagreed.

5.7.3.2 Invertebrates

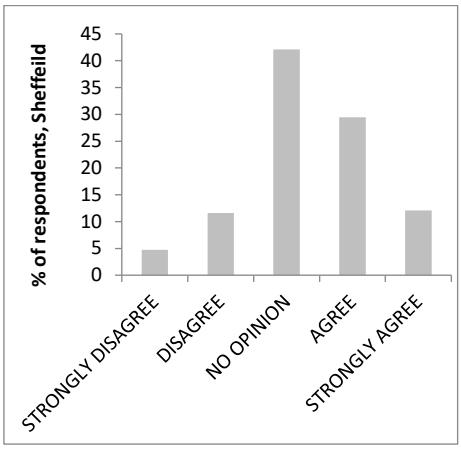


Figure 183: Do you agree with the statement 'I Like the butterflies and other insects I saw in the meadow' for your least favourite plot? Meersbrook Park, Sheffield

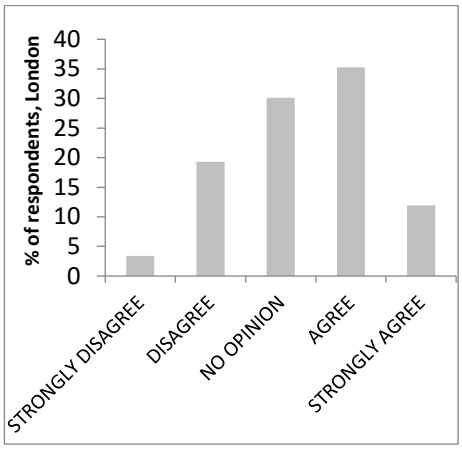


Figure 184: Do you agree with the statement 'I Like the butterflies and other insects I saw in the meadow' for your least favourite plot? Ruskin Park, London

On this question of invertebrates there was an unusually high "no opinion" representation in the results. Perhaps if people haven't actually seen any insects they are unwilling to actually disagree that they are there. It could be argued that people are not yet confident to give any opinions in this area and feel more comfortable to offer "no opinion". The central tendency bias considered in the methodology could be relevant to these results.

5.7.3.3. Freshness

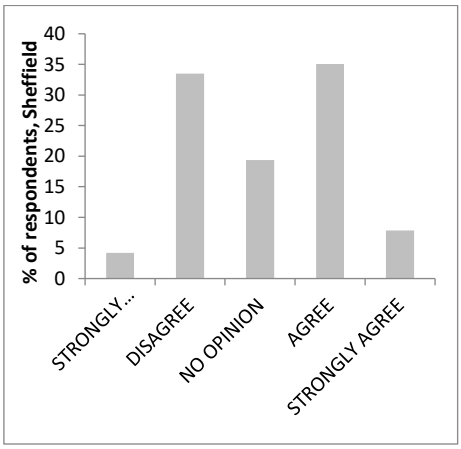


Figure 185: Do you agree with the statement 'The meadow looks fresh' for your least favourite plot? Meersbrook Park, Sheffield

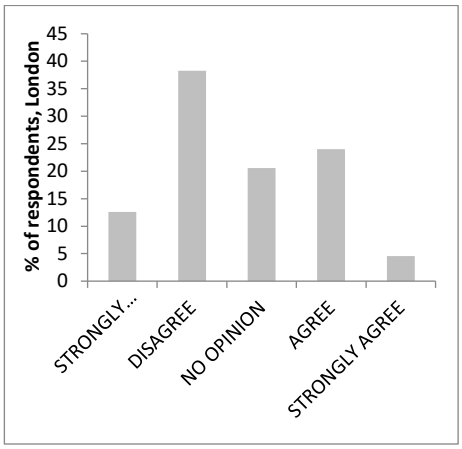


Figure 186: Do you agree with the statement 'The meadow looks fresh' for your least favourite plot? Ruskin Park, London

These results are quite similar with both sets of respondents disagreeing about freshness. “Freshness” would be a quality worth exploring. Some of the Sheffield respondents deemed their least favourite green and grassy plot to look fresh. Some did not.

5.7.3.4 Deadness

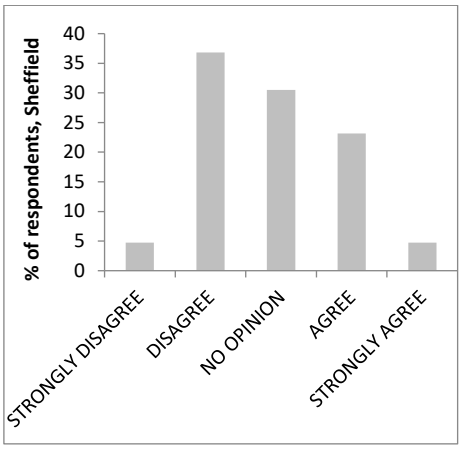


Figure 187: Do you agree with the statement ‘the dead plants spoil the flowers’ for your least favourite plot? Meersbrook Park, Sheffield

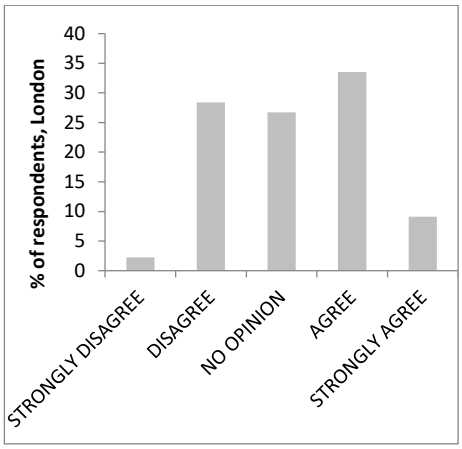


Figure 188: Do you agree with the statement ‘the dead plants spoil the flowers’ for your least favourite plot? Ruskin Park, London

Again on any question assuming presence of flowers Sheffield and Ruskin respondents were compelled to disagree.

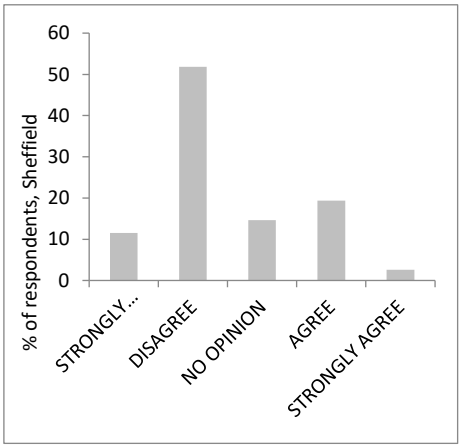


Figure 189: Do you agree with the statement ‘the meadow looks dead’ for your least favourite plot? Meersbrook Park, Sheffield

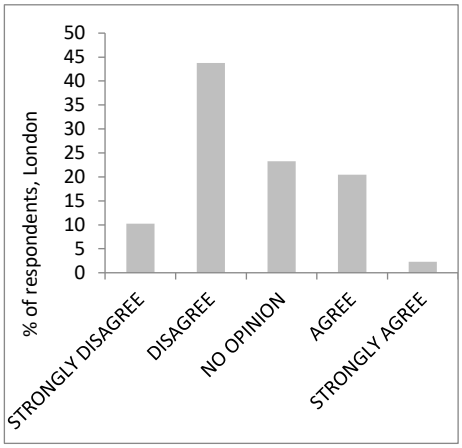


Figure 190: Do you agree with the statement ‘the meadow looks dead’ for your least favourite plot? Ruskin Park, London

Deadness did not seem to be notion that respondents engaged with in relation to their least favourite plot.

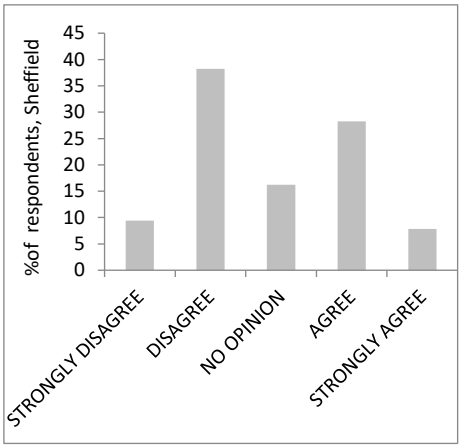


Figure 191: Do you agree with the statement 'there are lots of bare patches in the meadow' for your least favourite plot? Meersbrook Park, Sheffield

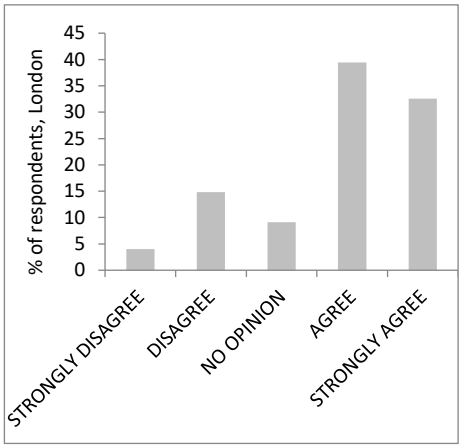


Figure 192: Do you agree with the statement 'there are lots of bare patches in the meadow' for your least favourite plot? Ruskin Park, London

As one might expect of the Ruskin park respondents, many of them agreed with this statement in relation to their least favourite plot. In the Sheffield least preferred plots there were no gaps however 35% agreed with this statement. This may have been due to some kind of "negative tendency bias" (central tendency bias was discussed in the methodogy).

5.7.4 Attitudes to the Planting

5.7.4.1 Appropriateness

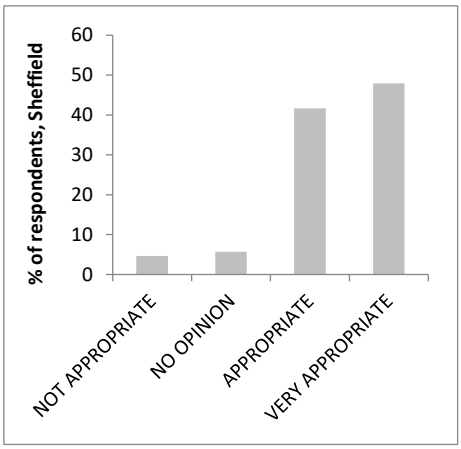


Figure 193: Do you think this type of planting is appropriate in the park? Meersbrook Park, Sheffield

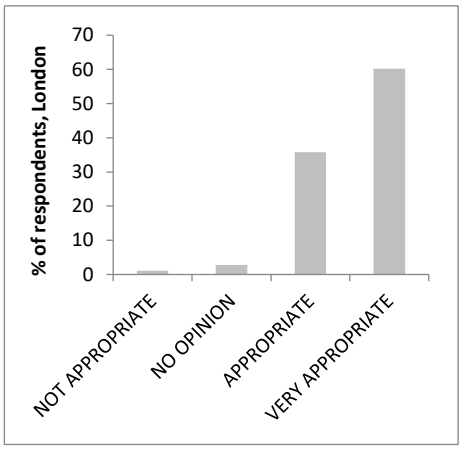


Figure 194: Do you think this type of planting is appropriate in the park? Ruskin Park, London

Very high percentages in both parks believed that this type of planting was appropriate.

5.7.4.2 Preference to other types of planting

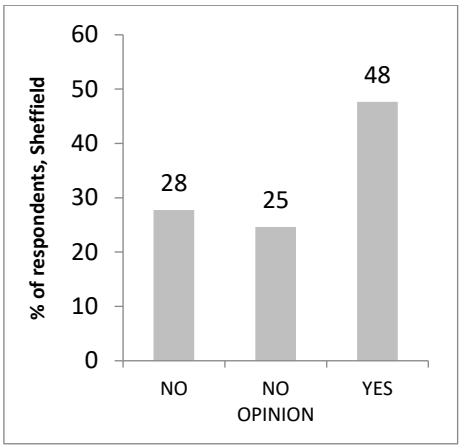


Figure 195: Do you prefer this type of planting to other planting in the park? Meersbrook Park, Sheffield

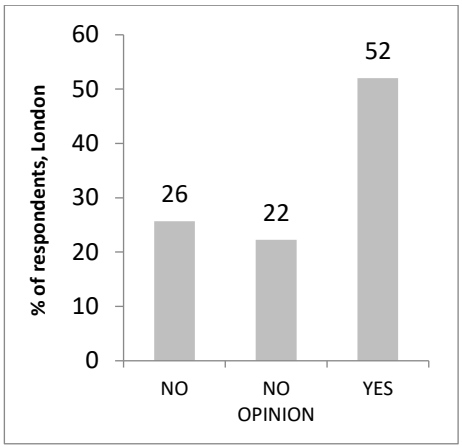


Figure 196: Do you prefer this type of planting to other planting in the park? Ruskin Park, London

Approximately half the respondents said that they did actually prefer this planting to other types of planting.

5.7.4.3 Familiarity

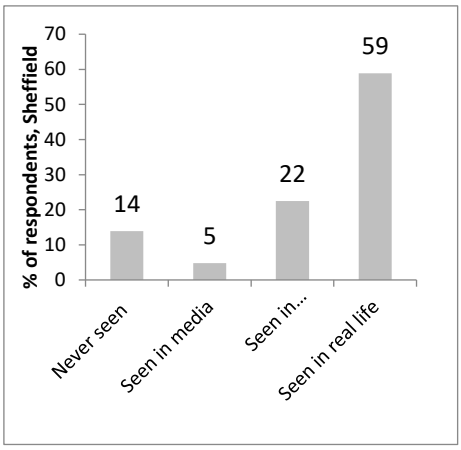


Figure 197: What is your familiarity with meadow-type planting? Meersbrook Park, Sheffield

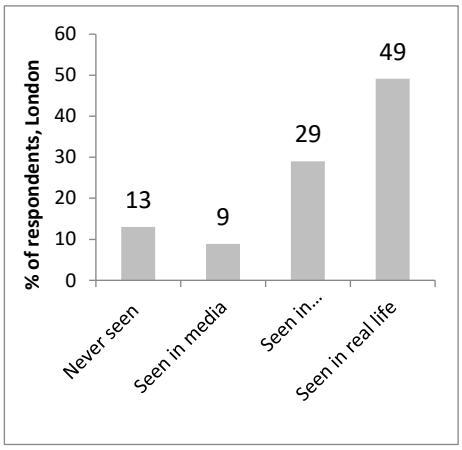


Figure 198 What is your familiarity with meadow-type planting? Ruskin Park, London

The Sheffield residents had a bit more familiarity with this type of planting than the London respondents. This is to be expected as Sheffield is situated in the middle of a National Park, while Ruskin Park, in Camberwell in South London, is not.

5.8 Questionnaire Comments

5.8.1 Summary of park comments

At the end of the questionnaire survey the respondents were asked to comment. Approximately half of the respondents did comment): 49% of the Meersbrook park residents provided a written comment at the end of the survey. 46 % of the Ruskin Park respondents.

The methodology used to analyse the comments was directed content analysis. This is an analysis technique that is used to analyse content when there is a theory and literature about a subject. (Other approaches are conventional content analysis and summative content analysis). The goal of a directed approach to content analysis is to validate or extend conceptually a theoretical framework or theory. In the case of this study the theory was around approval or otherwise of NP generally. Key concepts were identified to create initial coding categories. The comments were organised and listed in Excel. The comments were categorised into Unqualified approval, Qualified approval, Constructive criticism, Unconstructive criticism, No comment and Neutral comment. Almost half of the comments of the respondents offered unqualified approval. One of the problems of directed content analysis is researcher bias. The researcher approaches the data with informed but, nonetheless, strong bias. Researchers might be more likely to find evidence that is supportive rather than non supportive of a theory. It was thought that in this particular instance, given the brevity of the comments, researcher bias would not be a problem. Interpretation of emotion and probing, two things that can contribute to researcher bias were not part of this dataset.

A typology of comments was created in an effort to gain an understanding of how respondents felt, generally, about the vegetation they were being asked about.

Table 39: Summary of comment types for both parks

Type of comment	Sheffield (N)	%	London (N)	%
Constructive criticism	18	9.28	20	11.63
Unconstructive criticism	13	6.70	0	0.00
Qualified approval	20	10.31	15	8.72
Unqualified approval	48	24.74	50	29.07
Neutral comment			8	4.65
No comment	95	48.97	79	45.93
Total	194		172	

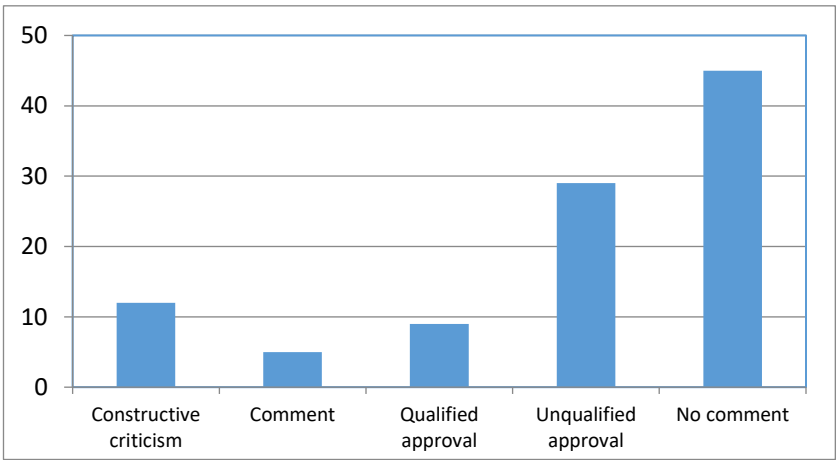


Figure 199: General comment types, Ruskin Park, London

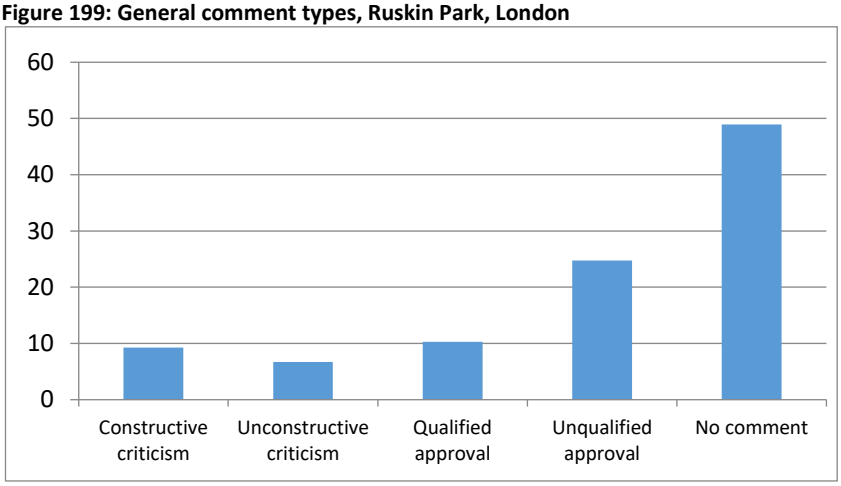


Figure 200: General comment types, Meersbrook Park, Sheffield

Some examples of comments of each type are given below.

Unqualified approval (UA)

"Love it, keep it up", "beautiful…more please" (London)

Qualified approval (QA)

"The meadows give a fresh and beautiful feel to the park but I feel there are too many yellow flowers that overpower the other flowers." (London)

"lovely feature place more benches here so that we can sit and enjoy them"

Constructive criticism

"It would be good mixed with some more formal type of planting….evergeens"

"I love meadows but maybe there are too many small meadows how about having 2 large meadows in this space"

"The meadow planting is welcomed and pleasant site given that the space lies fallow and empty most of the year "

Unconstructive criticism

"Plots 4, 5 and 6 look drab and boring"

"Go and see the poppies by Matalan they are lovely"

"I don't think any of them are different I have seen much better"

Neutral comments

"I have seen this before in France"

5.8.2 Ruskin Park (London) comments

Respondents, when commenting about the annual meadow in Ruskin park, as we have seen in the profile of the results in Chapter 5, were **generally positive** about the planting. Of the 55 percent of respondents who actually commented, a good proportion - more than half - offered unqualified enthusiasm using words such as "love" and "beautiful". Amongst the other comments were some interesting, and varied, observations, such as that there was **too much yellow**, or that it was nice to see **wildlife.** They also mentioned the "surprise" factor and how unexpected it was. Many offered ideas for improvements, which were wide ranging; from

"It would be nice to see more variety" (London)

to comments about the aesthetics of the planting and ways it could be improved

"we would have liked more red flowers and rounder shapes" (London)

There were several comments about the site needing watering. This may have been due to the exposed patches of bare ground.

"Need watering."(London)

In fact many of the respondents, and this was the same for Meersbrook Park, seemed engaged on a **creative and maintenance** level, offering support and unsolicited advice. They showed a level of engagement with the maintenance of their park that belied the lack of agency any of them actually had over it. They had a strong sense of ownership over their local park and this came across in the comments. The **regularity** of their visits was something that came across in many

of the comments. A lot of them mentioned that it was nice to finally see something being done in this area, the Bowling Green, which had started to look a bit neglected. Very few respondents were critical about the planting or offered any negative comments about the park in general. Quite a few of the comments mentioned that they liked variety in the park and that meadows were part of a suite of features that they wanted to see. Sometimes approval was assumed and constructive criticism offered such as improvements to the shape of the planting or seating.

The high level of engagement with the planting may have been due to the notices that had been put up at the entrances to the Bowling Green, bearing the academic logos of Sheffield University and the ESRC. The respondents in London, as shown earlier, were highly educated in the main and maybe this project appealed to their socio-aesthetic sensibilities.

Messiness was almost not mentioned. Negativity was based around there being too much yellow and the gaps in places. One comment mentioned nettles by name and said that they didn't like them (there was one nettle in one of the plots). Somebody also mentioned that they would have preferred if plot number 9 had not been weeded; they preferred weeds to gaps. Although this was just one comment, it does resonate with the Hands and Brown (2002) finding that sparseness is negatively correlated with acceptance of NP.

5.8.3 Meersbrook Park (Sheffield) comments

The Meersbrook Park comments were also positive. The content took a different shape. They did not mention change (that it was nice to see something growing at last), but they used words like interesting and expressed general approval about the idea of doing this kind of vegetation management.

A good number of comments said that in theory it was a good idea, but suggested ways in which the planting could be improved. These comments were wide ranging and supported many of the findings in the literature review.

- Some of these improvements were in terms of colour; that there should be more of it (N=10)
- Some in terms of position and layout; that it should blend in with the trees in the background more.
- That paths should be mown through it. And the edges better tended (N=3)
- There were qualitative improvements offered, some in quite a lot of detail

> *"would prefer it to run more naturally into the trees would like to see the grasses from 3 with the yellow flowers from 1 in the same meadow would also look nice with poppies" (Meersbrook)*

This comment was an interesting one, in which a respondent invents an imaginary piece of planting based on the plants he/she sees before him. It provides support for the Lindemann Matthies (2007) study, that people have an imaginary meadow that comprises a green matrix with some colourful flowers.

There were comments relating to the fact that it made the park more interesting, and that some information should be made available about the planting, including the different plants that could be found there. This idea of park users wanting information about planting was not a theme that had been explored in the literature review but it did occur in both the quantitative and qualitative study.

What was notable in the Meersbrook Park comments was that, despite making it evident that that they understood the project had not really worked in terms of the establishment and flowering of the forbs, they had positive things to say about it and were generally supportive. This will be explored further in the discussion. They showed a cultural awareness and acceptance that was not dependant on the visual results right in front of them.

> *"Good idea if done properly" (Meersbrook)*

There were some negative comments; weeds were mentioned and several respondents commented that the yellow plant in plot 1 looked out of place

(although as we have seen earlier in this chapter, 60 % of all the respondents said it was their preferred plot)

> *"tall wavy grasses are missing, not supposed to be neat, docks look bad, not gaps clumps. dislike number 1 too yellow looks like plants do not belong*"

to:

> *"I would like it to be planted in a more natural manner and have a large variety of flower type and colour and different coloured grasses"*

> *"4, 5 and 6 look very drab and boring, some more flowers and more colour because of insects and other wildlife. there are lots of weeds it should be a little tidier."*

One respondent even mentioned the cutting down of the Sheffield meadow in the spring; they were observant and know why there was no colour. This shows that park users will interact with a piece of naturalistic vegetation and engage with its dynamic nature. They can actually 'like' it despite it not looking its best.

> *"cutting in the spring ruined the effect. It now looks really good, a survey at different times of the year could produce different results. The balance between grasses and flowers and other dominant plants isn't right yet but I love the meadow*

There were also three or four comments that mentioned nettles and docks by name.

"not keen on nettles, too many docks or thistles - love the colourful flowers and pretty grasses"

Three comments, in Sheffield, explicitly mentioned that it was good that the meadows were not neat and tidy, or too "manicured".

There were 14 comments that mentioned wildlife out of the 99 in total showing a sensibility to wildlife and the value of this type of planting to wildlife.

There were a few categorically negative comments about the NP in Meersbrook park, unlike Ruskin Park. These ranged from

“meadows are not something I am interested in”

to

“I hate wildlife and flowers”.

It is worth considering the negative comments further, as there were so few. Given that commenting was optional, we can assume that those that did not comment had nothing they wanted to say. A good proportion of the respondents felt that they did want to say something, and to place themselves somewhere on the spectrum of approval to disapproval of this type of planting. Most respondents who chose to comment placed themselves at the approval end of the spectrum. They wanted to say that, culturally, NP was something they approved of. Many of them had a substantive input that they wanted to share.

A very small minority wanted to say that NP was something they were not interested in. This minority of park users may want to see formal planting, or find a bench to sit on, or be there to walk the dog. They did not say “I have no experience of naturalistic vegetation”, but instead that this is not for me. This minority may represent some of views of some of the respondents who did not comment. However it has been shown that only 3% of the Sheffield respondents felt negative about the planting. Indications are that there is a group of people that are hostile to nature. This would be an interesting area for further exploration.

5.9 Discussion of the Results

5.9.1 Success and Failure in creating the meadows for research

The three meadows originally sown should have worked. The protocols were clearly laid out and if they had been followed correctly the seedlings should have established without much further intervention. (Hitchmough, de la Fleur et al. 2004). The failures were catalogued in chapter 4 where it was shown that human and institutional error prevented the perennial meadows from looking their best. Errors included using insufficient mulch (more mulch would have helped in the case of Queens Park, London and the correct amount could have retained enough water for the plants to germinate and establish); ineffective spraying (Brandon Hill Park) and even unintentional sabotage (in Sheffield, where most of the perennial vegetation was cut down at exactly the wrong time of year). While grass certainly is a force to be reckoned with and nutrient content in the soil an encouragement to this, these were not the reason the meadows failed. They failed because of a failure to follow the protocols and a lack, for whatever reason, of responsive vegetation management on the part of the local authorities (something alluded to by GE1 of Green estates).

The fourth meadow, however, did work. It was located near the home of the lead researcher; a relationship was established between the researcher and the part-time keeper who procured a hose and watered when asked to do so, *having been shown how*…. (at least once a week for four weeks after sowing). A few weeds were pulled out of bed number nine (the mix that had been sown had comprised 80% grasses, 4% natives and 16% exotics) as once the grasses had been eaten by the birds, a vacuum was left in which weeds, mostly Chenopodium album (Fat hen) swiftly began to colonise. The small amount of exotic seed, mainly Cosmos, thus had the space to put on a really considerable girth, and associated flower content, for late summer.

Ruskin park Bed number 9 prior to weeds being removed. The orange flowers are Escholzia californica

There was ownership of the meadow and aspiration for it to succeed. This ownership was not just on the part of the researcher but also the people working in the park (they were a peripatetic team operating out of Ruskin Park). The grounds maintenance staff helped prepare the ground for sowing and, crucially, a relationship after sowing was built up based on watering and establishment. The grounds maintenance staff were nothing less than hospitable, cooperative, interested and friendly, despite being asked to undertake tasks right outside of their job descriptions.

It is worth mentioning here, as an aside, the background to the sowing of the meadow in Ruskin Park in the context of this study. After initial contact with the management at Lambeth Council, these contacts were conspicuously absent, even not responding to emails. They made it clear at the initial site meeting that it would be the Friends of Ruskin Park group who had the final decision in whether they would allow this temporary meadow to be established in the Ruskin Park bowling green. A member of the friends group was at the initial speculative meeting, and they were willing, after hearing about the potential benefits of the project, to allow the meadow to be sown in this untended piece of land. The Friends group had, a few years previously, commissioned a design for this former bowling green - calling it a Labyrinth. This design comprised the geometric layout of beds pictured in the methodology (into which our seeds were sown). The grounds maintenance staff from Lambeth Council had cleared the weeds, sprayed the site, levelled it and put the beds in preparation for the planting.

Figure 201 Ruskin Park site prior to sowing

This is where their project had ground to a halt. When it came to planting they had estimated that they needed to raise £30,000 to buy mature plants and perennials. At the time this project arrived at the scene they were in the middle of a proposal to a landfill trust to procure the money. In the meantime the bowling green had lain untended for two years, the beds beautifully prepared by the grounds maintenance staff but with no plants to go in and two years' worth of weeds. The Friends group (a small group whose voice was only ever heard via one spokesperson) was very committed to this plan, we could go so far as to say that this was its goal, and it took a little persuading to allow us to use the site. That said a site visit two years after the meadow sowing attested to the fact that this money had been raised and indeed well spent (despite earlier cynicism on the part of this researcher): a semi-naturalistic Oudolfian scheme comprising tall, late-flowering perennials and structural plants looked great.

What is notable in this story in relation to our research was that the local authority said that if it was ok with the friends' group it was ok with them. Lambeth Council park managers were never seen or heard of again despite a few efforts made to contact them for feedback. The friends group itself was small and passionate about their scheme. The grounds maintenance staff were friendly and interested.

5.9.2 A word about the seed mixes

As was described in the methodology chapter, the mixes of natives to exotic perennial species were legible on the ground up to a point. As we saw in the results in chapter 4, six months after sowing there was evidence of establishment of some of the perennials in Bristol and Sheffield, and even quite a lot of flowers in the Sheffield meadow. In the case of Bristol these forbs eventually got out-competed by grass, 16 months after sowing. In Sheffield, at the time of conducting the questionnaires, by which time the forbs would have been in their second year, they had been chopped down in error just prior to the questionnaire survey. The different ratios of native to exotics were much more in evidence in the London annual meadow. However the three plots with natives in looked pretty similar in early summer and the three plots with mostly exotic in them looked pretty similar in late summer once the most successful individual Cosmos

plants had claimed their space. This is probably due to the complete absence of grasses. Had the questions been asked in late summer the respondents' results may have looked very different. The viability of the seed is not in question. All of the perennial meadows were sown from the same batch of seed and as we saw from the photographs of germination in the Spring of 2008 the Sheffield seeds had germinated successfully.

This shows establishment of mix number 5 in Brandon Hill park in June 2008. The oxeye daisies had clearly established. However tussocks of grass were in evidence suggesting that thy had not been effectively killed off. In August 2008 there were many plants in flower, like Sheffield, but the site was altogether much grassier.

Thes
num
sowi
after
in grasses and high in exotics.

5.9.3 What do people actually think?

When they have stood in front of a piece of vegetation and answered a survey for 20 minutes about half of the respondents did not comment. Of those that did comment almost half approved. Of the rest a notable proportion showed themselves, in their comments, as we said earlier, to be thoughtful and accepting. When asked whether they liked the planting, even at the relatively underwhelming Sheffield site, most people did. Many commented that it was nice to have a change. People in neighbourhood parks are regular users, they are transactional users and their relationship with a piece of planting can take many dimensions .

There were one or two comments about messiness on the part of the respondents (and we showed that it is the very young who are the most intolerant in this regard). What park users certainly did not like was neglect dressed up as "management for wildlife", as one of the Sheffield respondents mentioned.

5.9.3.1 Preferred plots

This study placed two pieces of vegetation each at opposite ends of the naturalistic planting scale, one colourful and annual, one grassy and green, in front of people (or rather stopped people in front of them!) and asked people to select their preferred plot and their least preferred plot. When confronted by the grassy meadow in Meersbrook Park most people preferred (60%), in the main, the most colourful patch. This was the patch the most lacking in subtlety, and possibly diversity, but the most obvious antidote to the green all around them; the patch with the highest density of colour. Did the colour, for them, mitigate the presence of weeds and short, unmown grass? If so, it was only two thirds of them. The other third made a different, less colourful but more diverse choice for their preferred plot. As we have seen in the quantitative study there was some evidence that respondents who did not have familiarity with this type of planting were more likely to choose plot number 1, the plot with the highest density of colour. The group who had familiarity with both formal and informal planting

expressed a preference for plots 6, 7 and 9 which each had a few wildflowers in them and grasses.

This difference in preference in Sheffield was also made apparent in the comments by the respondents, with several of them saying that the yellow plant in plot number 1 looked out of place. Hands and Brown (2001) showed that preference of certain types of vegetation is influenced by colour: people will prefer colourful to non-colourful generally. Nassauer (1995) suggested that large colourful flowers, like our self seeded linaria, are vernacular cues to care. ie they are part of the language of human intent. The large colourful flower in plot number 1 had actually self-seeded. It is a common garden plant. Thus this language of human intent may not always be intended. Hands and Brown (2001) also reported that colour preference is not linear, ie beyond a certain amount of colour people's preference will decrease, people prefer planting in the mid range of complexity. This was borne out by the evidence from both Ruskin Park and Sheffield. It could be argued that plots 6,7 and 8 all demonstrated the greatest complexity in terms of plant variety and composition, as did the preferred plots in Ruskin park.

The comments themselves in Meersbrook Park also reflected preference for complexity. It is worth noting that a good proportion of the park users in Meerbook Park were dog walkers, and Meersbrook Park is a neighbourhood park in Sheffield in which there is a lot of mown grass. These park users are exposed to a lot of mown grass on a daily basis and possibly have a bit of "grass fatigue", indeed several of the respondents said that the wildflower area made the park more interesting. Despite what SH1, regeneration officer in Sheffield said about people liking "mature landscapes" with trees, vistas and grass the daily dog walker could be forgiven for craving some colour. Colour, as has been suggested, can be used as a mechanism to mitigate negative qualities in Landscapes (Hitchmough 2004). Perhaps this is why it is so desired by Mrs Miggins in cities. It may have been chosen by Sheffield residents with little experience of nature who only saw ugliness in unmown grass.

In Ruskin park the park users were not, in the main, dogwalkers. They were city people of a certain age, educated and willing to share their educated opinion about the planting. When confronted with many flowers at different densities people's preferences became more nuanced: they did not seek out the plots with the densest colour, they sought out the less dense but more subtle and diverse assemblages. This supports findings by Matthies et a1 (2010) that preference is linked to species richness. This choice *was* in the context of them being presented with a lot of very high density colour in the form of the very yellow plots 1, 2 and 3. Preference is, by definition, not absolute but relative to the surroundings and what else is on offer. Hands and Brown (2002) suggested that too much colour in mature vegetation can be seen as too "busy", the native plots were almost at the mature stage of their short lifecycle. In Ruskin Park, preference was for the plots in the midrange of colour. The preferred plots comprised exotic plants early in their annual life cycle, as well as some native plants showing signs of senescence This also supports the Hands and Brown findings that colour at the early stages of vegetation establishment will enhance acceptance. Mynott (2001) suggested that people have a positive preference to flower assemblages at the end of their lifecycles, possibly because of repeated visits. The preferred plots had plants in them both at the beginning and at the end of their lifecycles. Which may have had a bearing on preference.

Another way of looking at people's preference is from a classic scenic aesthetic perspective; the plot chosen by the London respondents may have represented the best balance between complexity, coherence, legibility and mystery (Kaplan, Kaplan et al. 1998). People's preferred plots contained natives that had gone brown mixed with exotic plants that were yet to flower, amongst which there was a variety of colours; People made a preference for plots on which lifecycles were clearly evident.

5.9.3.2 Least preferred plots

In terms of least favourite plot, the same relativism applied as for the preferred plots. In Ruskin park, London, the least favourite plot was the one with big gaps in it, rather than one in which senescence or weeds could be detected. Hands and

Brown (2002) reported that people commented negatively on “sparseness” and said that vegetation ground cover would improve acceptance. In Sheffield, where there were no gaps people chose the least *diverse* in terms of grasses and flowers, and the strongest negative preference went to a grassy plot with a dock plant in the middle of it. There were negative comments in Sheffield relating to weeds; specifically to docks and nettles. The statistical exploration of this study showed that the very young (erroneously) agreed that "the dead plants spoil the flowers" and a certain section of the respondents agreed with the statement "the meadow looks dead" (despite the fact that it was very much alive). This idea of "deadness" is one that runs deeper than the vegetation itself. It alludes to the limits of language in probing landscape preference particularly negative preference. Nassauer (1995) developed a lexicon of descriptive terms relating to care, based on content analysis of interviews, of which “weedy” was one term. As will be explored later in the qualitative part of this study one interviewee said about there being trigger weeds that people simply will not tolerate “as far as I can make out the public will only notice certain weeds and those weeds are docks, thistles, brambles and nettles…You can take an area of rough grass, take out those weeds and mow around the edges and most people will accept it as a habitat”. The things that people chose as having a negative influence over preference were different for each site, whether gaps or weeds or “rankness” take negative precedence over each other is a hierarchy to be explored in another project.

5.9.3.3 Tidiness and care

In relation to tidiness the results for the different parks in terms of the attitude statements started to differ. When asked whether they thought that their preferred plot looked “neat and well tended” only a quarter of the respondents agreed with this statement in Sheffield while more than half of the London respondents agreed with the statement. This may have had something to do with the layout of the annual meadow planting in London: it had been sown into a very structured scheme with each plot sown in a clearly demarcated bed, there were paths between the plots. The area itself had retained the atmosphere of its former formality by way of the mature, albeit untended, yew hedge that surround the whole area. The former bowling green was one of a number of historic garden features almost abutting each other including a long pergola, bandstand and lake

and the whole area was enclosed by a (rather untended) yew hedge. It was in this context of high horticulture that the seeds were sown. For whatever reason, the respondents in Ruskin Park felt that the area of meadow that they liked was “neat and well tended”. It felt cared for and, as Nassauer might put it, communicated human intention (Nassauer 1995). (The meadow in London was not much neater or especially well tended than the Sheffield site but the beds did have some clear, hard edges that even a cylinder mower would be hard pressed to match; one respondent in Ruskin park, London even said they wanted more curves!).

The meadow in Sheffield, quite unlike the one in London, was an area of sown vegetation in a large area of mown grass. Meersbrook Park is a spread out park with its fair share of classic park features, but these were physically very far away from where the meadow had been sown. It had been sown near an area of woodland, which may have added to a less tended feel. This had been the initial premise of the study to kill 300 sq. m of grass and sow therein. However the grass around the plot had been mown and the plots were clearly numbered which should, in theory, have engendered a feeling of order amongst the respondents.

The shape of the responses for Sheffield and London was in generally similar, despite the plots looking so very different. This either points of the limits of the questionnaire and to its Likert type questions, or it points to the limits of language itself in exploring this area.

5.9.3.4 Age and familiarity.

The exploratory statistics on the Ruskin Park data suggest that people with access to both types of landscape, both human designed and heavily manipulated, come to the park to experience nature, amongst other things. People who do not have access to less human designed landscapes are less likely to profess “nature” as being a reason for being in the park. This may be because the more one experiences “nature”, the more one seeks it. One of the hypotheses presented in the literature review was that the “more familiar park users are to naturalistic planting, the more they will prefer it.(Balling and Falk 1982, Keane 1990, Herzog 1995, Jorgensen 2004). Dearden (1984) suggested that the lower the density of

housing people came from, the greater their preference for wilderness. These findings provide partial support for this idea. People's attitude to elements of planting itself, such as "balance of colours" can be influenced by how much access they have to non-built up urban spaces. These early findings indicate that notions such as "balance" may be appreciated by people who are more familiar with natural settings. This indicates how nuanced park users' aesthetic preference can be, and how it can be influenced by the other types of open spaces they use or are used to. "Balance" could also be seen as a cultural construct which will be discussed later in the findings. Again, this provides evidence that **familiarity** with certain types of nature, or culture, will influence aesthetic preference as was discussed by Dearden and explored in the literature review. Familarity has also shown itself, in the Sheffield study, to specifically influence preference. The quantitative findings indicated that the less familiar people were with this type of planting, the more they were likely to choose density of colour over complexity. All of the findings that relate to both "familiarity" and "access to other open space" provide support for the idea that appreciation and understanding of nature will accrete and influence preference, as suggested, albeit in much greater detail, by Kahn (1995). Whether or not this is anchored in a "biophilic" foundation can be explored by looking at the influence of age on preference.

This study found that age has an influence on negative preference. Our respondents in Ruskin Park became increasingly tolerant of the idea of messiness as they got older. The younger the respondent, the more they perceived planting as being "messy" They also perceived planting as being dead, even if it was not. Older people also showed themselves to be significantly more considered in their responses about the statements for their least preferred plot, for example they may express a negative preference for a piece of planting but their responses to statements such as "the dead plant spoil the flowers" accurately represented the planting before them. (there were not many dead flowers, just gaps in the least preferred plots). The younger (albeit small) cohort of respondents were more willing to apply any negative label on their least preferred plot. This may have been due to a greater acquiescence bias in relation to negative findings on the part of the younger respondents.

Age, almost by definition, is linked to experience and knowledge. Older people have enough experience to make qualitative appraisals of the planting they see before them, even if it is bad. This was discussed in the literature review in the context of the Ball and Falk study that identified young people's preference for Savannah like landscapes as embodied in parkland; with preference for other biomes such as coniferous forest increasing with age.

The potential acquiescence bias was not, however, apparent with regard the positive statements about their least preferred plot; in this case disagreement was stronger. The results for both Ruskin Park and Meersbrook Park suggest that the younger the respondent, the more negative their perception of naturalistic planting which may be due to a lack of experience of it, or lack of knowledge. The reason that they may see dead flowers where they are none may be a way of communicating generalised negativity to planting that is not ostensibly verdant and colourful. Perception of "deadness" may be very powerful for people (particularly the young). They will agree that there are dead plants even when there are none as a way to communicate negative preference. Kahn (1995) suggested that to make accurate appraisals of landscapes people had to have other similar landscapes to compare them to. Thus people with experience of what a "live" meadow looks like will be able to accurately assess how dead a piece of planting is. Children, when confronted with gappiness had no other experience with which to connote the landscape in front of them, they (possibly for biophilic reasons) sensed it looked wrong so applied any negative language they knew, indiscriminately, to the planting.

Chapter 6: The Interviews

6.1.Introduction

This qualitative chapter comprises two parts. The first is the presentation and interpretation of the interviews, case by case. Each case will have the main findings summarized at the end of it. The second, is the identification of themes that have surfaced out of the body of data. Themes were tethered to the initial hypotheses outlined Chapter 2. If so are these technical/biological, economic or cultural?"

Interviewees were chosen (or rather they volunteered) from local authorities and organisations involved in the establishment of wildflower areas in parks and other open spaces. The local authorities in question were Sheffield City Council, Bristol City Council and the Corporation of London. These authorities were chosen as a link had already been forged during the experimental part of the study. The other organisations were Landlife International and Sheffield Green Estate, both organisations involved in the establishment of wildflower meadows in public spaces. Skewing of the sample in favour of naturalistic planting was mentioned as being a concern in the methodology section. Indeed these organisations did not experience barriers in the same way as local authorities. However by exploring their experience of diversifying amenity planting, often in collaboration with local authorities, it was hoped that a deeper understanding of barriers might be gathered.

The interviews were open-ended with a view to not only exploring attitudes to planting in general, and to naturalistic planting, but also to how each interviewee perceived their organisation in relation to the subject., and also themselves in relation to their organisation. The latter was to gauge levels of job satisfaction amongst the interviewees, as it was thought that this may influence personal motivation in general. The research questions asked were:

- How did interviewees feel about their work and organisation?
- What was their day-to-day work and what were their qualifications?
- What was their knowledge and experience of naturalistic planting? How successful had it been?
- What was their attitude to naturalistic planting? What did they perceive barriers to be?

- Was the enthusiasm of the general public for naturalistic planting reflected by individuals working in the parks?
- What were their views on planting types in parks?

It was hoped that by broadly covering these topics a depth of understanding might be gained as to how and why decisions regarding naturalistic planting are made, by individuals, within organisations; the extent to which it is contingent on the individuals, and within what organisational, structural and hierarchical - context.

The interviews were analysed with the hypotheses presented in the literature review in mind, these helped to inform the themes that emerged after an initial reading of the interview texts. To recap, the suite of hypotheses at the end of the literature review were broad and wide ranging, and applied to both park users as a group, which were to be explored by way of the quantitative study and to greenspace professionals which were to be explored by way of the qualitative study. As was explored in the methodology this multimethod approach used the methodologies in tandem, and the aim was that they would converge in the findings.

Headline findings for this chapter.

1. Interviewees did not have a lot of technical knowledge of how to establish naturalistic planting in inner city parks.
2. Their experience of it was generally positive although they did not prefer it to other planting types.
3. Traditional hortucltural approaches were highly valued, were seen to differ from more ecological approaches
4. Their assumptions about what park users will tolerate, accept and like did not reflect the findings in chapter 5.
5. To achieve anything in vegetataion management individuals needed goals. Where their goals complimented those of their organisations they achieved what they set out to achieve. A level of goal difficulty was found, in some circumstances, to stimulate the achievement of these goals.
6. There is a wide gap between" tidy management" and an ecological approach to planting.

7. Compulsory competitive tendering, despite happening many years ago, has not been forgotten in greenspace managemtn

These hypotheses can be broadly grouped into

1. Knowledge based hypotheses. Knowledge of "how", the knowledge "why" and the knowledge what, cultural, and environmental. In terms of naturalistic planting this is embodied in the following hypotheses;

- Barriers to NP will be technical and unpredictable Weeds, water predation will be a problem. Education about naturalistic planting on the part of the interviewees
- Familiarity or lack of experience ofmay constitute a barrier to NP amongst the interviewees.
- A lack of training or knowledge may constitute a barrier to NP. This will be explored in the interview analysis

2. Culture based hypotheses

- Expectations of park users: they expect to see bedding plants and evidence of care, colour and variety in all experiences in a park.
- Issues around mowing and the culture of mown grass will be explored Mown grass may be mentioned terms likely to be used are "boring" and "monotonous", or essential. grass management will be mentioned often in passing by parks employees.
- NP may be mentioned as attracting antisocial behaviour such as litter by both park users and professionals in the greenspace sector.
- Professionals will have a wide range of views about this type of planting. Local authority employees are likely to judge it highly but will not prefer it to other types of planting.(Ozguner, Kendle et al. 2007).
- Local authority employees may mention Compulsory Competitive tendering, contractual limitations, cuts, lack of skills and separate conservation services in relation to innovations in vegetation management. (Yates and Ruff 1991, CABE 2006)
- The interviewees may talk about planting suitable for cities.(Ozguner, Kendle et al. 2007)
- The individuals being interviewed within the local authorities will have widely varying levels of motivation for innovation in vegetation.

- Where successful NP is already in practice for a local authority there will be an identifiable “champion” for the cause which will be evidenced in both the language and the results. Evidence of goals will be apparent.
-

6.2 The Interviews.

6.2.1. Motivation, goals and the interviews

The literature review explores the idea of motivation being a barrier to NP in city parks, as well as the idea that the interaction between individuals and the organisations that they work in can be successful to a greater or lesser degree. Some of these ideas were presented in the Wright (2001) paper, and some in the Matheson paper discussed in the literature review and methodology. In the former study several assumptions were made that were thought to be relevant to work motivation: that there is a difference between public and private sector work motivation; that the relationship between employee characteristics and the organisation that they work in is a fundamental influence on motivation. That work context and job characteristics can be separated, that the relationship between the *values* of an individual and the *values* of an organisation are bidirectional; one can influence the other to varying levels of productivity. Wright (2001) summarized his comprehensive literature review about motivation in the public sector with the proposal that goal theory was the most robust theory to date to explain motivation in the public sector. Goal theory suggests that the goals of an organisation interact with an individual' self efficacy to produce results. Self efficacy can be enhanced by the work context; an environment conducive to the achievement of those goals. It can be compromised by a culture of conflicting goals and low expectations. The Matheson study built on some of the humanistic assumptions put forward by Wright. It explored motivation in the public sector form the vantage point of individuals specifically working in the public sector. He identified the defensive, instrumental, thymotic, solidaristic, vocational and intrinsic orientations which he suggested would have an influence on productivity and motivation. The local authority interviews were interpreted in the context of these ethno-organisational ideas. The interviews in the other, non local authority organisations, were interpreted in the context of Wrights' (2001) summary of the major studies in this area. This approach is explorative and experimental, and hopes to pave the way for further avenues of research in this area.

6.2.2. The interviewees themselves.

So who were these interviewees? They comprised local authority interviewees and individuals from organisations that concern themselves with naturalistic planting in cities. The local authorities in question were the ones that had already been recruited for the first part of the project, as well as one other. All of the interviewees agreed, when asked, to be interviewed. They were all interviewed in their place of work. They all occupied different levels within the hierarchies of their organisations; efforts were made in the local authorities that had been involved in the study to interview decision-makers, managers/supervisors and their subordinates in the same organisation. It was thought that this would be useful to gain an insight into whether, within an organisation, potential barriers might reside in the hierarchical nature of greenspace management. . The organisations that were not the local authorities that had been worked with came from recommendations from JH and AJ (co-supervisors) in early talks. They were Green Estate in Sheffield, Landlife International and Telford and Wrekin Council. These expert interviewees were targeted following named recommendations (JH and AJ) and interviewed in their place of work.

Interviewees (self-described job titles).

1. BR1. Bristol City Council, Coordinator (North and Central) Department of Culture and Leisure. BR1 described his responsibilities being part of a team that comprised two coordinators (of which he was one) and eight area managers. His responsibilities were*"projects. Green Flag. Britain in Bloom team projects. Setting up grounds maintenance contracts. Management plans "projecty things"*. The last two of his sel reported responsibilities indicate that he was a key decision maker in the Parks for the City of Bristol. Indeed BR1 was the key contact in Bristol who had allowed thus study to "get the ball rolling" for the meadow in Brandon Hill Park.
2. BR2. Bristol City Council, Community Parks Manager. Central Bristol. He was responsible for one of 8 greenspace management areas in Bristol and managed 21 parks.He was "the first point of contact for issues relating to greenspace" His day to day responsibilities were liasing with park user groups, supporting councillers and council officers, shrub improvement programmes, summer bedding programmes, management plans for the sites and monitoring of the contract.
3. BR3. Continental Landscapes (contractor for Bristol City Council). Park Keeper. His responsibilities were the maintenance and upkeep of Brandon Hill Park. Monitoring and reporting to manager in council. Bedding.

4. SH1 Sheffield City Council. Regeneration Officer. Deals with friends' Groups, development of playgrounds. Implementing parts of masterplans "whatever you name it we get involved in it"
5. SH2. Sheffield City Council. District Parks Officer my role is really to manage the area in the south of the city. We have split the city into four so it is sort of a quadrant that I have to manage. I also manage the parks, open spaces and buildings within those parks ;
6. SH3. Sheffield City Council. Parks Supervisor. Responsible for overseeing a large area in which there are 13 sites of which four are major parks. I've got a team of five men. One seasonal. The others full time and that incorporates summer maintenance, winter maintenance, bedding, pruning, general tidy up of plants and anything else that gets included. Lawn mowing and any other thing that gets thrown at us gardening wise"
7. CC1 City of London Corporation. Superintendent of Parks and Open Spaces. Responsible for the management of three open spaces in North London. Resp. for the management of 150 permanent staff. Determining strategy, long term management plans, budget management.
8. CC2 City of London Corporation. Supervisor. Work planning, all the monetary stuff that goes on here like the sport facilities. Health and safety of the staff and public…liaising with teams making sure all is ok
9. IW. City of London Corporation. Craft Gardener. Keeper Responsible for two lots of bedding each year, the spring bedding and the summer bedding. Whatever is required around the park.
10. GE1. Director. Green Estate a social enterprise. So it is a not-for-profit organisation and it is owned b y two parent companies one being Sheffield Wildlife Trust and the other being Manor and Castle development trust.
11. GE2. Contract Manager. Green Estate.Contract manager for over 100 sites. GE2 specifically looked after the commercial contracts. Green Estate looks after greenspace for the city of Sheffield but this work is underpinned by commercial contracts.
12. GE3. Operation Manager. Green Estate. Responsible for setting the work programme, the safety and the design at Green Estates. He did everything for the parks that Green estate manages
13. LL1. Landlife International. Project Officer. "*My responsibilities are numerous : harvesting. Sowing seeds and making sure we get a harvestable crop that we can sell the seeds of.The other part is more creative projects in terms of how to use seed, it is project work and that extends to projects on Merseyside where people ask for advice or More recently with the woodland trust we have been doing what we call soil inversion with a very deep ploughabout 30 different locations around the country"*
14. TW1 Telford and Wrekin City Council. Acting Service Development Team Leader. acting service development team leader and customer services team leader. The organisation is Telford and Wrekin Council which is a unitary authority in East Shropshire. "*I manage vast amounts of open space within Telford we deal with everything else really which includes grounds, cleansing, refuse collection, rats, pest control, traveller management and all sorts of oddities that fit broadly into those groupings".*

6.3. The interviewees

6.3.1.Bristol City Parks

The first three cases to be investigated were from the City of Bristol. In Bristol there are 300 parks comprising 1800 hectares. At the time of interviewing two-thirds were being looked after by a contractor called Continental Landscapes and one third by a contractor (a so-called direct labour organisation or DLO) called Bristol Contract Services (BCS), soon to be brought back "in house". During the course of the three interviews in Bristol it was recounted that since the introduction of CCT in 1992 the contract for looking after Bristol's Green spaces had changed hands three times; three different companies had been responsible for the green spaces. (each one on a six year contract) There was a general consensus amongst the interviewees that issuing greenspace management to an external contractor had not been as successful as anticipated and that bringing the service back "in-house" was, at the time, considered the desirable thing to do by Bristol City council. It was thought that doing this in two halves would allow for the smoothest transition, and two of the three interviewees were directly affected by this in terms of their job description, BR1 and BR3; at the time of interviewing BR1 was writing involved in the drafting of a new contract, and BR3 , having been employed by Bristol city Council and SITA (a private contractor that had been in charge of the maintenance of Bristol City councils' greenspace)was at the time of interviewing an employee of the external contractor. Three people were interviewed. BR1 ; District Coordinator, North and Central, Bristol City council. BR2, Community Park Manager, Bristol City council and BR3, Park Keeper, Continental Landscapes. BR1 was the most senior interviewee interviewed in Bristol. Part of his job description comprised writing contracts. BR3, the park keeper, was the least senior.

6.3.1.(i) Bristol interviewee no. 1. BR1 District Coordinator North and central. Bristol City parks.

BR1 was a senior member of the parks team in Bristol and had been working for Bristol City council for 25 years. He was approaching retirement and, over the course of the interview, it became apparent that he was a skilled horticulturist

with a thorough training in the traditional mould; one of the first things he asked was why we hadn't prepared a traditional seed bed prior to sowing our perennial meadow in Brandon Hill park. He showed *very little interest* in the quasi-experimental (Hitchmough, De la Fleur et al. 2004)nature of the site preparation whereby the grass is killed and overlaid with compost - No cultivation required.

Much of his working week was spent preparing Green Flag applications. He was influential in decision making in parks as much of his time was spent writing contracts and management plans.

BR1 had a world weary air that bordered on cynicism; he gave a concise summary of what he saw as the degeneration of parks in the second half of the 20th century. BR1 was generally negative about most of the subjects discussed. Enthusiasm was confined to the past alone; all of the other subjects discussed were framed with ennui; he referred to the 1960s when parks were well thought of, and described the ceaseless cuts to budgets, that had started in 1974, with the unitarization of local authorities, that he and his colleagues had had to adapt to. He said that at the end of the day you were in the hands of the politicians and their ruthless quest to save taxpayers money thereby getting their vote.

> *BR1 "in the sixties parks in particular were highly thought of by local authorities. They had really nice parks .but the cutbacks started in 1974 with the reorganisation ……They started to cut money down they started to say we are going to cut the budget by 5 % and we had to adapt to that, then they cut it by another 5% and we had to adapt to that and so on..*

On a more positive note BR1 clearly loved plants and believed that there was a place for all plants; even begonias. His love of plants was underpinned by a thorough knowledge in how to cultivate them

> *"well I've even got room in my heart for them [begonias]. I'd be stupid to plant them in a hot dry place it is perverse to plant ericas in a chalk garden and perverse to put scabious in an acid garden"*

BR1 did not believe there was such a thing as a native plant nor, for that matter, did he much believe in nature. In fact he went so far as to say

> *BR1 "There is no such thing as nature" [or] "very little; I think of things like the cliff face that hasn't been quarried, a river*

bed that hasn't had any control over what goes through it by having more water poured through it or taken away from it. And anyway we are part of nature. We evolved with everything"

In this context, protectors of nature ie conservationists and wildlife organisations got very short shrift as did nature reserves. His reasoning for this was that the conservation of nature for its own sake had no value and revealed a rather anthropocentric position in relation to the natural world.

BR1 "what is the point in plants and animals if nobody sees them"

In BR1s narrative conservationists were bossy do gooders, remarkable for their **lack of knowledge** and inability to do a day's work. He used the idea of allowing plants to go to seed as an example, saying that conservationists stopped him from mowing to allow plants to go to seed. He said that as a result of this there had actually been a depreciation of species diversity at one particular site (a bank of thyme that, once left unstrimmed, saw a drop in butterflies); in fact he likened mowing to grazing and said that the only thing stopping all landscapes becoming woodlands was his mower. He said

"I think the nature conservation people are well organised and they would have only so called native plants everywhere…".

In BR1s opinion wildlife organisations; namely, the Avon Wildlife trust were given grants to manage some of Bristol's open spaces but did nothing,. They were simply politico- bureaucratic organisations created in the context of poorly understood conservation rhetoric - Individuals were paid salaries to not look after a section of Bristol's Green spaces.

BR1 "I give you money to mow my garden and you use it to pay yourself wages so their senior officers are paid out of money we give them to do work they are not doing"

On the subject of public planting BR1 presented had strongly held views in favour of bedding plants. He spoke of Mrs Miggins (and implied this was most people) and her love of colour. The more the better. Mrs Miggins likes colour as "it lifts the spirits". He said it was not more expensive or worse than any other type of planting. This supports the findings from the quantitative study in Sheffield which

found that, in the absence of a lot of colour in the landscape, people will choose the most colourful plot.

A bedding scheme in Bristol in 2008. BR1 suggested that colourful, artificial looking planting is what people want to see.

He also said that bedding cannot be compared to naturalistic planting or herbaceous planting as you get more for your money with bedding (this was accepted as a given); it is also easy to install and repair (no skills required) and can be rubbed out and started all over again. Despite his apparent cynicism about the way his organisation was run BR1 was still, 39 years after he had graduated from Kew, enamoured of horticulture and traditional horticultural techniques and highly suspicious of alternative forms of vegetation management (with the exception of techniques he had seen while training at Kew 30 years previous wherein grass was left to grow around trees).

BR1 was bright and vocal, skilled and experienced yet it became apparent over the course of the interview that he had was and had been for some time engaged in an ongoing battle to protect his knowledge and experience from forces within his organisation that were failing to recognise them. His scepticism extended to friends' groups, who he saw as occasional champions for single issues;

> *BR1 "like anything else they tend to have a life. If things are happening on their doorstep and we have a couple of quid to spend on the park people form a group to get their views across…if we are putting up a playground or taking one away people are going aggressively to form a group but then they fade away it often depends on one, two or three people. If they move away the group will die"*

This was the first of several instances of interviewees mentioning Friends' groups as being champions for specific causes. He presented them in a slightly negative context. This will be further explored later in the chapter.

He had also developed a position about suitability of certain vegetation types for certain places (such as colour for cities and green for the countryside). He used words like artificiality instead of "care" and had views about where certain types of vegetation should be because of peoples' expectations.

> *BR1 "some people want to see what you call nature. I don't think there is such a thing - they want to see colour in the city in the urban area. I think if we were to put a bed of geraniums in the middle of the countryside people would say it sticks out like a sore thumb. Its out of place. If you were to put a field in the middle of the city people would say the same. ….in the city people expect to see short grass, looked after - "*

BR1 shared the common view that the language of human intention will favourably influence preference although he used the blunter terms : "artificiality" and "mess".

> *"Mrs Miggins as we call her round here if it looks artificial if that's a way of putting it or it was meant to be they'll accept it more readily"*

On the subject of NP he suggested that mowing was a way to encourage popel to accept NP.

> *"They would see that you have mown a path through there so the noise and complaints would drop down"*

Like many of his peers, BR1 spent his time applying for specialist awards for Bristol's green spaces such as Green flags and Britain in Bloom rather than thinking about the actual management of the park which was left to the park managers such as BR3. Implicit in this is that obtaining these awards was a clear goal for BR1, and matters such as vegetation choice may have been in the hands of public opinion.

BR1s motivations discussion

Wright (2001) suggested that within the public sector, motivation is inked to goals. He also suggested that goals should not only be seen as achievable. They should be seen as important. If individuals do not see goals as important, they have little reason to strive for achievement. Organisations can affect employees' perceptions of goal importance in several ways. Managers, for example, might link job goals to organisational goals. If employees can see how their work contributes to achieving organisational goals, then they are more likely to see their work as meaningful. This would make sense in the case of BR1 who, despite being a highly skilled and passionate horticulturist, was curiously dispassionate about planting choices.

In relation to Matheson's motivation theories it could be argued that BR1's main work motivation was vocational, the fifth of Mathesons' six orientations to work. This motivation, it could be argued, was laid on the foundations of (or had possibly superceded) an intrinsic orientation embodied by his love of plants. The 2012 study put forward that a vocational orientation is most likely to emerge in a medical, religious, educational, scientific or political organisation (Matheson 2012); it could be argued that a parks department is one of the areas of public service that (traditionally) requires similar specialist knowledge. Horticulture is, after all, a science. BR1 had a self-professed "love" of plants and even traditional parks departments in which he had made a **career** (characteristic of those with vocational motivation).

Matheson says that "careers can confer on an otherwise mundane job a sense of meaning insofar as career progression becomes the dominant purpose of ones's life" Matheson (2012) argued that the pursuit of career advancement is a **moral obligation** for those with a vocational calling. BR1's cynicism may have been due to conflicting interests, in terms of plants, of those around him and most likely competing motivations amongst his colleagues which left him alone, cynical yet having retained a passion for plants and their cultivation to retirement. His mind set seemed to be closed to new ideas; to such basic notions of ecology or naturalistic. This may have been due to his experience of Bristol City Council's approach to conservation and the establishment of nature reserves. Within his career span he had seen greenspaces handed over to wildlife trusts (and thereby removed from the Parks' departments' jurisdiction) and those wildlife trusts given money by politicians to not properly look after these spaces. BR1's vocation seemed closely intertwined with tradition and suspicion which was most likely a reaction to the ever changing winds of politics that had affected the organisation in which he had chosen to affect his vocation.

Findings BR1

1. BR1 promoted mown grass as a landscape management technique that benefitted nature. Mowing : “grazing”. He considered a barrier to be letting vegetation grow.
2. BR1 was older than the other interviewees. His day to day work was closely entwined with the goals of his organisation.
3. BR1 discussed change as being unsatisfactory and generally for the worse.
4. Colour is important to park users. Mrs Miggins.
5. Landscape context is relevant to vegetation choice. Cities/The countryside.
6. Conservation is different from horticulture. In his eyes it was a poilitical construct.
7. In BR1’s case Knowledge and training is not necessarily favourable to NP. Experience in horticulture may even hinder NP.
8. Friends groups are champions But just for single issues.

6.3.1.ii. Bristol interviewee number 2. BR2 Community park manager. Bristol city council.

BR2 was BR1s's subordinate and, again, an employee of Bristol City council. His job title was Community Park Manager; Central Bristol. His responsibilities were outlined on page XXX, shrub planting and bedding schemes featured in this list. Bristol was, at the time, divided into eight different geographic areas of which Central Bristol was one.He was the manager of 21 parks. He had a decision making role with regard vegetation choice (he mentioned "shrubs" and "bedding" as being the choices he generally made). He was interviewed alongside BR3, who was in park keeper role, and was the less vocal of the two. BR2 did not freely give his personal opinions; in fact he used "we" a lot when talking about his job, rather than "I" . when talking about many things, including his own qualifications :

> *BR2 "we came through the ranger service from being community park rangers we became community park managers. Qualifications for that were sort of qualifications on management. And some sort of certificate in management"*

BR2 said that the main part of his job was liaising with other people, he saw himself as a kind of middleman between the general public and the contractor and facilitator for park user groups. The role of "community park rangers" was not explored but it is likely, in the context of the discussion in the literature review about countryside management, that the shrinking of the infrastructure around countryside management was reflected in Bristol by Rangers becoming park managers. In this context one might expect BR2 to have greater knowledge of NP than the average Park manager (The Ranger service was developed to look after the interests of the countryside on the ground. The job of a ranger was initially not a management role, but with potential to be one. It was a role that required practical, development in terms of wildlife, and communication skills) the first two skills were not in evidence in the interview but, as the interview progressed, it became evident that there may not have been the opportunity for these skills to surface. The only person above him was BR1 (district coordinator) and the parks operations manager. Being a manager meant that BR2 had to meet the interests

of park users, the Avon Wildlife Trust, the natural environment team or the contractor. On the subject of vegetation management BR2 said

> *BR2 "you tend to shy away from anything that is going to introduce difficulty on the contract. Whilst it may be favourable to wildlife if it means that the contract has to tool up for a different grass cutting regime it makes their job more difficult and you tend not to do it".*

This quote highlights the difficulty for local authorities to innovate. Local authorities are custodians of greenspace and, in the case of Bristol city council at this time, are the purchasers of services; They are clients as well as being the providers of services to their own clients; the park users. If their goal is to promote wildlife, say, it is easier to break up their landscape portfolio and "purchase" a conservation service to look after it (or rather sponsor a charitable organisation) than to change preexisiting contracts. Thus vegetation management in the traditional sense will be dependent on those contractors, greenspace maintenance specialists, who stand between the local authority and park users.. For their part, these private contractors need incentive and motivation to manage wildlife, and may well have to coexist with wildlife protection organisations. Each at opposite ends of the ideological spectrum.

BR2, described how most of his job was a responsive one, keeping people happy and responding to their requests. He actually spent much of his job listening to other people and helping set up friends' groups who were then encouraged to "self manage". He was very fluent in the latest changes in parks strategy, notably with regards training, and what the problems were with the way parks were run. BR2 was aware of changes that needed to be made but was not forthcoming in how changes could be implemented.

At one point in the interview he gave away clues to his feelings about peoples' desire for wildflower planting, and a little bit of the cynicism that characterised all of the Bristol interviews surfaced.

> *"It is very difficult when you are struggling to do the everyday jobs such as cutting the grass and sweeping hard surfaces and somebody comes along and says <u>ooh</u> lets try a little wildflower meadow here and you can come along with your strimmer and tidy up"*

BR2 gives away a lot here The first thing is that it was struggle to do everyday jobs, of which he counts mowing as one. This statement also reveals that "somebody" is the initiator of the idea, and that he is the provider of the mower or strimmer The second is a disdain ("ooh") for the "somebody" He explains his caution later

> *"We have dumbed down to a certain degree over the past fifteen years you know we have taken beds out and instead of re-establishing them we have grassed them over. We have not been encouraged to look at alternative regimes simply because we have got an underperforming contractor on an underfunded contract and everyone is really stretched. It does not encourage you to look out of the box as it were"*

BR2 is saying that he cannot achieve goals because the environment he works in is not conducive to achieving them, Although Wright said that *goal conflict* can increase goal difficulty, which in turn can stimulates self efficacy, he said that this could only work in the context of goal importance, for both the individual and the organisation. In the absence of any organisational goals around vegetation it seemed almost impossible for BR2 to think about innovating in vegetation. Some of the negativity of BR1 surfaces here yet the frustration borne out of many years, of BR1s interview, is lacking. BR2 was in his mid thirties and he demonstrated an acceptance of his lack of control over daily tasks. This acceptance seemed to distance him from the park user to the point where he finds their views irritating. This idea refutes the idea presented in the literature review that employees in the public sector might have a "calling" to do good or provide a service. However the lack of engagement evident on the part of BR2 may be due to a ack of professional fulfilment, as Wright's review suggests

> "One purported cause of dissatisfaction has been that while public sector organisations provide greater opportunity for employees to achieve altruistic or higher order needs, the very structure of these organisations hinders the realization of these opportunities. Public goals are often ambiguous or even conflicting, making it difficult for employees to understand or make their contributions to the accomplishment of these goals"

BR2s attitude of acceptance of the situation could also be interpreted from the humanistic perspective put forward by Matheson. BR2 came across as

unquestioningly compliant with the organisational framework in which he works. This compliance extended to the contractor with their lack of tools, which he seemed to accept, as well as to the friends' groups he worked with.

At the end of the day this compliance may be unproductive as managers need to manage contractors who have a strong profit motive and, in the personal experience of the researcher, will end up unmanaged and even unmonitored, free to prioritise profit over performance. Demands of the park users or the wider society at large can become a hindrance as was evidenced in the tome of BR2s discourse.

This compliance may be indicative of BR2s personal motivations. In terms of Mathesons' categories of orientation to work BR2's motivations would sit comfortably in the second category; the instrumental.

> *"The instrumental orientation to work arises when people have satisfied their needs for safety and security and seek out material rewards to satisfy other needs such as monetary rewards and other utilitarian rewards …<u>it results in a narrow form of compliance</u> in which workers focus on the rewards and comply only with those demands that are rewarded and only to the extent that rewards are linked to their behaviour…..the use of material rewards generates a nonintrinsic relationship to the product of labour because workers focus on obtaining the rewards rather than on the requirements of the task"*

Matheson's view here is rather cynical, he goes on to suggest that ithe instrumental orientation breeds lassitude and irreversible underperformance, and although humanistic, also fatalistic.

The question arising out of this interpretation is what influence will the psychological profile of the individual in charge of decisions regarding vegetation have on NP in city parks. In the case of BR2, a manager with a wide job description that included making decisions about planting, he may have focussed on the tasks that were more visibly rewarded such as responding to friends' groups, councillors and officers in the local authority at the expense of developing the vegetation portfolio of the park. The purposive interpretation here is that these are his organisations' goals. Thus that is what he aims to achieve. Whether this would be out of choice or necessity is an important question to ask and will be considered in the conclusion.

Findings BR2

1. CCT is a barrier for managers tasked with decisions about vegetation.
2. Wildlife is less important than other forms of management. There is a hierarchy of importance and wildlife is not amongst the most important “everyday” tasks. Decision to create naturalistic planting is made by somebody other than this managers in charge of parks.
3. “Wildlife” is seen as a discreet characteristic of a park rather than a management approach.
4. There was no mention of goals or aspirations for the parks in terms of wildlife, only training which was recognised as being an area that needed addressing.
5. The traditional Ranger skill set does not necessarily include knowledge about NP.
6. It could be argued that personal work orientation may have an influence over decision making about NP, as well as work context.

6.3.1.iii Bristol interviewee number 3. BR3. Park Keeper. Continental landscapes

BR3 was the third interviewee in Bristol and he was interviewed alongside BR2. He worked for the contractor and his job title was park keeper having been changed from ground maintenance operative and before that manned presence in the park; BR3, like BR1 before him, had worked for the Bristol parks authority for a long time and, had been buffeted by more than fifteen years of restructuring and changes in contractual tenure of greenspace management. When describing his job title he said that his official title was park keeper, but unofficially he monitored the contractor (whom he was employed by) and reported back to Bristol city council when things were not done. This unofficial role of monitoring highlights ambiguity and potential conflict of interests confronting parks employees in the wake of CCT. The interaction between individual and organisation is not clear cut. BR3 was employed by a commercial organisation Continental landscapes, whose client Bristol city council,was his former employer, to whom he reported contractual shortfalls. This lack of clarity in organisational structure may constitute an impediment to outcomes other that are not routine maintenance practices.

BR3 came across as resigned, cynical, accepting, philosophical (like BR1 before him) and argumentative in a way that his co interviewee BR2 was not. Early in the interview he said he had a "passion" for plants and planting. He approved of naturalistic planting as it made a change from the monotony of mown grass. He enjoyed just "*sticking something in*" where there was a gap and leaving grass to grow where appropriate. Hence he was the only interviewee in all of the local authorities, as will become apparent, who reported personally undertaking any form responsive vegetation management that might benefit wildlife. Unlike BR2, his manager, he was happy to use the first person and speak freely as an individual with an attitude and said on several occasions how much he "loved" plants.

> *BR3 "It really lends itself to a naturalistic approach to the maintenance of it. We tend to leave a lot of wildflowers that go in the shrub beds. Provided it is not invasive it works really well. But it is not actively doing it it is allowing what happens to happen and encouraging it to stay. So*

that's what I like and again I like it when the grass is allowed to grow longer and it is better for the environment"

An example of where wildflowers are left to grow in the shrub beds. An "approach" said by BR3 that Brandon Hill Park lends itself to.

This point of view was different from that of BR1, who had said that NP was not suitable for cities.

He felt that he had no part in the decision-making process and was keen to draw attention to poor decision-making on the part of Bristol city council (for whom he no longer worked as he was now employed by the contractor)

BR3 "Quite often they have tended to put it [meadow plants] in the wrong place in my opinion. But we rarely get asked."

BR3 "I was involved in Crocks Bottom but it was a disaster"

He spent much of the interview recounting the many failures of Bristol city council who he referred to as "They" as he no longer worked for them. He commented on parks management like the outsider that his status as park keeper employed by a contractor had now conferred upon him; This disenfranchisement was apparent in his cynicism about politics but did not seem to have dampened his love of horticulture and plants. He had been doing the same job but his job title and employer had changed several times during his employment which gave him an insightful impartiality about the way parks were run. For example on the question of training

BR3 "I don't think these questions have been answered yet. To get the apprentices in that's all well and good…. but we should have parity in that. Whether there is any funding for that to happen I don't know."

This shows the gap between decisions being made by local authorities, particularly the politicians, and the contractors entrusted with implementing them. It also highlights the complexity of adapting contracts to meet the changing requirements of local government, particularly in relation to training.

BR3 explicitly mentioned compulsory competitive tendering, a theme that emerged in the interviews;

BR3 "I would say there has been a problem in the last twenty years since the introduction of compulsory competitive tendering it was around twenty years ago a fairly skilled workforce. Very little training. Any newcomers have just learnt from people who were already there. Yes its not good at the moment"

He had been in the job for twenty years and intended to stay. In answer to the question about how long he intended to stay in his job he said " Permanently". He was resigned to the planting element of his work being the lesser and litter picking and cleansing forming the bulk of his day to day work,

BR3 "I wouldn't necessarily want it that way but that's the way it needs to be"

He, like BR1 before him questioned the competence of the decision makers at Bristol city council and over the course of the interview became increasingly vocal about the politics of the parks.

BR3 "Its not just skills. Skills are just one area. There has actually been a complete lack of funding for at least twenty years . Going for the lowest tender every single time. The last three contracts that have come in have actually bidded lower than the previous one and the council have actually accepted. Its disgraceful. At least now its recognised and there are some efforts to turn this round. It is a different T shirt for us every time and more stresses and strains around budgets"

BR3 "The problem is that the contract itself is so underfunded. They made a massive error in going for it a huge error"

BR3 "The main problem is that every contract that has come in has tried to undercut the last one to try and get the tender and as soon as they get in they get slammed by the council for failing on the contract and then thrown off as soon as they have had the opportunity to do so no contract has ever bothered to invest in anything including men, machinery everything. Total lack of investment both sides. It is a crying shame it really is. They are claiming that they are going to make a difference this time but I've heard it all before so I am a little cynical"

BR3, at the bottom of the hierarchy and BR1, somewhere near the top shared a cynicism about Bristol city council and the way things had been done. They both expressed their frustration. So given his cynicism, seeming disinterest in money, status, or his colleagues what is (or was…) it that motivated BR3 to do the work he has chosen? Matheson's humanistic perspective, in this case, may have more play. BR3 had motivations that transcended the purely defensive, instrumental,

thymotic, solidaristic. While BR1, the career horticulturist, had work motivations that fitted into the vocational and intrinsic models BR3s motivations could be argued to fall in the sixth category. The sixth orientation laid out by Matheson was the expressive orientation that seeks intrinsic rewards from work.

> *" A different orientation to work arises where workers perform work to obtain intrinsic rewards such as using skills, a sense of accomplishment, and mental stimulation… ….intrinsic rewards differ from utilitarian rewards insomuch as they are yielded by the work itself rather than by external rewards.*
>
> *"intrinsic motivation is reduced by external rewards and is greater for a task that is freely chosen"*

It could be argued that the motivation to work for BR3 falls into this latter area. While he had an in-depth understanding of the organisations that he worked for he at no point expressed any desire to acquire status or promotion or even a social life therein; he came across as rather solitary His cynicism and negativity were simply an *etat d'esprit* that did not appear to make him want to leave his job. In fact when asked he cheerfully said that he would like to stay in the job permanently. His chastising ("it's disgraceful"), while opinionated but detached as if he had some other personal agenda. On a very small scale BR3 was doing naturalistic planting simply by choosing not to pull up non- invasive plants and allowing grass and non invasive wild flowers to grow wherever possible. Indeed his role of unofficial monitor of teams of gang mowers may well in some way have protected these areas of spontaneous vegetation from falling prey to the mower.

On a final note for BR3 one thing that came across was his solitude, in which he seemed quite comfortable. It may well be that he was a nature lover, or as some people might see it somebody who sat on the far reaches of the ecocentrism scale which allowed him to professionally inhabit what to many would be a tricky organisational environment where conventions such as teamwork and hierarchy were not the norm. These individuals may well be the ones that, through their intrinsic motivations, transcend barriers to NP.

Findings BR3

1. Appropriateness and landscape context Some parks "lend themselves" to NP

Distance between decision makers and practitioners

2. CCT was not good for parks
3. Short term contracts implied to not be conducive to progress in parks.
4. Organisational ambiguity in the wake of CCT may constitute a barrier to NP, but in this case it may actually favour it (see last point to be made)
5. NP can be an individual approach; taking the decision not to pull up a plant.
6. To undertake NP individuals do not always need goals. Some have intrinsic satisfaction from their work and an appreciation of the natural environment.

.

6.3.2.CITY OF LONDON

The City of London was an altogether different organisation, in politics and governance. As was described in the methodology. The city of London is an unusual local authority insofar as it fulfils normal local authority functions for the square mile of London ("The city") as well as being responsible for other buildings and services and 10,000 acres of green space in and around London. As has been described a relationship had been built with this local authority as a meadow had been sown in Queens Park, one of the City of London's greenspaces. Two of the interviewees from the City of London worked in Queens park, and one was the superintendent of several parks of which Queens Park was one.

6.3.2.i. City of London interviewee number 1. CC1 Corporation of London. Superintendent responsible for the management of 3 open spaces in North London Hampstead Heath, Golders Hill park and Queens park

CC1 was responsible for 3 open spaces in North London and employed by the City of London. First impressions of CC1 were his positivity and good humour. He confidently and fluently delivered facts and figures with pride

> *"I am responsible for the management of 150 permanent staff, I have a budget in the region of 7000,000; annual visits to Hampstead heath 7.2 million…."*
>
> *"One thing I love about my job….I am very fortunate…"*

Unlike BR1 CC1 was in favour or naturalistic planting.

> *"I personally think its fantastic"*

In relation vegetation CC1 was in favour of meadow type vegetation in Hampstead Heath, [one of the largest areas of greenspace in London] which he said lent itself to *"agricultural type swards" "to keep that actual sense of the rural landscape".* Like BR1 and BR3 he drew attention to the context in which he saw NP as being appropriate, in this case to Hampstead Heath. He said that it (grassland management) is something that is "very very" strong within the management role that the city of London provide. CC1 was not unlike many of the interviewees in the way that he was conserving the landscape tradition of particular landscapes. In another of the more ornamental parks he was responsible for he said

> *"I think that in Golders Hill park we have probably reached the perfect balance between bedding, perennial and shrub. We see*

wildflower meadows as being supplemental but actually they enhance the site greatly"

CC1 mentioned several times that naturalistic planting could not replace any of the ornamental horticulture but could supplement it (a view echoed in (Ozguner, Kendle et al. 2007) This study provided evidence that NP would be liked but not favoured over other types of planting by local authority employees (in contrast to conservation professionals) CC1 but also expressed frustration when talking about changing his staff's perceptions and encouraging them to use alternative forms of vegetation management to achieve the goals of the organisation

CC1 "We have a highly qualified and competent staff. Skilled. It is the cultural side of these areas where we are moving from a more formal to a more naturalistic style…people who are trained in gardening are struggling when they are asked to so coppice rotation and those sorts of operations"…."culturally there is a huge amount of problems in actually moving that staff's perceptions of what we want to achieve so that is about mentoring other people into the area to work alongside gardeners.."

The ecologists and conservation manager were managed, in terms of organisational structure, by CC1. The separation of these services discussed in the literature review and mentioned by BR1 did not apply to the city of London; The "Parks and Open Spaces" was an umbrella that included conservation and ecology. CC1 also spoke about how integral ecologists were to managing grasslands. In fact the impression was that the ecologists were the decision makers in the management of some of the sites. CC1 also mentioned the organisational complexity of managing grasslands for maximum wildlife benefit.

"there are 200 tasks next year that have got to be achieved if we simply want to stand still…I have two ecologists who report directly to my Highgate wood conservation manager and they sit very close to my office"

In CC1s view ecologists "actually help the staff and the public understand why we are doing things at certain times and that there is a proper plan of action each year". Their office's physical proximity to his office was seen by him as an advantage as it facilitated communication about matters to do with conservation. Park managers in general were not presented in favourable light by CC1;

" I sadly believe that some parks managers in this country need a good shake and a good wake up…….. So often you see these

large sterile areas of grass that parks managers think are gorgeous"…."I also see that some conservationists can't see the horticulture side. ……. The minute you go polarised either horticulture or conservation you have got it wrong…"

The idea that some park managers see areas of mown grass as "gorgeous" was not borne out by the findings of this study. CC1 did highlight that balance, in terms of wildlife manangement was important.

"The balance on the heath is always going to be more towards more conservation "

CC1 had not been prompted to explore the relationship between conservation and horticulture, however he believed that they should manage land in tandem and that separating them was not productive. The landscape portfolio of the City of London comprised both areas of encapsulated countryside and highly managed parks, which may explain the fluency of this superintendent in matters concerning naturalistic planting.

CC1 expressed great respect for the organisation that was employing him and was proud of the fact that his organisation, in 1880, had adopted the "Epping Forest Act" which sought to protect large amounts of green space in and around London. He also stated with pride

"I think we deliver some of the sexiest side and some of the best stories that this city has to tell".

CC1 said that first and foremost he was providing a service to the public and it was very important not to lose contact with the park user;, individual Green spaces needed a go-to named individual (ie keeper) that could be approached by the general public. He lamented the loss of the customer interface of the previous decade and a half and many parks departments being lumped in with cleansing.

"At the end of the day my view is that only by having people in my position responsible for the holistic management ……a proper customer service to what you should be doing and direct staff in a way that is hopefully quite motivational and gets them inspired for the areas they are responsible for"

CC1 and the organisation he worked in.

CC1 had a position of responsibility and was well-paid to manage three large parks. He was proud and gave the impression that he and his organisation knew

how to manage landscapes. He referred to his staff, often by name, all through the interview and at one point in the interview was interrupted by a telephone call by the chairman (whom he addressed “Chairman”) in which he named several managers who had “worked their socks off”. He was proud of complex grassland management and heathland conservation in one of his parks that was clearly reaping rewards in terms of public perception and, species diversity (although the latter was not mentioned at all). He was allowing qualified ecologists direct access to landscape management plans and allowing their ideas to trickle into the management plans for other sites His job satisfaction seemed high.

CC1 comfortably used terms such as achievement, motivation inspiration, holistic management and lacked the resigned acceptance of the employees in Bristol. On the subject of naturalistic planting he did not really refer to barriers but to challenges to be overcome. He appeared to have goals. Unlike BR1 he seemed to feel he had agency over his work, or what could be seen as “self efficacy” (Wright 2001) What came across was a comfortable relationship with the organisation he worked for which, as was described in the methodology was uniquely well resourced and unlike other local authorities in the UK.

CC1 was similar to BR1 in terms of decision making level, yet his discourse was different. Evidence of this relationship was his optimistic, friendly and proud conversation in relation employer. Evidence of the paternalism of his employer, mentioned in the methodology, was strong in his discourse; he referred to his colleagues using [archaic?] job titles unfamiliar to the interviewee: referring to past directors of the local authority as “forefathers” and addressing his superior as “chairman”. CC1 also referred to staff in his team with (“my ecologists”). The reason for this apparent lack of barriers to NP may be organisational. As was described in the methodology the City of London run its parks as charitable organisations which may not be subject to the same stresses as local authorities. It may be a question of resources. It may be a question of the unique landscape portfolio of the City of London with encapsulated countryside and highly managed city parks existing in tandem coupled with a continuity of resources. Resources that encompass personnel, finances, and expertise.

In term of the ideas about motivation explored in the literature review it would appear that CC1, the individual and the city of London, the organisation,had a mutually beneficial bidirectional relationship, which was to the benefit of species

diversity in their parks. CC1s goals were difficult but made achievable by a favourable work context. His goals were also shared by the City of London.
to the history of his "unique" organisation at any given time during the interview, CC1's personal orientations in terms of his work were evident in some of the language he used. He referred to the main park he looked after as "sexy" and the "Jewel in the city of London's crown".

He may have absorbed the solidaristic *ideals of his organisation* which was motivating and rewarding for him.. At no point in the interview did CC1 name any species by name, or the inherent benefits of trying to maintain species diversity or mention any personal interest in plants. This would indicate that to create and manage wildflower plantings the management does not necessarily need any intrinsic motivation, but access to qualified and competent ecologists who should be allowed influence over decision making. It is harnessing the mechanisms of the organisation to promote the ideals and goals of the organisation that will effect change. The horticulturists were not endowed with the same glowing praise as the ecologists, in fact barely were they mentioned at all, except to say that they were set in their ways and [parks managers] needed a "good wake up and shake up".

From Matheson's point of view, CC1's motivations appeared to fit comfortably into both the "thymotic and vocational. The "thymotic" motivation for work was noted by Fukuyama in 1996 (Thymos is a greek word used to express the human desire for recognition). Workers self-esteem is maintained by status at work. In terms of Collins ritual interaction theory status rewards are the product of deference rituals.

"order givers exhibit self assurance, pride or arrogance and tend to identify with the ideals of the organisation in whose name they exercise authority. They tend to regard the organisation and its ideals as extensions of their own egos because they must make a strong commitment to such ideals if they are to represent them in a ritual"

Findings CC1

1.The organisational infrastructure of orgs may influence the success of NP : Conservation/ecology/horticulture should be managed holistically.

2. Organisations run like charities rather than public sector service providers may be more successful in NP.

3. Landscape context is important.Appropriateness

4. Changing perceptions amongst traditionalists necessary to NP to thrive.

5. The relationship between Individuals their employers, at decision making level, may influence the success of delivering NP on the ground.

6. Ecologists and conservationists may be intrinsic to successful delivery of NP in open spaces.

7. Managing landscapes for nature can be complex.

8. Some park managers see mown grass as “sterile”, some see it as “gorgeous”

6.3.2.ii. City of London interviewee number 2 CC2 superviser

The initial impression of CC2, like all of the employees at the City of London was that he was comfortable and settled in his job as supervisor at Queens park. He had been working for the city of London for fourteen years and, like in CC1's interview before him, there was a complete lack of negativity when describing his working life. . Prior to that he had worked for Camden council. Early in the interview he mentioned the fact that CCT (compulsory competitive tendering) at his previous employer Camden council " had put the breaks on" his training. This CCT would have happened fifteen years previously.

Like CC1 before him CC2 repeatedly referred to his to his supervisees and his "team" in first name terms; much of his job was spent organising their training and working day to make it as collaborative as possible

> *"We have D*** who is our head groundsman and we sent L*** last year on a lot of stuff that would be relevant to help D*** and vice versa. I know when I** does the planting …..they are learning"….*

> *".We've got a guy over who used to work here actually his name is D***** and he does a little talk with the children on ecology"*

> *"But the manager who was in charge at the time was very much into the ecology side of it G*** ???"*

CC2 was positive about leaving the grass to grow and mentioned the increase in butterflies when grass is left unmown.

> "We just let it grow. Even the different types of butterfly and stuff its amazing that in the middle of London we are getting that sort of diversity in wildlife"

Like many of the interviewees he argued that there was definitely a

> *"place for formal planting in any park because there are people that actually really like it. In our quiet garden now it's a nice place to go for older people if you are 16 or under you are not allowed to go in"*

He was the only interviewee to mention that age influenced preference over planting.

Although he did say that the general public were actually a lot *more interested* in herbaceous planting. In fact he as one of the only interviewees to make any qualitative positive judgement about types of planting. When probed he even gave a reason for this :

> *CC2 "you get asked more about what is in a herbaceous bed than what is in a formal flower bed I don't know why its just somehow more substantial"*

Like many of the interviewees who work in parks he was unwilling to state any preference for any type of planting. Even in reference to pests, foxes in the park in this example, he seemed unwilling to express a negative opinion. This may have been due to him trying to say what he thought the researcher wanted to hear.

> *"everything has got its place I suppose".*

But it may be due to him feeling that as somebody in public service, it was not up to him to freely give opinions. This neutrality on the part of this interviewee, may be to the detriment of innovation in decisions regarding vegetation. On the subject of a meadow that had done well he demonstrated a lack of technical knowledge:

> *"the colours came up and it was lovely ….it might have been beginners luck to tell you the truth."*

CC2 was as mindful of his park users as he was of his staff and was mindful that he was there to provide a service to the public.

> *"It is going to take quite a bit more effort before we get the public on board, That's my view. It would be interesting to know what the public feel about them. What they get from them I suppose it provides a bit of height.."*

CC2 described how at Queens park every member of the 11 staff were keepers but they were keepers with specialisms such as gardener-keeper or groundsman-keeper. In these fund-stripped times where many parks in the UK struggle to have one keeper this was an unusual situation. With a team of 11 permanent employees in a park calling everyone a keeper is, presumably a way of flattening hierarchies and fostering teamwork, dissipating the inevitable tensions that spending a lot of time together isolated in the park all winter would engender. It also enabled them to help each other with everyday mundane tasks, as well as

giving everyone a chance to do more interesting tasks. It was this organisational framework that made the City of London stand out amongst the local authority case studies.

On the subject of naturalistic planting he said that leaving the grass to grow one year had elicited complaints about golf ball getting lost in the pitch and putt; a highly valued part of this park's heritage.

Matheson' theories in relation to CC2

CC2 supervised staff in a well resourced paternalistic local authority. Like CC1 before him he perceived other local authorities were worse to work for (Camden council for example that had fallen prey to CCT …) . He inadvertently defended the values of that authority throughout the interview. CC2's felt that people were important, their training and development and their sense of professional fulfilment. Like all of our interviewees, his goals if not his aspirations, were closely linked to those of his local authority. Like CC1 before him he came across as less lonely than the employees of Bristol, often referring to his colleagues. His aspirations could be explored in the framework of Mathesons' humanistic discourse. It could be argued that CC2s motivations to work were a mixture of instrumental, solidaristic and vocational. It is worth reiterating that the orientation profiles were specifically identified in relation to the Australian public sector They are being used here as a way of exploring another vantage point in relation to individuals within specific organisations. As a supervisor he took his job of ensuring training for his staff seriously. His own goals were clear. He was very compliant and loyal to his authority and used "we" and "our" throughout the interview.

The solidaristic orientation to work

> *"arises when individuals undertake work to obtain the rewards of social acceptance and respect. "ritual participation in the group" is a form of normative control used by employers .*

An illustration of which

> *" A lot of people come in here and its just a job and within a couple of years it's a career. I think it surprises them as well sometimes. How you get an affinity with the place how you really care. The idea of ownership you know."*

Matheson argued that work can provide people with a sense of meaning; the career itself can become the overriding motivation to work.

> *"Ritual encounters provide individuals with intense and meaningful experiences that are a source of emotional energy. They also sanctify group symbols and create moral norms. These symbols and the ideas that they embody can motivate people to work by providing them with a sense of meaning"*

Unlike CC1 before him CC2 had none of the "thymotic" traits which were named by Matheson as being pride and potential arrogance.

> *" We have won the green flag award ten years on the trot and we are proud of that. But we don't sit back and think we are going to get it every year we go out to get it and even strive to be better it is just the natural progression of things"*

CC2 was compliant yet active, eager to espouse the values of his authority.

Findings CC2

1. He was in favour of NP but not at the expense of other types of planting.
2. Drew attention to goals such as green flag. Motivating.
3. Drew attention to park users requirements which sometimes conflicted with NP.
4. Technically not proficient in delivering NP but appreciative of it.
5. Saw value of wildlife
6. Individual motivations were shaped by structure in which he was working.

6.3.2.iii City of London interviewee number 3. CC3

CC3 was CC2s subordinate. When asked his job title he replied “Craft Gardener/Keeper”. His training comprised “a number of horticultural qualifications and many in-house courses as well”

He was the person on the ground at Queens park actually doing the planting. He had recently installed a new rose bed and some azalea beds of which he was proud. He was also responsible for planting bedding plants and bulbs in approximately 20 flower beds in the park, mostly in the “flower garden”. CC3 was one of the only interviewees to actually be instrumental in making decisions about planting. As to *how* he had made the decisions he said

> *CC3 “There are no roses elsewhere so I thought it would make a change. Something different to look at for the public. They are scented as well and it is very close to the seating area. Outside the café. So popular”*

CC3 had also been asked to design some herbaceous beds and of his own volition had planted an azalea bed

> *“they were planted a year and a half ago…..They provided a blast of colour around March/April time”*

When asked how he made that decision to plant azaleas, the idea came from another of the city of London’s parks.

> *“ I worked with azaleas on quite a big scale at Golders Hill park “*

He mentioned the organisational aspect of planting showing that he was well able to plan for naturalistic planting if necessary.

> *“We’ve got to plan for a couple of thousand daffodil bulbs that need to be planted in an area to enhance that. That will go well into autumn. That’s not everybody I mean you try to have a core of people concentrating on the leaves at this time of year”*

Like many of the interviewees CC3 came across as very committed to his role. He was proud of his responsibilities in relation to making decisions about planting and (his supervisor who was in the room at the time of interviewing seemed happy for him to take responsibility). At no point in the interview did CC3 mention planting in the wider context of species diversity.. CC3 was the least senior of the

interviewees did not have the experience of his colleagues of other organisations or the wider context of greenspace management in the UK. His frame of reference, in the context of other local authorities, was relatively narrow. At the end of the interview a kind of stubbonness and "them and us" mentality came through when talking about friends' groups. CC3 said that suggestions are made to the management that "trickle down" to the staff on the ground but that

" if we don't think it is going to work then it doesn't happen".

Whether this was realism or bloody mindedness was not explored at length but what it did draw attention to was a tension between some horticulturists and friends' groups, who may influence the decision makers in local authorities (we saw this influence first hand in the case in Ruskin park, in the preparation for the quantitative study). If friends' groups are champions with goals, as was suggested before, it may be that, on occasion, horticulturists have conflicting goals. From a human resources point of view, the city of London was very well resourced in terms of greenspace staff. This may make for a tension in terms of conflicting goals. BR2 the community park manager had also suggested that there was a gap between friends' groups and practitioners that was difficult to bridge. He suggested that this was because of contractual constraints. CC1 too had referred to a "wake up and a shake up" which could be a response to a breakdown in communication between those on the ground actually taking care of plants (and those directly managing them) and those at the top under the influence of ideas about ecology and diversity from other stakeholders.

Unlike his line manager CC2, who said that working so closely with other people "can get a bit claustrophobic at times" CC3 simply stated "the terms and conditions are good". He appeared uncynical about his duties, and demonstrated a high level of job satisfaction unlike BR3, the keeper in Brandon Hill Park who had been very questioning about his duties. CC3 demonstrated the compliance of the instrumental orientation but this, probably due to the nature of the organisation in which he worked, had been subsumed by the solidaristic, leaving little room for any real agency or independence of mind that might be required to innovate in planting. Again this would be the humanistic way of looking at it.

Key findings CC3

1. Traditional horticultural practices, such as monoplanting of azaleas are still in full force in city parks that have the resources to do them
2. "A blast of colour" in March/April was the reason for this monoplanting.
3. Decisions about are made by teams of on site employees in Parks, based on successful projects in other parks.
4. The tall plants in NP is seen as a landscape obstruction in some quarters; golf balls get lost in it.
5. Friends' groups have varying levels of influence. In the city of London

6.3.3.The City of London as an organisation. A summary

The City of London was hierarchical, uniquely well resourced and high functioning. As Matheson said

"to achieve such internalized control, organisations need to minimize the conflict that is generated by the order giving hierarchy. This can be accomplished through considerate styles of supervision and the cultivation of personal ties between supervisors and workers.staff have a great deal of trust and confidence in their immediate supervisor but much less in top management"

"Local work groups can facilitate organizational control if they enforce standards of work output set by the group to ensure that all members carry an equal share of the workload. Littler and Salaman (1984) have observed that workers may impose management controls by engaging in self policing. In this situation, those who meet group output standards.

The three interviews at the City of London were all similarly uncynical. Job satisfaction came across as quite high. One could summarize the three interviews that gave the impression of being peaceful, productive and presenting no barriers to naturalistic planting other than a lack of experience or knowledge on the part of the park employess. CC1 had a heritage of naturalism to uphold which he managed by using ecologists. CC2 was on the ground doing an effective job of administering the paternalistic control methods of the City of London, possibly by way of exploiting (in the least malign sense) employees desire for social acceptance and respect. CC3 was a keen employee for whom stability and group belonging were the driving work motivation.

Despite no lack of resources this closed, organised and well resourced traditional culture left little room for new ideas in planting . The methodology described the unique character of the city of London, not always in favourable terms (Monbiot 2011, Shaxton 2011). It has been presented as, politically, a club that it is very difficult to join which may limit the space for new ideas to take root despite the presence of skills, willingness and resources with which to implement them.

6.3.3. Sheffield City council

The three interviewees for Sheffield city council were CC3, regeneration officer. SH2 and SH3 who were interviewed together .

6.3.3.i Sheffield city council interviewee number 1. SH1. Regeneration officer.

SH1 defined his role as regeneration officer as a middle man between friends' groups and the council. He described his job as encouraging friends of groups to have ideas and then helping them put them into action by accessing funds.

> *"Basically we all have ideas myself and colleagues. ….We go an meet with friends' groups and local people in the area to go and get a general consensus in the area as to what they see in the master plan"*

SH1 did not freely give his own views but, as with all the interviewees, the interview allowed them to emerge. He said that friends' groups had issues they were concerned with such as playground structures, and they campaigned for money to improve them. This supported claims by BR1 about friends' groups; that they were champions for specific causes and would mobilise around that cause.. He said that people did not express much interest in the planting of parks and wildlife in the main, this may be because they do not perceive themselves as being in a position to influence them, this is an issue worth exploring. Park users accepted and appreciated the mature landscapes around them and did not much want them to change. Park users particularly did not want to have their views (as in vistas) interrupted. As the interview progressed emerged that said park users did actually express an interest in "the wildflower side of things", showing that perhaps there I a growing culture of nature appreciation in park users.

> *"I suppose more frequently it comes up now because people are aware that there are wildflower areas being created elsewhere and they want to see that in their park"*

On the subject of planting in general SH1 said that he was encouraging friends' groups to plant trees (for which the council had put aside £50,000) and that he understood wildflowers to be

> *I say wildflower areas but as well you know this does not necessarily mean native wildflowers but can be a combination of many different sorts of plants that would encourage wildlife and look very nice"*

He did say however that he thought wildflower plantings looked "scruffy" at certain times of year, were not suitable for entrances (a view repeated by another Sheffield interviewee) and needed a backdrop. Like some of the interviewees in Bristol and London, landscape context was considered to be relevant to NP. He thought that wild flowers could not replace rose beds or other flower beds that were features in themselves.

> *"if there is money available people like to see it spent on specific features in the parks. More physical features. Maintenance is an issue. Trees need to be watered etc…the aesthetics of wildflower meadows could be relevant. Meadows are not nice looking all year round. They can look unkempt"*

SH1 was a detached figure. He did not refer to his colleagues by name. He did use "we" but less in reference to a team than to Sheffield city council. Although he said that friends' groups and park users liked mature landscapes and found wildflowers scruffy the impression was that these might be his view as these two themes emerged several times during the short interview. The quantitative study, in particular the comments, did not reflect this point of view. None of the repondents to the survey said they preferred trees and mature vegetation to the meadow planting.. He was one of the interviewees who demonstrated the same sort of impersonality and compliance as BR2 had in the city of Bristol (although in SH1s case it was less pronounced). This may have been due to a similarity of his job description, even though unlike BR2, SH1 was not a manager, but an officer. Much of his time was spent liaising with Friends' groups and other stakeholders. His personal motivations to work fitted *somewhat* into the model of Matheson' instrumental orientation although he came across as having a public service calling; being very much in the service of park users. The instrumental orientation is the one where "people engage in work to obtain monetary rewards and other utilitarian rewards such as promotion, fringe benefits, holidays, good working conditions, job security and convenient working hours". SH1 also demonstrate a vocational orientation.

An instrumental orientation would explain why SH1, a regeneration officer, showed little interest in expanding the means of regeneration into wildflower

planting. He was focussed on management plans, friends of groups, fixing physical damage and maintenance neglect issues and planting trees. (Which could be argued to fit into maintenance/conservation). Another viewpoint would be that SH1 was not in a position to have many goals. He was an officer for whom the main part of his job description was to facilitate others in achieving their goals; his own goals were limited to planting trees He was the only interviewee in any of the local authorities to mention ideas such as how beneficial species diversity was in the control of diseases (although this was in relation to trees). In fact although he did not state it explicitly it emerged during his interview that trees were actually very important to him which linked to him saying that people liked "mature" landscapes. One could extrapolate from this that trees for this officer were more important than bedding plants, for example. Parks employees already have a suite of traditional vegetation types to choose from , with varying benefits to the environment. Trees and woodland can be seen as a form of naturalistic planting.

> *I suppose most of the planting I have been involved with has been trees….I don't just stick to native oak and things like that I do plant a variety of different ……not just for wildlife and aesthetics and reasons like that but because of various tree diseases and things like that so we are trying to increase the number of trees species in the park.*

Findings SH1

1.Friends groups are champions for specific causes. These are mostly landscape interventions such as playgrounds. They influence decision making.

2. NP in the form of meadow planting is still seen amongst some greenspace employees as messy.

3. NP, or more concretely wild flowers, is seen as a solution to problem landscapes, such as spoil left over after development.

3. Officers and managers in greenspace may only have time for a few goals, often things that are personally important to them.

5. The culture of wildflowers is growing which trickles into local authoerity consciousness. Local authorities respond to requirements of their users rather than initiate change.

6. Officers have a spectrum of vegetation types to choose from and associated skills with which to cultivate them. Some of these vegetation types, such as trees and woodlands, could be perceived as naturalistic.

7. What park users like, and what they are reported as liking by local authority officers, can be quite different.

6.3.3.ii Sheffield city council interviewee number 2 . SH2 . District parks officer

SH2 was in charge of the parks in Sheffield of the South of the city. He had a senior, decision making role with many aspects of park management, including vegetation choice. He spoke with clarity about how the parks department was organised and came across as having a very thorough understanding of how his organisation worked and the mechanisms by which parks could be maintained to a good standard. He also appeared to be settled in his job and to have a good relationship with his employer (as did all of the interviewees in Sheffield).
His decision making, as was mentioned by SH2, was influenced by Friends' of groups as they

> *"help steer what we do in our parks sometimes the mechanism to bring funding into the parks"*

> *"we have a ranger service, we have a development section, we have a policy and performance section all these linked together to make for an efficient service….master plans allow a timed and strategic approach to what we do"*

As far as getting the work done SH2 said that there was trust between the management and contractors and virtually no service level agreement""

> *"they know what need to be done they do it and charge us for that more or less on a trust basis***"**

SH2's day was "diary lead or meeting lead". At the time of interviewing, like Bristol, some of the greenspaces in Sheffield were being looked after "in-house" and some were being looked after by a contractor called Streetforce. This required many meetings with Sheffield city council employees to make sure interests were being represented. SH2 was both a client representative to a contractor (in this case, streetforce), and line manager of parks maintenance staff. In relation to naturalistic planting he drew attention to his own limits in terms of expertise and to how a collaborative approach was necessary. This echoed CC1, also in a positon of responsibility, who highlighted the necessity of specific skills to initiate and maintain NP

> *"Its not just a question of doing whatever you like you have to get expert advice…I am not an expert on it I am knowledgeable enough on how to maintain a park and do the formal bedding.*

SH2 said that one of the barriers to NP was that responding to what people wanted in terms of wildlife can cause confusion for other greenspace users. He cited an example of an open area of grass that was subjected to a change in the mowing regime; from a fortnightly mow to a less frequent 8 times per year mow with a "batwing" mower. This was initially done to save money. subsequent wildlife benefits such as presence of skylarks were noted and the area began to be developed for environmental reasons by groups of people interested in biodiversity. …..but the residents' had sensed the cost cutting and lobbied to have it cut.".

> "its not always what does your service want to do or what do your friends of want to do its the other pressures that come in of why it is being managed in a different way"

There was some evidence of this in the quantitative study n the comments of the respondents, some of whom says that the council should not use NP to cut costs. And that it "looked like the mower forgot a bit"

This was the first example of failed efforts to establish naturalistic planting mentioned by SH2. He also mentioned a second example that had failed for other reasons due to poor relations between the rangers and the horticulturists.
An annual wildflower meadow had been sown in a park in Sheffield with some sort of contact with Sheffield University;

> ***"****that looked <u>absolutely</u> fantastic I was really <u>impressed</u> with that****".***

It had been very successful the first year in a park in which formal bedding had not really worked. The ranger service, who had had a base in that park, and parks service agreed to jointly undertake the site preparation and resowing of this meadow in subsequent years.

> *"We would spray it off, we would rotovate, the rangers would come in, give it a good rake , and then spread the seed and rake it in, what ended up happening …….it became more the principle of well we are not going to do this if you are not going to do your bit". "There was this assumption that the rangers didn't do that kind of work"*

SH2 highlighted structural professional differences between horticulturists and rangers

> *"Its like well we know what you do…they know what we do but we don't seem to make the link that well together".*

Later in the interview SH2 again alluded to another relationship issue; this time between his park department and other organisations such as the Sheffield Wildlife Trust He drew attention to the gap between wildlife and horticulture and suggested that wildlife organisations should be the champions for NP.

> *"they put down this sort if wildflower mix down there and that's been great they did it for two years the problem is that last year was the last time they did it and the point is that will not happen because you haven't got someone driving that [a champion] "*

And that he would have chosen to mow

> *if we had done that we would not have put in a wildflower strip down the side we would have just put in grass so that we could just mow to the edge.*

And that there was an apparently unbridgeable difference between horticulture and wildlife.

> *"the difference between us and the Sheffield wildlife trust are more into that type of way of thinking. You've got us up at one end of the scale, them up at the other."*

> *That wouldn't have happened if it had been us because we'd have looked and thought well instead of putting wildflowers down there we'll spend the money on something else.*

Having spoken about the difficulties in establishing naturalistic planting SH2 mentioned some of the recent horticultural *successes t*o highlight that he and his colleagues were still able to do traditional horticulture. At the time of interviewing

Sheffield, like many of the local authorities was still recovering from the period of extreme change that characterised he 80s and 90s for parks departments whence costs were driven down in the name of competitivity and investment of any kind, including in such basics as plants had almost ground to a halt

> *"what we have done and done over seventy years now is gradually improve the bedding schemes we've gone from lets say in the summer an antirrhinum bed the cheapest bedding you can virtually get now we have geraniums and non stop begonias"*

But that

> *"if you look at different types of planting say wildflower planting there is none. Nothing it is because unfortunately people think bedding displays make your park a better park"*

SH2 did not specify who these people were, but having distanced himself and his colleagues from rangers and wildlife groups as has been discussed, highlighted the importance of traditional horticulture he may have been expressing his own views.

When asked about new planting SH2 mentioned the planting of 50 yards of new herbaceous planting. This had been planted either side of a path at the entrance to a park to replace some overgrown shrub borders.

> *"Well my guys really enjoyed doing that it showed that we were bringing back the old gardening and it wasn't just one team that was involved we were able to make that happen by bringing staff in from other teams with other skills like with a chain saw, good plant id …others designed it that was progress and we got a great reaction"*

In relation to this project SH2 repeatedly mentioned that plants had had to be "ripped out" and that they were worried about the reaction to the change, and also that he had had to have the commitment of all the staff to ensure that the project was completed. What they had learnt was that people do not like change (they had received complaints) but are easily swayed by good results. This idea may be a relevant one which will be explored further in the discussion. Difficulty in initiating change was taken as a given

> *"sometimes I sit back and think how the hell did we pull it all off"*

So how did he "pull it off"? He had been champon for the project and had raised money specifically for this.

"We got that money from within our service I had to make a case for it bit by bit I got the money for it…..it was the fact that everybody pulled together…In Graves. That was slightly unique to spend that sort of money on that area"

Matheson's theories in relation to SH2.

SH2 seemed to be a kind man with a respect for his employer and his colleagues. He accepted that despite the fact that he had expertise, and an interest in horticulture and the practical operations, in parks management his job was to facilitate improvements in the parks in his district by way of procuring money and fostering teamwork. It appeared that he was very accomplished in both. Like many of the employees of the local authorities that were interviewed SH2 had absorbed the ideals of, in this case, a left leaning organisation. Individuals seemed to be respected over skill, it was assumed skill could mostly be learnt while being employed; many of the Sheffield parks employees had come from other professions such as the Steelwork. Teamwork was encouraged and there was a "work of each for weal of all" undertone to his discourse. SH2 was, by his own account, able to get quite large projects done using persistence and powers of persuasion. He was a person who was able to set himself and achieve goals, such as the rehabilitation of a herbaceous border in a park in Sheffield. He was able to act as a champion for specific projects that he thought were important. However at no point in the interview did he associate himself personally with wildlife or conservation, and firmly anchored himself as a promoter of traditional horticulture. Although he said that he thought meadows looked very pretty he did not feel, professionally, that they were something he, as a district parks officer, should be doing.

In terms of Mathesons' theories of work motivation it could be argued that having started with the instrumental motivation as a young man, SH2 had made a [possibly] organic progression through the instrumental orientation into the solidaristic and vocational in equal measure. He was comfortable making team decisions and delegating and there was a warmth between him and his colleague, SH3, with whom he was interviewed. The vocational motivation is characterised by meaning being derived from the career itself. SH2 clearly cared about his job and his employees and accepted if not embraced the mechanisms within his organisation that were necessary for decisions to be made. the accomplishment

of projects such as the establishment of traditional herbaceous beds as part of a wider picture of bringing back tradition was important. It is worth pointing out that SH2 was potentially faced with similar procedural challenges to Bristol, in the pursuit of his goals, but he was able to navigate them to achieve them. This may be due to what Wright (2001) might call less perceived procedural constraints, as will be discussed at the end of this chapter.

Key findings SH2

1.Traditional gardening more important than wildlife. Goal was to "bring back to old gardening"

2. NP not part of his remit as a horticulturists

3. Champions for projects can achieve them. They have goals. They can overcome procedural constraints with high levels of self efficacy

4. Tricky relationship between parks maintenance teams and ranger service. Whether this was personal or to do with organisational constraints would be worth exploring.

5. Bedding makes for a better park.

6. Role for some officers both client and manager.

7. Spoke highly of NP but saw it outside his role.

8. People do not like to see things being managed in a different way. They think it is cost cutting.

6.3.3.iii Sheffield city council interviewee number 3. SH3 Superviser Sheffield City council

SH3 was interviewed alongside his boss, SH2. He was a supervisor responsible for a mobile maintenance team of 5. They looked after 13 sites. He had trained in the parks service from 1972 until 1991 and left for 14 years and come back in 2004. He had very little experience of naturalistic planting and, like SH2, said that the ranger service dealt with all the "environmental type stuff". SH3 was interviewed alongside his boss SH2 and there was a feeling of mutual respect between them. SH3 spoke highly of his team and with humility about himself. He referred to his boss and colleagues favourably and respectfully thoughout the interview and when talking about their skills they were all horticultural.

> *"I've got guys who are good with machinery, good mowing men and I've got gardeners who are top notch"*

It is worth noting here the order in which he mentions machinery, mowing and gardening.

SH3 came across as a friendly person. He was proud of having his job. Like many of the interviewees he was a traditionalist with little knowledge of naturalistic planting, his opinions, in the early stages of the interview were mixed

> *"Meadow planting was for the countryside. I am not a big believer in meadow planting in entrances to parks as I still think that should be formal bedding and managed lawns for the public to see…."*

But on the positive side

> *"It could help us as it would cut down on mowing costs….with a wildflower area you do it twice per year rather than gang mowing once a fortnight. It would also give some colour through the summer*

But like all of the parks employees he was able to see the negative;

> *"Because of the ways wildflowers meadows grow and the length of it you get litter problems. You get litter through it. You have to pick litter through it and there is nothing worse than looking at things that have been flattened by kids running through it…In parks…*

and the positive, the latter was expressed via the idea of familiarity, and memory;

well when you go back to being a kid we used to have some allotments near us and there was an area that was full of everything….butterflies and the lot and we would go there for hours on end….get back and a clip around the ear where the hell have you been. Coming back with sunburnt legs, nettle stings like every kid does"

SH3 was the first interviewee to mention nature and childhood, and memory in relation to NP. This echoes some ideas from the Burgess studies mentioned in the literature review that greenspaces are replete with personal and social meanings and serve as tangible reminders of childhood and community.

In spite of this, SH3s' personal views had been sequestered by the maintenance implications of NP. Unlike his boss before him who had had a good experience with a colourful annual meadow project in Concord Park. SH3 had no good experience of meadow planting. He had direct experience of litter picking out of messy tall planting. SH3 saw naturalistic planting through the prism of his day to day experience, in this case maintenance. For him there was a choice between mowing and not mowing, but the mowing would just be replaced by litter picking with the added risk of some of that litter being needles.

"I know for a fact that if I knew it was there [needles/burnt out wheelie bins etc] and somebody went and got injured I would get a short sharp shrift from Mark because we are in a claims culture and it is one of the things we have to be very very wary of"

SH3 was the only interviewee to mention that the "claims culture" might be a potential barrier to NP in city parks. This was not an idea that had been explored in the literature review.

SH3 was unusual in the interviewees of seemingly not having experienced the positive aesthetic experience of naturalistic planting in full flower.

SH3 was very proud of the achievements of his team of gardeners and their achievements of goals, embodied by national competitions like Britain in Bloom

"It does show how far the parks have come since 2000 because of our success in entente [florale] and Britain in Bloom. And I am proud to be a part of that because myself and my team there were nine sites went in for the Green flag this year. 8 won a Green Flag and four of them were myself and my team working in conjunction with other teams and we've got medals as big as a dustbin lid I think"

When asked about his skills SH3's first response was "man management skills" with horticultural skills following behind. He also said that until he left the parks service "I'd been brought up through the parks"
As far as planting is concerned SH3 reiterated that naturalistic planting was not for entrances when probed he said

> *"When you walk into a park you want to walk into a park and say wow that looks fantastic. The lawns look great, the borders look good. Then you go into your park, you've got your woodland and then you've got your wildflower areas ; kids having their picnics etc you can run through it all you can but its not suitable at the entrances do you see?"*

He articulated here something that was implied in a few of the interviews; That there was a hierarchy of landscape maintenance that had to be respected, based on transactions. The experience of walking into a park had to go from high maintenance to lower and lower. Why this was the case he did not say but it was accepted as a given.
He also said that "we are living in a funny time" (ie now!) and that children used to be kept under control and off the grass. And that now they were allowed to roam free in parks (rather than just in allotments and waste grounds). This may be a reflection of the gradual erosion of standards in turf management (Gilbert 1991), and thus a devaluing in terms of aesthetics and subsequent expansion in terms of amenity role, as was suggested by Fairbrother in 1970.

1. Wildlife appreciation is attached to memory. NP can represent te freedom of the past for park users.
2. NP can attract antisocial behaviour
3. People should be welcomed into park by formal planting; there is a hierarchy of landscape experiences
4. Goals and awards are important.
5. A “claims culture” may be a barrier to NP.
6. Machinery, mowing and gardening mentioned in that order
7. There is a skills repository in Sheffied.

6.3.4.Telford and Wrekin Council

TW1 Acting service development team leader.

TW1 at Telford and Wrekin council was chosen as an interviewee as he was already widely known to have been successful in creating wildflower meadows in public spaces in Shropshire where he worked. He had been suggested as being a suitable interviewee by James Hitchmough, the supervisor.

One of TW1's annual meadows.

Initial impressions with TW1 were that he was a friendly, confident man very happy to talk about his work. He was comfortable using both "we" and "I" wherever he felt appropriate (allying himself closely to his organisation as well as mentioning personal goals). He exuded the same confidence of CC1, in the city of London. Like CC1 before him, he fluently delivered the ample facts and figures about the size of his landscape remit…(very large) . TW1 demonstrated a very thorough knowledge of the history and landscape character of his local authority (he had been working there for over a decade) and was conversant in many aspects of creating different types of flower meadows and naturalistic planting on a very large scale. It is important to mention here that these projects, at the time, mostly used annual flowers, namely mostly in the form of "over the counter" flower mixes as created by pictorial meadows His job title was a (not very descriptive) "acting service development team eader" in the "Environment regeneration portfolio". He therefore functioned outside the parks department. Amongst his responsibilities were

> *"grass that we mow would go twice around the equator….if you made it a metre wide. It is something like the equivalent of 80 football pitches worth of shrubs".*

TW1 had goals ; TW1 made it quite clear that his main priority was looking for solutions for the replanting of vast amounts of shrub beds that had been planted

in the “New town” of Telford in the 1970s and were reaching the end of their planted life. His solutions had to be weed free as the use of herbicides was soon to be curtailed due to new legislation. He managed to combine his role of public service with a strong interest in vegetation.

In terms of knowledge TW1 was an autodidact who was very interested in planting; he had been on RHS courses and started off doing annual flower plantings and learning by trial and error. When talking about how he started TW1 summarised his whole approach

> *“ in the 1990s when I was managing Telford town park developed by the new towns commission It was a very very 1970s park used heavily with landscape roses which are about the worst things on earth I absolutely hate them and banks of buddleia which were great for a few weeks of the year and then there was nothing. Interspersed with that were very big blocks of hybrid tea roses and Laurel it was a bit of a boring landscape”*

TW1 differed from the previous interviewees as he was happy to express strong views and lay out clear goals. He expressed his opinion about what he liked, and was confident in his own taste. In the pursuit of these goals He was happy to take risks, acquire knowledge learn from failures of some plantings. The interview was interspersed with mentions of projects that had not worked.

In his role of champion for the cause of NP, he had taken a long term view of the job he had to do and invested a few years in compiling an inventory of the traffic islands and roundabouts and what they comprised: which ones had underground cables etc that could not be ploughed (as the agricultural practice of “chisel ploughing” appeared to be an integral part of the soil preparation) .

FMachinery is used in Telfor

As well as having a clear goal and being a champion for it, TW1 was technically very skilled in achieving NP; concretely the creation of different types of meadow. He made the whole process of sowing meadows and necessary site preparation sound straightforward with a five step system comprising a spray with weed killer, a cut (or “flail” as he put it), followed by cultivation (“power harrowing” sic) and a final spray. The final step being sowing.

The interview revealed that it was far from easy. It involved committing to a very long (18 year) contract with the private contractor to encourage them to invest in good machinery. This is a marked difference from the short contracts awarded by Bristol city council.

It involved making that contractor subcontract the agricultural practices deemed necessary for the establishment of naturalistic vegetation at a very large scale (such as power harrowing). It involved getting quite "stroppy" with the grounds maintenance staff when they inevitably and repeatedly mowed over target species. It involved seeking a variety of different species mixes to use at different sites. It involved extensive interaction with many people from seed suppliers, academics, contractors and colleagues. It also, crucially, depended on having management committed to, or persuading management of the benefit of, the projects. In summary it demanded the identification of solutions to any barriers, which could be called challenges, that might present themselves.

TW1 was able, when necessary to justify paying his farming friends to cultivate the roundabouts prior to sowing by using local authority language aptly

"In terms <u>of best value</u> FOCSA [the grounds maintenance contract] are not going to buy a power harrower which will be used once per year so we get in somebody who has the right equipment for two weeks of the year…"

TW1 knew what he wanted to achieve This clear goal is likely to override many of the potential barrier that have been discussed so far

"….since 1996 I have been very clear about where I want to go"

As well as having an understanding that he was going to have to try to work out how he was going to get there taking into account the may pressures faced by local authorities.

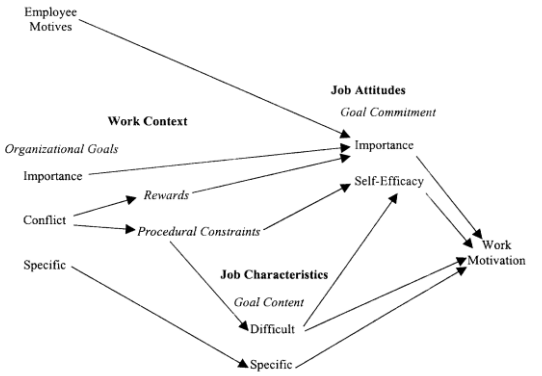
> *"One of the things I was going to do ……iis basically looking at the <u>landscape development side of things</u> which is basically looking at how the landscape of Telford is going to develop …..We then go into our toolbox with all these landscape prescriptions and say well we want a meadow, we want a wildflower meadow, naturalistic verges …..So we want a green space strategy and under that we want a visioning document to say how we see that interpreted based on customer complaints, consultation, new innovative ideas, legislation, reduction in pesticides. We have to try to marry all that"*

There were several things about TW1 that really stood out. He spoke with in-depth knowledge and a sense of responsibility; his job title was not descriptive,

nor was it a manager. He functioned outside of any recognisable job position, in fact he seemed to have invented his own job : “service development team leader” (having initially been asked with coming up with a dog fouling strategy”). What he said went against much of, what we might cautiously call rhetoric, we have come to expect of employees of parks departments ; For example that Compulsory Competitive Tendering was inherently bad; to the contrary he had used it to the benefit of landscape management to employ specialists to do specialist work, as per (Yates and Ruff 1991). He was also very positive about the unitarisation of the authority; Being “lumped in with cleansing” gave him access to a much larger budget than a parks department might have. TW1 carried none of the baggage and worn out cynicism of the parks professionals. He spoke of “solutions” and “vison”.

TW1 would be a very good example to illustrate further the Wright’s (2001) work on goal theory in the public sector. Fig x shows graphically that interaction between employee motives and organizational goals will have a bearing on how important a goal is, which, in its turn will incite “goal commitment” on the part of the individual. There are three theoretical elements to organisational goals that contribute to work motivation, importance, conflict and specificity. The first and last of these elements will have an unimpeded relationship with motivation. The middle one, conflict, as can be seen in the diagram, can be overcome directly with the use of rewards related to the accomplishment of that goal (an example of this might be a green flag award, for example) , or indirectly with high levels of self efficacy on the part of the individual pursuing those goals. TW1 displayed high motives to undertake NP, he also had high levels of self efficacy (thought to be stimulated by goal difficulty) which helped him to overcome procedural constraints, as well as the intrinsic difficulty of undertaking NP on a large scale. The organisation he worked for attached importance to finding solutions for the verges and roundabout of Telford and Wrekin which would have been consolidated with this self efficacy to result in a high level of motivation.

Exhibit 2
Revised Public-Sector Model of Work Motivation



Wright (2001) public sector model of work motivation.

From a humanistic point of view, Mathesons' theories about peoples' orientations to work TW1 demonstrated two of the major motivating forces ; an expressive orientation with the associated intrinsic rewards (ie making aesthetically pleasing meadows) as well as solidaristic leanings which depend on *"considerate styles of supervison and the cultivation of personal ties"*
He talked about the team he worked with

> *"we created this little team. The three guys next door who do the IT side of it, Chris who does the marketing and promotion. I've got the advertising upstairs and the admin support and customer services so I look at all the problem areas with customer services I get a front handle of what people like and dislike. What they are complaining about. These guys next door take all the information and produce stats from that so we know how many complaints we have got for this that and the other…."*

"Intrinsic rewards differ from utilitarian rewards inasmuch as as they are obtained from performing a task rather than from social interaction"
TW1 was unusual in that he spoke a lot about what he liked in terms of colour. He said that his aim was to establish a range of naturalistic planting types around Telford.

Key suggested findings TW1

1. Large amounts of space that need solutions in terms of vegetation lend themselves to NP. Crucially these spaces, in Telford, are not inner city parks with the cultural history. Traditional horticulture was barely mentioned.
2. Unlike city parks these spaces do not have a culture of formal management associated with them. A culture that in itself can form a barrier to NP.
3. If an individual has a goal, even a difficult goal, he or she can be motivated to achieve it in the right work context. Procedural constraints can be overcome in the absence of other conflicting goals.

6.3.5 Landlife International

Landlife is a registered charity and founder of the National Wildflower Centre in Knowsley and describe themselves thus:

"The Landlife Group includes the NWC visitor centre, a Merseyside-based community programme and our regional and national work of creative conservation. We are working mainly in urban and urban fringe areas to make better places for wildlife and people and to bring us closer together. By using simple wildflower mixes, based on common core species, we aim to create wildlife areas which have sustainable links to their communities"(Landlife 2008)
LL1 was a senior project officer for Landlife international, a charity whose aim it was to establish wildflowers in urban settings. Landlife is the charity that has coined the term "creative conservation" Their self professed aims are

- Bring people and wildlife closer together
- Promote creative conservation
- Encourage better understanding of healthy environments
- Address issues around climate change
- Deliver environmental justice

6.3.5. i LL1. Project officer. Landlife international

LL1 had a great deal of knowledge and experience of delivering naturalistic planting in cities. He had been involved in long term experiments to create heathland on a large scale by inverting soil (changing the profile of soil to make it favourable for new plants to establish), at the time of interviewing was involved with the Woodland trust using this practice of soil inversion to encourage establishment of woodland in conjunction with the creation of meadows (thereby rendering juvenile woodlands more attractive and species diverse in the short term). He had also successfully sown annual meadows on various estates. He had been working for Landlife for 16 years and, despite the fact that the organisation had been founded more than 15 years earlier, when he joined there were only

three employees. They had benefitted from money form the heritage lottery fund and built a National Wildflower centre.

LL1 was knowledgeable, committed and competent. He described many successful projects and the positive feedback he had received from the people who had benefited from his projects. He, like TW1 before him, was instrumental in delivering the service of his organisation and seemed conversant in all aspects of establishing meadows in cities. Landlife is an organisation that champions NP, and LL1 was a champion himself. His goals were enmeshed with those of his organisation. Despite the depth of knowledge and commitment to the work LL1 had a detached air; it was very difficult to gauge his own motivations for trying to create meadows.

LL1 was the most educated of the interviewees and had an Msc in biogeography and another Msc in applied ecology; Like TW1, he had a high level of personal commitment to this area of work. His commitment and high level of knowledge gave him the air of having a kind of calling. When asked about whether he had encountered any barriers

> "No not at all it has always been the most heartening thing in our experience"

Despite him reporting no barriers at all to NP, it was thought that an exploration of LL1s experience might deepen or underpin some of the findings of the local authorities. Threads of this idea of a calling ran throughout the interview. LL1's discourse was quiet, rational and objective as well as being unusually positive. LL1s job satisfaction was quite high. LL1 had found an organisation (Landlife) that corresponded with his ideological and possibly political sensibilities thus the organisation and individual had become enmeshed.

> *"It is one of the first wildlife groups. It was started by four students from Liverpool University really. They had finished university and they wanted to do something different"*

He had joined and had chosen to undertake the work of the organisation. He was very knowledgeable about the technical aspects of creating naturalistic planting and explained how the message of the organisation was filtering out into other local authorities.

> *"People at a supervisory level have actually moved jobs and wanted to take some of these ideas with them. For us particularly it is good because it is extending it to Warrington, Sefton and St Helens because sometimes those landscape managers are not wanting to move so far away so they are getting a job with a nearby local authority and taking the knowledge with them"*

This highlights the importance of champions outside local authorities for the promotion of wildlife rich vegetation, who work within organisations that are themselves champions. These organisations formalise knowledge and give local authorities the confidence to innovate. They form relationships with individuals within the local authorities who are committed to NP. The importance of these relationships is highlighted here by LL1 who reported that working with LAs had been relatively seemless. This may be due to his own personal qualities. The importance of relationships to overcome barriers to changes in vegetation was also suggested by SH2, who reported that a breakdown in the relationship between him and the ranger service had had a detrimental effect for wildlife in a park.

LL1's almost seemed to have a missionary role, that influenced employees of local authorities to become champions for NP

> *It tends to arise where people perform tasks that enable them to make full use of their skills and where they have the capacity to choose their goals" (Matheson 2012)*

We could argue here that while TW1 too had strong intrinsic motivations, these were coupled with solidaristic and to a point vocational motivations. LL1 had very strong intrinsic motivations that had found a very fruitful repository in Landlife International. This will not be explored in depth here as this study took the position that using the Matheson theories would really only be valid for local authorities. In terms of goal theory, however, LL1s motivations had collided so successfully with his employers ideology that he had managed something of a coup in terms of species conservation. He had managed to naturalise a native flower called Devil's bit scabious on which a rare butterfly (Marsh Fritillary) depends, on a council estate in Knowsley. To prepare the site he had sold the topsoil and with the proceedings had financed the project.

Not only had LL1 established a perennial meadow in an estate in Knowsley, he had done it at no capital cost (due to the selling of the topsoil) and had naturalised a flower that was the food plant for a an endangered butterfly. In terms of the mission of landlife this was a very difficult goal achieved.

Findings LL1

1.Organisations based around a specific goal can have champions for that goal as their employees. These champions can go out as missionaries and encourage Greenspace managers to become champions themselves.

2. Projects can be made cost effective. The barrier of cost can be overcome

3. Soil stripping is an effective means of preparing soil, particularly for the establishment of rare species. Topsoil can be sold. Machinery is required to do this

4. Most local authority employees, with the right support, are willing and able to undertake NP as a landscape solution.

5. This support needs to be provided in the form of training and reappraising landscape approach.

6.3.6 Green Estate

Like Landlife international Green Estate, an organisation based in Sheffield was an organisation concerned with naturalistic planting. They described themselves thus;

> ***"Green Estate is part of a family of third sector organisations working to improve the environment in the Manor & Castle wards of Sheffield… if the relationship between the land and people were made to work again, just as they would have for instance in a rural area or in the past, then we could bring life back to the waste lands and make the green environment a valued and productive asset"***

Green Estate is a social enterprise. It started off at the end of the 1990s as a funded regeneration project within a deprived area of Sheffield. It is now an independent organisation that gains its income from a seed business (pictorial meadows), providing "caring support services" for local authorities, and landscape maintenance for local authorities and, increasingly, private clients. Green Estate is a specialist in making meadows and on its website offers one of its services as "providing your dream meadow". Its client base is very broad : "Local Authorities Departments, Housing Associations, Schools, Friends of Park Groups, Universities, Visitor Attractions and Private Landowners" It offers these clients support in the implementation, establishment and maintenace of their "dream meadow"**.**

As has been discussed previously in this study, interviewing the experts was seen as a way of underpinning and exploring barriers that may have surfaced in the local authority interviews. As will be illustrated in the following interviews Green Estate, like Landlife, ostensibly was occupied with offering solutions to barriers to naturalistic planting in parks and other open spaces. It was hoped that having the view point of these organisations would enrich the themes that had emerged in the Local authority interviews, as well as offering the discussion and concluding thoughts an,on record, third party point of view. There were 3 interviewees at Green Estate. GE3; operations manager, GE2 contract manager and GE1; director.

6.3.6.i. Green Estate. GE3 Operations manager

GE3 was responsible for the landscape maintenance at Green Estate.

"I am absolutely in charge of the maintenance of all planting schemes"

He was very willing to talk about his work and communicated with clear objectivity making issues around naturalistic planting sound simple, as would be expected from a practitioner at Green Estate. His insights into barriers to NP were very perspicacious, and evolved from a first hand perspective. He detailed at length the nature of the maintenance of all the types of planting that he looked after. GE3 demonstrated an advanced understanding of the spectrum of maintenance requirements of any park. He was conversant in ideas about care, and talked about "tidy maintenance", the "hierarchy of operations" (at the top of the hierarchy is response to calls below that is litter graffiti").

Firstly he said there was a misconception that naturalistic planting was low maintenance – it wasn't at all. The mowing regime around NP had to be more frequent than an average local authority high frequency mowing regime for amenity grass (14 times per year).

His attitudes towards sown naturalistic perennial vegetation [perennial meadows] were generally quite negative as he said it was hard to establish, attracted litter and "trampling" and succumbed to weeds very easily. He said that his preferred approach was to take preexisiting vegetation and improve it using nutrient tolerant prairie plants for example.

"this is more a case of taking what exists and trying to improve it rather than putting something in that existed before"

This approach of improving what is already there echoes BR3, the keepr of Brandon Hill park, who also said that this was his approach to NP.

GE3 suggested that there were different types of mindset within greenspace management in local authorities and the right kind of relationships had to be forged between expert organisations such as Green Estate, and local authorities. Indeed, he had a strong and fruitful relationship with a greenspace employee within Seffield city council who he described as

"a bit of a brambles man"

Somebody who tended “towards the lets let it go wild”. Contrary to what one might expect from an individual dedicated to NP GE3 said “*I am much more of the tendency to say lets manage it a little bit”.*

On the subject of weeds, GE3 said that there were certain weeds that were poorly tolerated;

“The public will only notice certain weeds and those weeds are docks, thistles, brambles and nettles”

This was borne out by the quantitative survey in Meersbrook Park; the least preferred plots differed from the others insofaras they had docks and nettles in them. The comments also attested to this negative preference.

GE3 said that the main barrier to naturalistic planting was peoples’ perceptions that it looked messy. He described a site in detail that was next to some shops and said that it had “very good colour content” but that the vegetation was “too luxuriant” and that they “didn’t have control of the surrounding mowing”.

> *“but if you had taken that growth and put it in the middle of that really large site it would have been a really good bit of perennial planting”*

He was able to see the potential and benefit of naturalistic planting yet was very mindful of how it would be perceived. Even though GE3 was ostensibly employed to maintain, amongst other things, naturalistic perennial planting he came across as very cautious in regard to its appropriateness in public spaces

In terms of city parks GE3 brought up the idea that parks have their own cultures, into which NP fits to a greater or lesser degree..He said that If a park already had a habitat or ecology area NP would be more easily accepted. However in a formal park, such as Norfolk Park in Sheffield, that has a history of high maintenance, he said “I suspect you would get a lot of resistance”. This idea of a pre-existing culture of naturalistic planting resonates with ideas of familiarity being having a positive influence on preference.

> *but even then I know one place: concord park where they have some that is looking good and has been very well accepted….”*

He also mentioned the idea of landscape message : ie communicating the intention by way of “cues” (mowing around the edges of naturalistic vegetation for example). He understood that people have different sensibilities, both management and users.

"there have to be cues that's say this [ie naturalistic planting] is supposed to be here"

Like BR1 who said that there was a sector of the population who like things to look "artificial", GE1 said that there are some people for whom neatness is much more important than wildlife and will not be persuaded to accept anything that looks "rough". Others are "interested" and "clued up" This may be due to ecocentrism, education, familiarity or a combination of all three.

> *" There is a split. There would be people who are just as interested in how neat everything is…… And then there are people who are interested in the flower content and the possible habitat and they are already clued up as to what we are doing"*

GE3 suggested that when there is no context or history it is easier to experiment

"the use is not designed to be in anyway permanent there is no history or context to the work that he does"

As far as local authorities were concerned, GE3 thought that a major barrier might be to do with the way they were organised. He said maintenance in parks was "accountancy driven". Driven by the number of times an operation takes place rather than the end quality. He said in the context of compulsory competitive tendering he could not see it being done any other way. He said that the only exceptions were where individuals [champions?] in tha parks have endeavoured to make it so, and those, generally speaking are parks that aim to become green flag parks.

Findings GE3

1. GE3 said that barriers were perceptions. Particularly around care. Messiness. “too luxuriant”
2. Good relationships between greenspace managers and specialists was key to success.
3. The greenspace managers within the LAs would not necessarily have the horticultural mindset.
4. Mindset on the part of park users also a barrier. Some people like things tidy. Some people don’t mind mess. This is based on experience, knowledge and culture.
5. LAs driven by numbers.
6. A greenspace manager should manage a maximum of five sites. Managers are spread too thin.

.

6.3.6.ii Green Estates. GE2. Contracts manager.

GE2 at Green estates was a qualified landscape architect who was the contracts manager for Green Estates. He was responsible for both commercial contracts and contracts with local authorities to look after some of their green spaces. He was keen on using annuals and creating annual meadows as in his experience perennial meadows did not work; they were hard to establish and "pests, slugs, cats, children and people" were all a problem. Annual plantings "are far more stunning". It's a lot quicker to get a result from annuals. He also sowed areas with single species such as flax as a short term ornamental solution. He was also not interested in using grasses in his mixes

"I have never seen a <u>good</u> wildflower mix with grass is it in an urban area"

Apart from the barriers he mentioned before GE2 said that one of the major barriers was making the timeframe of [annual] planting fit with the timeframe of the bureaucracy of local authorities. He said that even if a local authority knows about it in November "they have to go through all these processes and they have to go out to tender….write a specification……tender process"

> "*you can only sow between March and at the very latest June. You get a very late show. So you have a critical window really you need to sow in March, April, May to get a good display you have to work back from there. You need to spray off beforehand…a lot of the time they end up flowering late or you have to wait another year"*

One can see here why a contractor in landscape maintenance might be forgiven for taking Gilberts (1991) "path of least resistance".

He said that one of the major problems with all NP, including annual planting when undertaken repeatedly on a site, was weeds as was seen earlier in this study. Green Estate at the time was dealing with all sorts of different types of soil, in demolition sites for example, often had imported soil placed on top of them. It was not just docks and thistle, it was knotweed, bindweed, and clover clump.

> *"Sometimes sites have huge weed problems for example we had a site in North Sheffield whose weeds changed every year …….we find that you can't keep on top of the weeds so we stop and do something about it and treat the weeds with selective weedkillers"*

For GE2 the ornamental value of the meadow was the most important thing

> *"It depends where you put it and why you want it because if it is in an urban area then it really has to be suitable for people. If it is a wildflower mix because you want the beasties and insects in there and you want it for those reasons the visual thing is not so important then that is fine"*

GE2 also said that local authorities find it difficult to visualise what the results are going to be, which makes it difficult for them to commit to it.

In terms of cost, GE2 had a different point of view from BR1

> *"…it is cheaper than bedding. Its got to be. If you were to do a cost analysis on that you would find out it was. The amount of flower content that you get per square metre per pound it must be cost effective to do it…..against something like grass it may not be…"*

GE2 was showing signs of becoming *fixed* in the view that colour was the most important thing and the easiest and quickest way to give the public the colour that they needed was to create annual meadows. These, however, needed to be created in a limited timeframe, required the use of herbicides and needed resowing regularly. He had witnessed the publics' positive reaction to his meadows. GE2 maintained that what people really need is colour and the more the better, this can be achieved by sowing 100% flower annual mixes. Grasses and perennials will compromise the amount of colour and therefore are to be avoided. GE2 was experimenting with single species such as flax to achieve instant results of "block" colour. GE2 seemed to have the clear goal that colour in cities was the most important thing, this could be provided by annuals on a year on year basis on a very large scale. In some ways what he was providing was similar to bedding, albeit on a larger scale and sown from seed.

As far as decision making about NP was concerned, GE2 said that they rarely dealt with parks departments. He said that decisions usually came from regeneration departments or, if it is with one of the parks, it is with the community liaison officer.

“it never comes directly from the park. It is the community that wants it. 9 times out of 10 it is the community that wants it. Their councillors or local authority regeneration officers or community liaison officers”.

GE2 also said that responsive management of perennial vegetation was a problem. They had tried an area of perennial naturalistic planting in Sheffield at Fairlie gateway where, after four years, there was “too much weed content”. He said that they ahd not managed it well enough, either mechanically or using selective weed killers.

Findings :
Weeds are a major problem for annual planting year on year.
Some experts believe that “colour” is an essential requirement in NP for city dwellers
Some experts still believe that wildlife quality and aesthetic quality are mutually incompatible.
Green Estate is a contractor who offers meadow type planting as a service/product. Thus working within the timeframes and bureaucracies of local authority decision making affected him first hand.

6.3.6.iii GE1. Green Estates. Director

GE1 was director of Green Estates. She was interviewed 5 years after GE2 had been interviewed and was a very committed and dynamic person with a training in both horticulture and ecology. Like LL1 and TW1, she was educated to masters level. It was very interesting to interview her quite a long time after the other Green Estate interviews as trends had changed and knowledge accrued in naturalistic planting since the first interviews. This will be explored.

She started the interview by saying that the way to succeed with naturalistic planting in cities was to have a number of approaches, each one responding to the particular needs of the space. Site specificity is key. For example A demolition site may have high fertility and would need to be sown with a mixture of annual, biennial and perennial species, whereas an area of amenity grass could be sprayed off and sown with perennials. Site specificity is a form of responsiveness to conditions, a theme that has already been partially explored in this part of the study.

GE1 was asked directly what she thought barriers to NP were: These will be explored in relation to the interviews with the local authorities.

Firstly she mentioned that a lack of imagination might be a barrier; She said that in the 70s and 80s parks managers had been mostly male and had really lacked imagination, they had been trained in another era where machinery was king. These days parks employees were low skilled and occupied with responding to immediate issues such as graffiti and the like, and that to have naturalistic planting in a park you needed an individual with responsibility for the space prepared to take risks. This had been partially borne out by the findings of the study; some of the interviewees from the local authorities had "lacked imagination", and all were male but they were not necessarily all low skilled. It would be true to say that daily work in inner cities in parks is spent responding to immediate issues, including issues of antisocial behaviour.

Secondly, On the technical side, she said that in the past, for Green Estate, barriers might have been technical. But these had now been overcome. *"in the past we have had technical issues around perennial planting but we have solved*

those; we have a multiplicity of solutions and there is a much wider interpretation of meadows that involve a lot more skill and knowledge in design and delivery"

Thirdly she mentioned that the "unknown" is a barrier for Las. She also said that once there has been one successful scheme this will expand very quickly and suddenly there will be a lot more. The interviewees in this study had a small amount of experience of successful schemes,and had found it difficult to replicate results year on year. It would be worth noting here that these were in relation to annual schemes.

Fourthly she mentioned the interaction between the individual and the organisation might present a barrier. GE1 mentioned that As far as working with local authorities was concerned she said that in her experience they were very varied and that she worked with some "fantastic inspirational people" and that the most influential factor was the management of the organisation

"the brightest person in the most uninspired management is under terrific strain".

This further enhances the findings that motivation and performance might depend on a successful union of the aspirations of an individual and the aspirations of an organisation as suggested by Wright and discussed in Chapter 2.

Another barrier suggested by GE1 was the expectations of park users. GE1 said that what people want to see is colour and mown edges; they perceive weeds as being "ugly, unloved and uncared for". This supported the findings from the quantitative study; the weediest areas had been the least preferred by the park users.

GE1 also said that edges need to be mown sharply and frequently, which supports this idea presented in chapter 2.

GE1 said that achieving long term perennial meadows was

> *"absolutely possible and that things had changed a lot in the last five years.*
>
> *"We have really made huge leaps; we have recorded everything and have collected a lot of replicable data on master sheets about individual species. That information is used to design perennial meadow mixes that take into account inter-species competition" ;*

On the technical side Ge1 summarized how to succeed with the establishment of perennial meadows; To achieve successful perennial meadows a mixture of 25 –

35 species will be sown, The substrate must not be contaminated and will be tested in a greenhouse prior to use, particularly on large scale projects. The site will be sprayed in the summer and 100mm of green waste compost spread over it onto which perennial seeds will be sown. The alternative to this is to purchase meadow matting (a bit like turf – increasingly popular). There are 12 standard mixes of perennials which differ according to suitability for shade/moist conditions. Green estate, after 20 years of experimenting had gathered a body of knowledge and is continually amending master data sheets. She had, for the record, gained a good deal of her experience from the landscape department at Sheffield University.
GE1 did not call what she does urban ecology or horticulture, she called it *"dynamic plant management".*

GE1 drew attention to fundamental differences between horticulture and ecology. She said that horticulture seeks to isolate and perfect and suppress nature using brutal methods whereas ecology seeks stability through working with what is already there.This may go in some way to explain why some of the interviewees from the local authorities, notably BR1 and SH2 felt that professionally NP was something that they felt was not in their job remit, as career horticulturists. This difference in approach also may explain the tension between the horticulture and conservation factions within some local authorities.

GE1 suggested that a barrier to NP might come from the conservation movement itself, due to NP's use of non-native species which can be seen as a threat to the UK flora by protectors and promoters of wildlife. She, as an expert, had fully explored the biological implications of creating and sowing non-native perennial meadows on a large scale, with a view to overcoming barriers presented by conservationists. She revealed that the thinking is actually rather complex; she mentioned that there are two main threads of discussion in relation to the designed perennial mixes. The first in relation to genetics, the second in relation to species diversity. On the subject of genetics, notably on the idea that non-native plants might cross hybridise and threaten native species, she said that very little was known; it was quite likely that the genetics of most of our native species that we share with other countries has already been contaminated. (Shirley

poppies were her case in point). That contamination had happened by way of peoples gardens for centuries. She therefore felt confident that her perennial mixes did not constitute any real threat to the genetic integrity of British native flora. She said that as far as associated diversity is concerned she had a lot of anecdotal evidence about the wide array of other species that interact with Green estates' planting. She mentioned goldfinches, raptors, small mammals, pollinators. She mentioned "webs" of pollinators and said that floral In terms of this study, this was not mentioned by Las and Conservationists were not interviewed

"variety, complexity, accessibility and longevity are the key to promoting diversity" (rather than nativeness)"

In terms of our study this type of dialogue may be out of the reach of most greenspace employees as much of it is debated between the experts themselves. A lack of accessibility to the facts about the actual wildlife value of NP may in itself constitute a barrier for local authorities. This is why these champions in the form of Green Estate and Landlife are so valuable.

Another possible barrier was cost ; While annual meadows cost £3 per square metre to establish perennial meadows cost £15.This is for the sowing or laying of meadow mats and management during the first year of establishment. She said that the problem with annual meadows was that after three years they are contaminated with weeds and you have to start all over again unless, as was done in the Olympic park, they are sown into absolutely sterile soil on a very large scale in which case the year on year return is much more favourable.
GE1 said that to get people to commit to spending that kind of money you have to *"take them on a journey"*. Local authority employees are risk averse and need to be persuaded. Start off by sowing a small area and then staying with them and giving them the confidence to sow more and more. She said that people are persuaded with images, and that images are manipulated sell naturalistic planting. Whether those images accurately represent the "end product" or not is immaterial. The marketing aspect is not to be underestimated.

GE1 said that while a major barrier to establishing meadows was cost, the "absolute key" to successful naturalistic planting was *trust* and actually *doing the work for clients* or, when required, training the staff within a local authority. She said that if there is one thing local authorities hate more than failure its being abandoned by the people who made them promises.

> *"They hate having spent money and being left with egg on their faces".*

She also said that this relationship of trust allows Green estate to make difficult short term decisions with a view to establishing successful meadows long term, such as spraying things off/cutting them down when they are looking good and getting LAs to commit to two year weed treatments for some sites.

GE1 said that GE had new approaches to planting management and that it was "all about resource input. The way we approach planting management is to have the "lowest input for the greatest gain"

When asked about whether most of her work was in the South or the North she said that she worked in both the North and the South of England. She clearly had a social agenda.

> *"We work on both rich estates in the South of England and the cash strapped North. That's fine by me it appeals to my Robin Hood tendencies [ie redistributing wealth].*

According to GE1 another of the major barriers to naturalistic planting was grass which has a competitive advantage in our climate : "grass loves this country and this country loves grass". Why is it so competitive? "because it "overwintergreens", is always one step ahead and flowers continually all summer. She did not put any grasses in her mixes at all as they tend to outcompete flowers.

Another major problem was *contractors cutting costs* and not doing what they are contracted to do. She said that Green estates will work with landscape architects who then work with contractors, many of whom are actually civil engineering companies and they will cut corners to save costs and do as little as they can get away with to make a profit. The way around this is to specify the meadow execution as a prime cost and take it out of the main contract. GE1 described as many solutions as she did problems and, after 20 years of pursuing her goal of establishing naturalistic planting in inner cities, had come across many of the problems. GE1 came across as tenacious, enthusiastic, good humoured and pragmatic as well as highly independent minded.

Green estate was funded in the majority by commercial enterprise the two main strands of which are landscape Services and the seed selling company Pictorial meadows The independence of GE1 was reflected in the independence of the organisation with its range and scale.

Findings GE1

1. Site specificity
2. Somebody prepared to take risks. A champion.
3. Las need to be persuaded as they cautious about taking risks. They do not like to be left with “egg on their faces”. They need to be persuaded with images.
4. Most park employees do not have time to initiate projects in relation to NP
5. The cost of NP may be a problem.
6. Meadow matting now available which will help overcome many of the technical barriers to perennial NP.
7. In terms of capital investment meadows should be a prime cost.
8. NP should be within a discipline of its own : Dynamic plant management

6.4. Analysis/discussion

As we have seen over the last chapter, individuals were encouraged to speak about their work, about planting and about the management of parks in general. Over the course of the interviews individuals alluded to various barriers to naturalistic planting and themes emerged that appeared to influence the planting culture within local authorities. Space, money, soil type, weed competition, amongst others were alluded to. These themes can be loosely grouped into

1. Knowledge; (including technical) and, experience.
2. Environment
3. Finance/Bureaucracy
4. Culture.

6.4.1 Theme 1. Knowledge, Skills and experience

Many local authority interviewees had a small amount of experience of naturalistic planting and, in the main, this was annual meadow planting. Many reported how nice it had looked and how strong and positive public reaction had been.

The experts in the specialist organisations were more interested in the challenges of creating long term perennial naturalistic planting and did not dwell on annual planting. In terms of the goal theory discussed in chapter two, the specialist organisations had clear goals about what they were trying to achieve and their work was a process of continual knowledge gathering in the pursuit of this goal. Most local authority interviewees had a negligible amount of knowledge or experience of perennial meadows, with the experts, understandably, having considerably more.

6.4.1.i. Technical knowledge.

The sub theme of technical knowledge can be broken into two further sub themes. The first is general technical knowledge and the second is mechanical technical knowledge

6.4.1.i.(a) general technical knowledge.

On the technical side, on one hand, the specialist organisations had plenty of knowledge about naturalistic perennial planting; from the procurement of "meadow matting" to the very involved "soil inversion"; both tried and tested techniques that are reported to be very effective.

The interviewees in local authorities, including Telford and Wrekin (that had the drive, resources and vision), had very little knowledge of the technicalities of establishing perennial meadows (although TW1 was very conversant in techniques for establishing annual planting) TW1 suggested that British native perennials are not easy to establish as a group; for unidentifiable environmental reasons a small percentage will establish and flower but many will not. As Hitchmough (2004) says, naturalistic herbaceous vegetation varies in cost and infallibility within communities: some are very reliable and inexpensive to establish, others are more uncertain and difficult to establish. TW1 was using an "off the peg 32 species mix" but said himself that too much moisture was the problem as was competition from grasses. The knowledge base about this particular area was neither wide nor accessible at the time of interviewing, although organisations such as Green Estate were making inroads into addressing this gap. The use of "meadow matting" may address this problem of poor establishment of native perennials.

Most of the employees (bar one, perhaps) had good horticultural knowledge and experience, much which could, in theory, be diverted to a more naturalistic approach. This disputes the idea that there are not enough skills in local authorities to undertake innovations in vegetation management as was suggested in the 2000s by CABE reports and others. In Bristol, for example, BR1 was an experienced horticulturist and he mentioned "preparing a traditional seed bed" ie he had an understanding of sowing seeds and establishment of lawns; he also had an understanding of ecology (although he may have been loath to call it that); flowering and seed dispersal - likening his mower to grazing and rejecting the dogma of conservationists with their fixation on letting everything flower and go to seed. Indeed Gilbert (1991) attested to this saying that pockets of diversity could be found on steep banks that may be mown on a less regular basis than standard amenity turf. BR1 was the only one of the interviewees who presented a plausible explanation as to why the meadow at Brandon Hill park had not established very successfully (he suggested that the site had not been sprayed properly, effectively coupled with contaminated compost).

In the City of London the employees, despite being comfortably and long term employed, and apparently competent in looking after their park (although this competence was self reported by CC1), showed little evidence of any knowledge of the technicalities of sowing perennial (or annual for that matter) meadows from seed. The reason the meadow at the city of London that had been sown as part of this project had failed was probably due to a dry Spring and predation by pigeons, as well as the soil being unusually dry. These commonplace barriers to growth (Hitchmough and Dunnett 2004) seemed to evade the interviewees when discussing the failure of the meadow. They preferred to put it down to the ground being *too dry due to too much drainage having been put in* ie blaming themselves and their own lack of responsiveness, such as watering in a dry spring, for the failure of the meadow. This idea that they were to blame because of their own previous interventions resonates with what GE1 of Green estates said about an older generation of horticulturists who had actually been trained within a highly mechanised, interventionist framework of *1960s* horticulture, and were unable to respond to things on the ground, blaming their own previous interventions for failure rather than simply the weather or birds eating the seed. Responding to

environmental barriers, for the record, is a key requirement to success with this seed sown planting.

As far as the Sheffield team was concerned, despite being proud of the range of horticultural skills and plant knowledge of their team of gardeners as a whole, they did blame the (wet) weather for the underwhelming (in terms of diversity and colour) meadow in Meersbrook park when in fact it was most likely due to mismanagement of the meadow. As was mentioned in the literature review cutting meadow planting down in the first year and after increases the chances of establishment of the plants (Hitchmough 2004). It should also be given its annual cut down after flowering, not before as happened in Meersbrook park in 2010. Prior to the surveys CC1 mentioned that the meadow in Queens park had failed because of poor site preparation and that things should be done properly the first time round. The relative newness of the discipline of NP establishment became apparent here, learnt experience may well ensure the success of new plantings.

6.4.1.i.(b) Technical knowledge : Machinery and mowing.

Machinery was a recurring theme in the interviews. In her interview GE1 (Green Estates) described a generation *of machine trained*, male horticulturists who occupied the management of parks in the UK. This supported findings by CABE (2004) that suggested that greenspace personnel was 90% male, white and aging. She suggested that these machines were horticulture's tool for taming and controlling nature rather than responding to and nurturing the dynamics of nature. GE1 suggested that depending on machines somehow stymied the necessary development of a relationship with nature that is necessary in the encouragement of naturalistic planting. This takes us to the subject of mowing. Mowing was mentioned by all of the interviewees (with the exception, possibly, of LL1 at landlife). It was not questioned and its existence, seemingly, as unassailable as the weather. Whether talking about the problems of financially stretched contractors running mowers at the end of their lives (TW1, Telford and Wrekin), phenomena such as "mower creep", the mower being the grazer, state of the art "batwing" mowers (CC1 city of London) there is no doubt that mowing dominates landscape maintenance in parks, both to the benefit and possible detriment of nature. These machines have kept vast expanses of grass clipped for the best part of a century and the evolution of a battery of different types of mower has been dependent on there being grass to mow. There has been a co evolution between

mown grass and mowers in the UKs damp and propitious climate which will be discussed in the next section. When GE1 talks about a generation of male management who trained in a context of mechanisation she is probably referring to mowers, chainsaws, hedge clippers (strimmers and leaf blowers came later). The interplay of machine, man and landscape is a culture in itself and this surfaced in the interviews.

Whether mowing is a barrier to NP in local authorities is one of the questions asked by the study which brings us to the discussion in the literature review, particularly in relation to the work of Oliver Gilbert who said that occasionally mown banks can exhibit pockets of species diversity superior to unmown areas, as was discussed earlier in the case of Bristol. Once the mowing had stopped the flowering thyme fell prey to competition from competitive grasses.

All of the organisations that were undertaking naturalistic planting at any kind of significant scale used machinery. As detailed at some length TW1s contractors in Telford used a variety of agricultural equipment to prepare soil and flail annually (obviously removing nutrient from the soil regularly will give potentially invasive weeds less to exploit). Landlife international had experimented very successfully with soil inversion, whereby the subsoil is brought to the surface and topsoil and associated weed seed content buried a metre deep. This required specialist and expensive equipment (Danish). TW1, at Telford council, also spoke of the importance of a long term maintenance contract specifically as it allowed the contractor to invest in machinery. Landlife reported most success with perennial meadows on sites from which soil had been "stripped" which requires the use of machinery. Green estates had developed a specific type of seed sowing machine that could broadcast (sow) different weights of seeds on a large scale. One of the casualties of the culture of short term profit driven contracts was that investment in machinery was not made a priority, thus old machines that do traditional practices are run to the end of their lives. Thus mechanisation is not necessarily by definition a threat to naturalistic planting as was suggested by GE1, its just that the machines can be used to encourage diversity rather than suppress it.. It is the landscape culture that has grown up around machines that may be worth challenging.

6.4.1.ii Knowledge. Experience.

Not only did TW1 at Telford city council have a good mechanical knowledge He had also acquired a lot of experience about timescales over the fifteen years he had been experimenting in this area. Again, a lack of history and acquired knowledge base may well present a barrier to NP. There was a short, non-negotiable window in the year when TW1's team worked flat out to get seeds onto the ground. This ensured successful, colourful annual meadow type planting on a very large scale. As Hitchmough (2004) suggested the windows for sowing certain mixes of naturalistic herbaceous vegetation are more flexible. The absence of this knowledge base in Telford my have constituted a barrier to NP. Despite his much celebrated success with annual meadows on a large scale TW1 he was still in the phase of gathering knowledge by trial and error about perennials.

GE1 at Green Estates in Sheffield reported that great leaps had been made the knowledge base in naturalistic planting. When interviewed five years earlier GE2, contract manager, had said that sowing annual planting was what Green estates spent a lot of time doing, and that at the time he was investigating the possibility of using single species such as red flax to create an instant, albeit ephemeral, block of affordable colour. Five years later GE1, director of Green estates reported that there had been such a lot of knowledge gained in the last five years about perennial planting that they were no longer promoting annual planting at all and that GE2 spent most of his time establishing and maintaining perennial planting. She presented this as being a *volte face*. The reason for this was that the knowledge base had grown so considerably; master sheets on the characteristics and behaviour, as well as the functional interactions of different species had been gathered. Establishing attractive areas of naturalistic perennial planting had become much more successful, maintenance was becoming more refined. Green Estate, which was not a local authority but a social enterprise dedicated to NP, had been able to change its approach completely. In conjunction with this expanded knowledge base there was an expanded product base in the name of meadow matting. Pre-grown blocks of perennial planting are (2015) now available to purchase by the square metre in the same way as turf. This simply needs to be positioned and watered in the same way as turf (or bedding plants) and is much more resistant to competition from weeds than areas of sown planting. This may, in the future, make it easier for LAS to establish NP.

6.4.1.iii.Lack of knowledge and skill was mentioned as being a barrier with many interviewees saying that contractors regularly mowed over areas they were not meant to mow and areas of meadow became subject to "mower creep" whereby the original shape of the meadow became gradually eroded by inattentive mowing. One of the reasons presented for this was that people working in parks either spent most of their time doing very low skilled work such as litter picking or cleaning toilets or very repetitive mowing which meant they were, as was mentioned earlier, unable to respond to what was going on on the ground. This may be due to prescriptive contracts, as was suggested by BR2. A number of interviewees said that contractors needed very clear instructions about what to mow and when and these instructions needed to be reiterated. TW1 said that he had had to "get quite stroppy" with contractors in this regard which again, illustrates how committed he was to his goal.

6.4.1.iv.Training, or lack thereof was not mentioned as being a major barrier to naturalistic planting per se but was a theme that surfaced in various contexts during the interviews with the local authorities. It became apparent that vocational training by way of apprenticeships had been one of the casualties of the waves of privatisation that had afflicted the parks in the 1980 and at the time of interviewing (more than 20 years later) many local authorities were in the process of rehabilitating training structures for their employees. Most of the employees were not clear about the actual nature of the training and indeed, although seen as being an important part of the long term employment most of the interviewees were very vague as to its actual content. In the City of London CC2 mentioned that he was responsible for training. The city of London had training structures in place, as well as ecologists and conservationists permanently present within the management structure of Queens Park. However NP in general and the in house expertise of the ecologists and conservationists was not mentioned as playing any role in this training. Thus it may not be a lack of training per se that is a barrier to NP, but the content and direction of that training may need to be tailored to desired outcomes. A number of the interviewees suggested that NP required a different approach from their own, although they did not

qualify the nature of this difference. indeed GE1 mentioned that it should be a discipline in its own right, a discipline she called dynamic plant management.

6.4.2. Environment.

As far as the theme of environment was concerned this was divided into the physical and cultural environment.

6.4.2.i The cultural environment. "Suitability"

How naturalistic planting fits into the physical and cultural environment was a theme that recurred in interviews. There was a repeated idea that it was suitable for certain places and not others. . Suitability, for the record, meant acceptable to the general public who were referred to variously and vaguely as "people", "Mrs Miggins" and occasionally "Residents". These groups came across, in the interviews as mostly resistant to change. It should not, for example, be planted at entrances to parks in cities. It was accepted that when entering a park people like, subconsciously, to be received by order and formality. In fact a kind hierarchy of environmental experiences is what park users have come to expect in city parks, beginning with structure and order and receding into trees, woodland and naturalism. This idea was expressed indirectly in many of the interviews. In Sheffield, for example, although unsuitable for entrances to parks it was suitable for woodland edges and the perimeters of parks. BR1 of Bristol was categorical that meadow planting was for the countryside and formal planting was better in the city. BR1 also reiterated an idea from the Ozguner and Kendle (2007) survey of attitudes of landscape professionals, that colour in cities in a necessary antidote to the greyness. Some employees in the parks at Bristol said there were some parks that had a more informal "style" in which meadow planting would be suitable but formal Victorian parks were not suitable places for naturalistic planting. Even one of the Green Estate employees suggested that it was not suitable for formal parks. The City of London interviewees alluded to the polyvalent environment of the inner city parks; there is an immense pressure to provide for a wide variety of user groups, from pitch and putt to even a mini zoo (??), and naturalistic planting was something that could not necessarily be accommodated. This may be due to physical reasons : golf balls get lost in the long grass. In contrast where meadows *were* suitable for, were "problem areas",

inaccessible places, verges, roundabouts (as in Telford New town), demolition sites. Almost all of the interviewees in local authorities expressed this idea in some way.. It is worth exploring these ideas about "suitability" in the context of The Burgess, Harrisson and Limb studies. These studies showed that people like a variety of experiences in their local park, one of the main ones being to sit peacefully, contemplate nature, either alone or with friends. Giving children the opportunity to explore wildlife, and provoking memories of wildlife in childhood were all mentioned as key requirements in any park. None of these reasons was mentioned explicitly by the interviewee

This idea about suitability was not borne out by the quantitative survey. Respondents thought that the planting they were standing in front of was suitable for the park they were in, as was shown in Chapter 5.7.4.1. with very similar results for both parks. The parks were quite different in character, and the location of the planting was also very different. One of the areas of naturalistic planting had actually been sown into the formal structure of a bowling green, and preference was very high. One of the areas was grassy and arguably more "natural"; preference was not higher. Had the planting been more similar these findings may have more validity, but *a priori,* they refute the qualitative findings.

6.4.2.ii. The physical environment: Grass.

As far as the physical environment was concerned GE1 at Green estates had (as we have seen before) mentioned that "England likes grass and grass likes England". She did not use any grass in any of the seed mixes. Grass could be argued to be one of the biggest barriers to naturalistic planting. As was considered in chapter 2 Britain's damp and windy temperate climate and nitrogen rich soils favours the dispersal and self seeding, and establishment of many species of grass and indeed mown grass is one of the most effective tools in the parks departments portfolio. Indeed the mower could be seen to be a symbol of the generation of machine trained parks managers; the mechanisation of horticulture allowed mown grass to take hold of the landscape culture affordably and on a massive scale. It also now suppresses grass which in some way has become a victim of its own success. Not only has grass had a huge physical influence on the built landscape of Britain the cultural influence is not to be underestimated. The unassailable presence of the mower was evident in all or the interviews. It was mentioned alongside litter picking an essential task before

which no other task could be considered. Mowing is also quantifiable, easy to specify in a contract and may quite literally be "the path of least resistance" (Fairbrother). GE3 said that, in general, Local authorities will cut the grass 9 times per year. A "good" Local authority will cut grass 14 times per year. He also stated that LAs are accountancy driven; quantifiable tasks are easy to account for. The edges of NP, to help acceptance, need to be cut even more than this the quantifiable nature of mowing is a barrier to NP or not is worth considering; "mower creep" is a barrier, but, as was explored earlier in this chapter mowing is a necessary tool to promote NP: cutting and removal of the arisings at certain times in the year, and mowing regularly around the edges.

Culturally, however, "Gang mowing" is seen as fundamental to parks management as cleansing. Indeed in some LAs turf management is managed by cleansing. Notions of tidiness and neatness are embedded in the culture of mown grass, and litter picking and mowing were often mentioned in the same sentence by interviewees. Fairbrother (1970) suggested that mowing was a way of tightly controlling nature, and indiscriminately supressing ecological processes. SH3 mentioned how our relationship with grass has changed. "keep off the grass" signs are no longer commonplace but reflect a deeply embedded connotation with tidiness. This was explored in Chapter 2 with Fairbrothers "fitted carpet complex", and Robinsons tirade against "shaven" lawns. It is in this cultural context that efforts are being made to establish the relatively complex ecosystems that constitute naturalistic planting. For many stretched local authorities these two landscape prescriptions at polar ends of the ideological scale are too difficult to assimilate. Especially as they believe are catering for different types of park user, as GE3 said there are people who like tidiness, and people who do not. This was partially borne out by the first part of this study, although this difference in attitude to tidiness was suggested to do with age, where other theories about experience come to the fore. However the interviews were peppered with the idea of different "approaches". The quantitative study suggested there might be fundamental differences between genders for example. For the greenspace managers catering to the differing needs of the users goals around different approaches may be in direct conflict with each other. As Wright (2001) said, conflicting goals can be very demotivating. This may well be a barrier to innovation in vegetation management

6.4.2.iii The physical environment : Space

Another sub theme in relationship to the environment was space. There is no doubt that having space is a prerequisite to the long term establishment of perennial planting and if there is not enough it is a demotivating factor in the establishment of naturalistic planting. Pressure on greenspace in cities is high, and many different interests need to be met . For example TW1 in Telford had huge amounts of open spaces in the form of verges and roundabouts due to Telford actually being a new town, for which his goal was finding a solution in terms of planting. Space also has implications for cost, as there was an economy of scale to all of his landscape interventions. Likewise Landlife international and Green Estates who worked with estates and highways as well as parks were working on landscapes of a very large scale. Undertaking naturalistic planting on a large scale promotes the possibility of hiring in large pieces of machinery (such as the "soil inverter"); machinery that simply cannot be employed in small city parks. On this question of size one interviewee (CC2, at Queens park) mentioned that there is immense pressure on inner city parks, every square metre of land needs to have use and city dwellers have widely varying needs, from sports, to playgrounds, to rest. Queens Park is a relatively small park of just 30 acres. SH1 mentioned that NP had been successful in Concord Park in Sheffield, however this is a park of 65 acres. Indeed, Meersbrook park itself is 42 acres in size. There may be a critical size of park in inner cities in which NP cannot present an alternative to mown grass.

6.4.3 . Finance.

6.4.3.i. The economic intrastructure of local authorities, CCT etc.

Money, inevitably, threaded its way through all of the interviews in relation to parks.

The influence of money, in the broadest sense and its effect on parks was most evident in the Bristol interviews. The Bristol employees were keenly aware of money and were feeling the effects of its scarcity daily. They had all felt and were continuing to feel the effects of cuts and, in the words of two of the three Bristol employees, the relentless drive for ever cheaper contracts. The process of changing local government finance that had started in the 1990s with compulsory competitive tendering (CCT), later to be replaced by "Best Value" had meant that Bristol parks had been looked after by minimal length contracts and the main contractors had changed at least 3 times in fifteen years. Also the city of Bristol had chosen to award contracts for different parts of the city to different contractors both internal (by internal we mean Bristol contract services or BCS, Bristol city council's direct Labour Organisation; DLO) and external with the idea that they could compare the two for performance and value for money. This was made more complicated by the fact that the DLO was about to be brought back "in house". At the time of interviewing Bristol interviewees came across as unmotivated and lacking in goals, with two of them; BR3, let down by their authority that seemed to ONLY care about figures. The implications of this for motivation were discussed in the results for BR3. The consideration by the Yates and Ruff report that CCT might adversely affect performance because of the break between managers and parks maintenance teams was partially supported by the qualitative findings. BR2 suggested that this might be the case, saying that he "shied away" from asking contractors to do new things but BR3 was still in an unofficial relationship with the client in a monitoring capacity, so the relationship was not completely broken. This dynamic drive for cost saving, as well as regular restructuring of management structures. did not foster an environment conducive to innovative landscape management techniques; there was no possibility for nature to be a priority at the level of management. Priority was convincing residents of Bristol that their taxes were being spent on public services (clipping

the grass is a very visible way of achieving this). Getting the grass cut at all appeared, at the time of interviewing, to be an achievement in itself with mowers being run to the end of their lives and staff and training being endlessly reduced and restructured.

Compulsory competitive tendering, despite happening almost two decades earlier, was also mentioned by CC2 at the **City of London Corporation**, who lamented that when he had worked for Camden council it had brought his training to an abrupt end. It was clearly a trauma not easily forgotten (had been 12 years previously that he had worked for that authority. The city of London employees did not, unsurprisingly, mention cuts very much (as they were still clearly very well resourced with 12 full time all year members of staff employed permanently Queens park, a 30 acre park). In the case of the city of London green spaces were run as a charitable organisations so had not been required to directly surrender to the rigours of CCT or Best value. Although having plenty of financial resources clearly was benefitting Hampstead heath with its complicated, ecologically focussed mowing regimes, it was not clear whether being well funded benefitted species diversity in Queens park (a 30 acre park with 12 members of full time staff). As was mentioned earlier in this chapter, money was being spent in Queens park on upholding traditional "pleasure garden" activities such as Pitch and putt, and a mini zoo and in planting, money was being invested on flower beds full of exotic monoplanting (namely bedding schemes, an azalea bed and rose bed) **Sheffield** employees did *not* mention CCT or Best Value. Sheffield, it transpired, had opted, as had been a choice at the time, to use the DLO (direct labour organisation) framework in order that Sheffield could keep the relationship of management and greenspace employees intact. At the time of interviewing this DLO was being brought back "in house". Employees, despite being subject to cuts and the ever present pressure of changing infrastructure characteristic of local authorities were buoyant, loyal and upbeat. They mentioned money as being available, albeit scarcer than in the past, it was just a question of working out how to get it. SH2 was very good at getting it. There was the impression that one had to fight for funds and use teamwork, determination and organisation to get things done. Money was presented as a resource to be fought for and managed judiciously, rather than an ever decreasing life source. When it was procured in

Sheffield however, it was being spent on the reincarnation of traditional herbaceous borders and “bringing back the old gardening”.

The Yates and Ruff (1991)report had also suggested that compulsory competitive tendering, in the best case scenario, may be favourable to naturalistic planting. This would be due to the flexibility it allowed to design contracts that specifically favoured wildlife. The interview from Telford and Wrekin would support this idea.

At **Telford and Wrekin** TW1 actually thought CCT had been quite favourable to his department and therefore to his endeavours to establish naturalistic planting. He saw that the advantages of CCT were severalfold. The first was that certain services could be subcontracted on a job by job basis, allowing him to hire specialised agricultural machinery (operated by his friends) such as power harrowers to cultivate the ground on a large scale, and flail mowers to cut the long vegetation. It also allowed him to put very long contracts out to tender, 18 years was the length he mentioned. Contracts of this length allowed the contractor to invest in adequate machinery and training. It the time of interviewing the DLO that had been looking after the open spaces was in the process of being “tupeed over” to the Spanish owned contractor (FOCSA) who had been awarded this long contract. TUPE refers to the transfer of undertakings and protection of employment in contract management.

It is worth noting here that TW1 was not part of a parks department but part of the “Environment regeneration portfolio” and he was responsible for landscapes around Telford new town which were on a very large scale (the equivalent of 80 football pitches). He would have had a large budget at his disposal and actually said that it was great for open spaces to be lumped in with cleansing as cleansing has proportionally so much larger budgets, (as well as a mobility infrastructure that can be harnessed to look after other aspects of landscape).

So despite happening a long time previously the fragmentation of public services in the 1990s was still part of the daily consciousness of the parks employees. Each of the different local authorities that formed part of the study had adapted very differently to central governments demands for structural change, this became apparent through talking to the interviewees whose experiences had been positive, negative and indifferent

6.4.3.ii Actual cost comparisons of different types of planting.

Inevitably the unit cost of naturalistic planting in relation to other types of planting was a theme that was explored in the interviews. In the context of the cuts to parks departments outlined in chapter two no exploration of barriers to naturalistic planting can exclude cost. In theory sowing in situ is cheaper than buying plants in with the energy, transport and resources required to establish instant bedding but interviewees did not necessarily all agree.

BR1, at Bristol, suggested that cost was not a barrier to any type of planting; for which the case could be argued for any; that annual bedding is not necessarily more expensive than any other type of planting; He based this theory, however, on the herbaceous plants versus annual bedding argument saying that they probably came out the costing the same what with the hidden maintenance costs of herbaceous planting. He also said that you got more value for money from bedding plants in terms of colour (ie density per unit square). He did not compare the cost of an annual meadow sown from seed to the same square metrage of bedding but he did say that one was not comparing like for like. His argument was that density of colour was the commodity being paid for, the worth of which has been explored in the quantitative results. He also said that planting bedding requires no skill so cost savings could be made (in theory) as skill itself is a valuable commodity.

This theory was borne out by the other interviewees; **TW1 at Telford and Wrekin** council also said that sowing annuals cost £1.00 per square metre including site preparation and seed while looking after shrub beds cost £1.20 per sq. metre so by sowing annuals he was actually making savings. It is worth noting that TW1 had been looking after and regularly spraying shub beds on huge scale (with associated machinery and herbicides). TW1 was also very committed to naturalistic planting and it was very much in his favour to present costs in its favour.

City of London employees did not ostensibly concern themselves with unit costs. They seemed to present themselves as driven more by philanthropy, or public service at the very least, than accountancy. They were offering their parks at no direct cost to the taxpayer and came across (intentionally) as being able to afford

to commit to any type of planting. They chose to prioritise history and tradition over nature and cost was not their main concern.

The **expert organisations** had some quite clear ideas about money and costs in relation to naturalistic planting. GE1 of Green Estate was categorical that one of the main barriers for local authorities in establishing perennial naturalistic planting now is cost. She said that her organisation charges £3.00 per square metre for annual planting and £15 per square metre for perennial planting (in the form of meadow matting) (this was in 2015) This (elevated) cost includes procuring, transporting, installing and maintaining to establishment, meadow matting, as well as site preparation. It would be interesting to compare this cost with that of turfing which may well be similar. As she said herself, using meadow matting, was more likely to ensure the success of NP in terms of prevention of competition from seeds. Green estate, it is worth noting here, receives no funding and all its income is self generated, much of it from landscape services. Unit costs presented by Green estate will reflect a market rate.

LL1 of Landlife International differed in his opinion saying that the premise of much of Landlife's work was that naturalistic planting was actually very affordableThus LL1 said that Landscape delivery could be delivered for "hundreds of pounds rather than thousands of pounds". Seeds are used rather than containerised plants and turf. Landlife had been founded in an era where there was no money at all for the parks in Liverpool (as he said Liverpool had gone bankrupt) used collected seeds and sold the topsoil it had stripped so it was very focussed on undertaking NP as cheaply as possible. This was its goal. At the time of interviewing Land life had recently benefitted from huge public subsidy in the name of heritage lottery money so had an entirely different funding context to Green Estate in Sheffield. Landlife differed from Green Estate. It is a wildflower conservation charity, rather than a social enterprise. Its cost estimations will not reflect "market" rates.
In summary no conclusive evidence was gathered as to whether cost is a barrier to NP.

These differing costs reported by the independent organisation highlight the challenge faced by Local authorities and their stakeholder deciding to undergo perennial NP. They would have to weigh up the costs of establishing perennial NP themselves with all the associated barriers and management requirements, against the cost of having NP installed by a third party such as green Estate which would require a higher capital outlay but more of a guarantee of success.

6.4.4. Cultural themes.

There were several cultural themes that surfaced in the interview. Messiness, aesthetics, and the conservation culture. These will be explored one by one.

6.4.4.i Messiness.

The idea that that park users and taxpayers might be resistant to naturalistic planting was a thread that ran through many of the interviews. It seemed to be generally accepted that people do not like neglect and the edges of this type of planting need to be neatly mown. This idea was only partially supported by the quantitative findings with slightly higher Likert responses for the London Park in relation to the statement about neatness.

In Sheffield the interviewees suggested there was the idea that meadow planting might be messy, attract antisocial behaviour and would be hard to collect litter from; there were undesirable maintenance implications associated with NP. There was also the real feeling that when grass is left unmown, or wildflowers encouraged, people misunderstand, and think that the council is not doing its job taking care of the landscape.

Most of the interviewees at the local authorities, however cynical, did see themselves as public servants and wanted to be seen to be doing their job. Upholding traditional ways of maintaining the landscape was the way to do this; they were fearful of any notion of neglect that they equated with failure. This idea about litter being a barrier implies that for local authorities, cleanliness is more important than wildlife; This may be related to the organisational culture of LAs for whom cleanliness is a significant part of their statutory remit. A good proportion of council tax payers money will be spent in that regard.

6.4.4.ii Aesthetics.

The general feeling was that colour was a good thing. Park users, in the view of most of the interviewees, like to see colour and variety. BR1, the oldest of the interviewees, suggested that Mrs Miggins only wants to see colour, the more the better. The views of BR1 supported the suggestion in chapter two that there is a proportion of greenspace public sector employees who believe that colour is suitable for cities. (Ozguner, Kendle et al. 2007) As has been explored in the quantitative chapter while colour is important, there is not a linear relationship between colour and preference; it is not a case of the more the better. BR1 was a

highly experienced and seemingly competent horticulturist and, as a professional, said that no one plant should be valued more than the other. This neutrality may well also a barrier to NP. It is not preferred and therefore not prioritised by the majority of greenspace personnel. It was suggested by the study of landscape professionals, by Ozguner and Kendle (2007), that while they spend much of their time actually doing formal planting, this is not necessarily out of personal choice; they are mostly trying to meet the demands of park users who, in their eyes, want formal planting. TW1 at Telford and Wrekin was the interviewee most interested in the aesthetics of naturalistic planting but he did not speak so much about what the tax payer liked but what were his own preferences in terms of colour. He suggested that he had had indiscriminately positive feedback to most of his naturalistic planting projects. All of the interviewees from the local authorities referred to any previous experience of meadows in a positive way They had all received positive feedback to any areas of annual planting that had been established and all agreed that it could look very pretty. None of the interviewees argued in favour of the actual look or other types of ornamental planting; just whether it was popular with park users. From a theoretical point of view the interviewees were less focussed on the aesthetics than the landscape transactions and expectations of park users. They did, however, frequently mention that NP looked unkempt, and that it made park users think that their greenspace was not being “properly” looked after. This was not borne out by much of the evidence in the quantitative survey apart from in the comments; one respondent in Sheffield said that some of the patches “looked like the mower forgot a bit”, one respondent said it looked a bit untidy. These comments were in the context of a very grassy plot.SH1 was the only interview to allude to landscape aesthetics in the scenic sense (saying that people like “mature” landscapes; trees in grass).

.

6.4.4.iii Conservation and Ecology and Ranger services

The presence of Conservation, Rangers and Ecology were felt throughout all the interviews. This was considered in the literature review; it was thought that an uneasy relationship between horticulture and conservation may present a barrier to more wildlife centred forms of vegetation management. The relationship between the horticulturists and these bodies ranged from good, to uneasy to hostile. There was uncertainty as to how to work successfully and creatively with these elements within the local authorities. Evidence that the priorities of the wildlife trusts, rangers and other conservation factions might present "conflict" in terms of goals is suggested by the findings in the qualitative study.

First for the good relationships, good relationships were concerned. CC1 at the city of London superintendent of Hampstead heath worked so closely with ecologists that he actually allowed them to inform his schedule of works. They were directly employed by the parks and open spaces department. He spoke highly of the ecologists and said that it was very important to listen to them. This may be due to the nature of the greenspace portfolio of the city of London; of the 4200 hectares of greenspace managed by the city of London, only 100 are formal city parks. 30 of these comprise Queens Park.) The rest is heathland, commons and habitats. In Queens park the ecologists were (reportedly)the people who deposited logpiles around the park, and took school children on educational visits. Sheffield horticulturists mentioned rangers as being the people who had previously made meadows in parks. The breakdown in their relationship brought the of demise the popular annual meadow in concord park and the relationship between the factions was clearly still strained. SH2 of Sheffield also relegated "That kind of way of thinking" to Sheffield Wildlife trust.

In Bristol, as was mentioned earlier, BR1's feelings towards the conservation movement were hostile. He thought that the Avon Wild life Trust were bordering on corrupt and incompetent and he had no respect for what he deemed to be conservation rhetoric in relation to landscape management looking after plants. Both the findings for Sheffield and Bristol, who had wildlife trusts looking after some of their green spaces, supported the Burgess Harrisson and Limb studies that alluded to tensions between traditional horticulturists and wildlife trusts.

Horticulture was seen by some of the interviewees (especially the more experienced ones) as a discreet skill set. Calenders had been learnt and planting prescriptions memorised. There was the suggestion by GE2 that there were methodologies for landscape interventions that may have been incompatible with conservation methodologies and the responsiveness of ecology. There was also an underlying feeling of threat from ecologists, rangers and conservationists. These disciplines threaten horticulture in its classic mould as they offer alternative methods of land management. This may be why the City of London, despite having resources, skills and commitment to wildlife, appears to compartmentalise the different approaches. Using Ecologists and conservationists in some of its greenspaces, and horticulturists in other. Local authorities are structured with compartments of expertise (and training infrastructures therein) and are also places where the past (traditional horticulture and the present ecology collide). This idea was implicit in the interviews and could be explored further.

GE1 at Green Estates refuted the term ecology, horticulture or conservation in relation to her work finding none of these disciplines could satisfactorily describe the work of Green Esates. She called their approach *Dynamic Landscape management.* In terms of barriers to NP for local authorities, it may be the case that the history of the culture of these disciplines, all once resourced in local authorities and, in the current economic climate, competing for the few resources available (Rotheram)does not make a climate conducive to the encouragement of nature

6.5 A discussion of the organisations. The ethno-organisational perspective.

In this qualitative study employees of local authorities, all involved in Green space management and maintenance were interviewed. They were interviewed at their place of work about naturalistic planting and it would probably be worth taking a look at these institutions themselves; decisions are not made in a vacuum. What were these organisations actually like, as a context in which to enact innovations in vegetation. We have seen in chapter 6 and will explore a little later that none of the individuals conformed to a mould. They had different levels of training and

worked within organisations that all had their own institutional cultures. This informed their experience and shaped their attitudes.

6.5.1. Bristol city council

Let us take Bristol for example. As far as context is concerned employees **in Bristol** had witnessed first hand what David Lambert called the "race to the bottom" in his impassioned hand wringing speech about the aftermath of CCT being introduced in the 1988 (whereby the cost of the contract became more important than the quality of the service provision)(Lambert 2015).. One can only imagine the culture of ideological and structural confusion that must have trickled down to the employees of the parks service, embodied, at the time of interviewing by cynicism on the part of BR1, anger, on the part of BR3 the keeper, and lassitude on the part of DM. There was a strong sense of loss of control in the Bristol interviews, a "them and us" mentality. Decisions were made and remade about organisation structure that, over time, may have eroded individuals sense of agency over their working day.

In terms of goals the context in which the Bristol employees were working was not conducive to the creation of goals. Wright (2001) provided evidence that procedural constraints can affect employees' perceptions of potential goal attainment. By the same token, managers who believed that organisations were controllable displayed a stronger sense of self-efficacy and set even more challenging goals when difficult organizational standards eluded them. This may have been the case for TW1 in Telford.

As far as our own meadow in Brandon Hill park was concerned it may not have been sprayed thoroughly enough, and not enough compost was spread over it (this also may have been contaminated). BR1 (Kew dip. Hort.), district coordinator, was the main contact in Bristol. In theory for him, a qualified and experienced horticulturist, this site preparation should have been straightforward yet for whatever reason it failed.

It seems quite likely that it would have been difficult for him to actually get the job of site preparation done to the standard necessary.

6.5.2. City of London

The work context at the City of London, however, was quite different. There was an absence of anger or cynicism, nor were they in any way negative about their day to day working life. Their day to day was characterised by teamwork, solidarity and security. They were friendly and willing to be interviewed, often drawing attention to the strengths of other (named) individuals in their team. They were very protective of the many unusual features that their small park offered the park user such as zoos and pitch and putt. In fact this level of provision came across as almost anachronistic with twelve members of staff employed full time to look after, amongst other things, these pleasure garden type features. As they said they all had "keeper status", each with a different specialism (none of these specialisms had anything to do with wildlife though). Recent planting had been an azalea bed. A quite Victorian choice that reflects a very traditional planting culture. The idea to plant an azalea bed had been an intra-institutional decision, ie it had been done in another of the City of London's parks (in a group of 3). The knowledge repository in Queens park came across as a little bit inbred. The reason for this may have been that the City of London has not been subjected to the changes in the 1970s as other local authorities, coupled with good financial and staffing resources; it had become an island of limited knowledge with not a lot of outside knowledge coming in…although the employees of the City of London would (understandably) be the last to acknowledge this.
CC1 superintendent expounded that the opposite was true. That the management of naturalistic planting on Hampstead Heath was trailblazing and exemplary; this took the form of plentiful and various mowers employed to a complex and considered timetable.

An explanation for the lack of interest in NP for Queens park could be the culture of greenspace in the city of London. As CC1 said there were very large amounts of greenspace in the City of London, thousands of Hectares, being managed specifically with nature in mind. The three inner city parks being taken care of formed less than 0.25 % of the City's greenspace portfolio. For over 4000 acres wildlife and curating nature for park users was the overriding goal as CC1 said, they have over "200 operations they have to achieve simply to stand still" This idea of achievement, mentioned several times by CC1 is a clue to the goal culture of this authority. There were clear and unconflicting goals for the different

greenspaces, each had their own champions, which were being achieved. This was a close, comfortable and above all well organised culture, unrepresentative of much of the drowning, cash strapped service that characterises the national situation with parks today (HLF 2014).

This level of comfort, however, in Queens park was not conducive to the establishment of the meadow. Despite following the instructions for site preparation and taking time to water the planting after sowing the meadow that had been sown in Queens park failed, and failed in equal measuer to the Brandon Hill site.Why was this? Well one never knows for sure but in the case of Queens park possibly there had been too much intervention at the outset; and not enough responsiveness at establishment The soil was too well drained to the point of dessication and everything, even rank grass, refused to grow there.

6.5.3. Sheffield City council

The tone of the interviews with Sheffield city council was altogether different. While Bristol employees were broken spirited, the city of London employees comfortable and unquestioning, Sheffield employees came across as adaptable and accepting, as well as still focussed on making their parks look nice. Sheffield city council had adapted to CCT in the 1990s using the DLO structure (creating Direct Labour Organisations that mimicked private companies to whom they awarded the contracts for service provision). In other words, from what the interviewees said, Sheffield city council had always tried to keep some semblance of an in-house park culture. The relationship between managers and Green space workers had not been ruptured in the same way that the Bristol one had. The parks department had obviously come under a lot of pressure yet the interviewees were positive and committed. In Sheffield, as in Bristol, two of the interviewees were interviewed at the same time. (in Bristol it had been BR3, Keeper interviewed alongside BR2, community park manager) In Sheffield it was a superviser (GE2) interviewed alongside his boss SH2) There was a real difference in tone between these interviews. While in Bristol the interviewees came across as distant and estranged, in Sheffield there was a palpable camaraderie and respect between the interviewees. Despite there being many negative elements to their day jobs (much fire fighting, graffiti cleaning and syringe collection) the Sheffield interviewees spoke of their horticultural achievements with pride and

mutual respect. Sheffield city council came across as an institution in which the individuals working within it mattered, and this from the interviewees themselves. Despite there being very little money available for parks maintenance in Sheffield this was not the main focus of the interviewees' discourse. It also became clear that once a goal had been set, as it had by SH2 to reinstate the herbaceous border in Graves Park, many hurdles could be overcome to achieve it. This may have been because the procedural constraints were not as debilitating as in Bristol to achieving those goals. Wright (2001) would argue that this gave SH2 a greater level of self efficacy. It allowed him to champion his cause. Sheffield interviewees however, were probably the most cautious about the idea of naturalistic planting drawing attention to the litter implications, muddiness and inappropriateness for many parts of their open spaces revealing similar conservatism to the employees at the city of London. Here we are presented with a culture of high caution that may need a third party to help with this type of planting. In terms of our project the most successful perennial meadow that was sown was in Sheffield.

6.5.4 Telford and Wrekin Council

This conservatism and caution was absent in the interview with TW1 at Telford and Wrekin city council. Much of what he said goes against much of the rhetoric about green space management. Here the organisation is a New town , with vast amounts of space around it. When speaking about naturalistic planting the context, for TW1, was obviously very different. For a start TW1 was operating not out of a traditional parks department, but as part of the "business development remit" of environmental services. He had a problem to solve; vast tracts of amenity shrubs at the end of their lives to replace. Environmental services, it is worth pointing out, also encompasses cleansing and, as TW1 himself said, working alongside cleansing services gave him access to a considerable budget, logistical support and eyes on site. This idea runs counter to David Lamberts comment that being part of a cleansing team is inherently bad.

"Parks departments suffer the ignominy of being in a street scene or cleansing team" (Lambert 2015) TW1 was an individual with a lot of aspiration and was using his very broad job title to make real inroads into the establishment of naturalistic planting. Likewise with CCT.; TW1 said that CCT by definition did not mean poor quality service provision. In fact local authorities had the agency to design very long contacts that encouraged investment, the use of specialist

machinery for the task required could be sub contracted within the deregulated contractual context. TW1 was an individual with a real passion for naturalistic planting and this intrinsic drive had found a fertile breeding ground on the roundabouts of Telford new town.

6.6. The Interviewees and their motivations

It may seem obvious but decisions have to be made by people. Tasks have to be undertaken by people. Either azaleas are chosen or begonias. Somebody is placing that order. So how much is contingent on the individual and how much the organisation. Like everything in vegetation management, the answer lies in the interplay between the individual and his organisation. Let us take two individuals, TW1 in Telford and and BR1 in Bristol for example: Both individuals with a love of plants; Both senior and well educated; One with a diploma from the Royal Botanic Gardens, Kew; One with a Master of Horticulture from the Royal Horticultural society. I argued in Chapter 6 that they both had an intrinsic motivation ((Matheson 2012) to go to work. They both had a love of plants and strong drive to work with them plants and had horticultural competence. One of them, however, was cynical and disillusioned, mistrustful of the term naturalistic and even more mistrustful of ideas about ecology and evolution. For him conservation was just common sense. However his spirit had been broken by being, In his eyes, persistently undermined and restructured (so to speak…), half his Green spaces had been given to the Avon Wildlife trust (lazy and corrupt) and the other half divided up and given to an ever changing cast of primary carers. His intrinsic and vocational drive had eroded over years, he was a casualty in what David Lambert referred to as a "war between central and local government". And there was TW1.at Telford. His intrinsic love of plants, as well as a dedicated budget, had met fertile ground. There were big problems that needed solutions. His goal was to supply them. There was no doubt that Telford city council had space, and not just the physical space, but the cultural space, probably embodied here by a strategic development department for TW1 to develop his naturalistic planting.
This interplay between the individual and his organisation could also be clearly seen in the city of London. The interviewees were all, to a greater or lesser degree, team players (or in Matheson-speak), had solidaristic tendencies. These

were combined with instrumental motivations in the case of CC1, with vocational motivations in the case of CC2, and with thymotic, or status seeking motivations in the case of CC1. What was notably absent amongst these employees was that intrinsic orientation, the drive to the task for doing the tasks sake. There was also the lack of the organisational goal to change the approach to horticulture with nature in mind. The interplay of individual and institution can be clearly seen here. One doesn't want too many ideas in an organisation as established and apparently unassailable as the city of London.

Despite the very different institutional contexts in which all of the local authority interviewees were operating they all came across and thoughtful, conscientious and committed to public service provision. They were mostly male and over 40. As was identified in CABESs 2004 report, however their motivations and experience were as diverse as one could expect whatever their gender at least.

Chapter 7. Conclusion

Chapter 7

With the quantitative surveys undertaken, reported and analysed. Likewise the qualitative. This final chapter brings together the results and findings to explore all of the hypothetical barriers presented in chapter 2. They are presented one by one. The chapter will conclude with some reflection deemed relevant to the research question, a reflection on the limtations of the study and anchor the study into the present and future.

7.1.The hypotheses in the light of the findings

7.1.1. Technical barriers

Hypothesis 1. Having chosen a group of reliable species in meadow creation, and sown them in three sites at the right time of year, potential barriers to them establishing will be competition by weeds, lack of moisture, predation. Every attempt will be made to prevent this from happening. Hypothetically, these factors will not be a barrier but, given the scope of the research one might expect one or more of these potential limiting factors to affect an area of planting.(Gilbert 1991, Hitchmough and Dunnett 2004).

This study showed that there are, indeed, technical challenges to establishing NP in inner city parks. All of the meadows sown were subjected to one or more of the technical barriers suggested by Hitchmough, 2004 and Gilbert 1991. Hitchmough (2004) suggested that the least fallible naturalistic vegetation for a site of moderate productivity in Britain are those based around a mesotrophic native meadow. He suggested that while slug predation might compromise the number of forbs, typically sufficient numbers survive. This was not the case for the site in Queens park, neither was it the case for Brandon Hill park. Hitchmough (2004) said that one of the key disadvantages of sowing in situ was that successful establishment often requires good control of the germination environment. This

was not possible in Brandon Hill Park on the part of the researcher. In Queens Park there was not sufficient moisture in the soil for the sown seeds to establish. The Queens Park employees did water the meadows on request, but not until late May. the year that they were sown had an uncharacteristically dry April which may have compromised germination and establishment. There were also a large number of pigeons present at the sowing who may well have eaten all the grass seed. Pigeon predation was also the case in the Ruskin park site, which resulted in some of the plots being very gappy (particularly the plots with low number of native plants and high numbers of grasses). The Bristol site likely failed over time, time due to not being cut down to allow more light to the young perennials, and it is likely that the site was not sprayed properly. The Ruskin Park site succeeded quite well. This may have been because there was close monitoring at germination time on the part of the lead researcher, who watered it herself once a week for six weeks, with the help of the mobile maintenance team in Lambeth Parks.

Thus all of the barriers mentioned by Hitchmough (2004) and Gilbert (2001) proved themselves real, they could have all been overcome with the right response. Post predation they could have been oversown, and netted at a small cost. The site preparation, particularly in terms of spraying and could have been closely supervised as could the cutting regime. The Queens park site could (and should) have been watered during the germination window. All of these simple procedures are an essential part of the protocol of establishing NP. This study shows that one or more of these barriers is likely to affect any attempt to establish NP in inner city parks.

If protocols are followed and responsibility for the planting is undertaken it is perfectly possible to establish low maintenance, perennial, naturalistic planting as an alternative to mown grass. However Local authorities cannot be expected to do this without support they do not have the knowledge in the main and the pressures on their service are so great they will overlook basic tenets of management.

7.1.2 Familiarity.

Hypothesis 2. One could hypothesise that the more familiar park users are to naturalistic planting, the more they will prefer it.(Balling and Falk 1982, Keane 1990, Herzog 1995, Jorgensen 2004)

This idea of familiarity was explored in both the quantitative and qualitative part of the study. While there was no conclusive evidence to show that respondents who were familiar with NP preferred it to other types of vegetation. The survey of Ruskin park users showed that access to other types of open space would have an influence on whether respondents sought nature in their park experience. The experience of other types of more natural open space was also found to have an influence on respondents notions about "balance" in terms of their preferred plot. Both of these findings suggest that with experience of different types of open space, the expectations and aesthetic interactions with vegetation may change. Appreciation may become more nuanced and sensitivity to NP may become enhanced.

The results of the Meersbrook park survey suggest that the less familiar users are with NP, the greater their preference will be for colourful plots. There was tentative evidence that the more familiar users were the more complexity they would choose in their preference. This may be because bright colourful forbs, as Nassauer (1995) identified, are "vernacular cues to care". They help acceptance of NP by the less ecologically minded. Being familiar with the planting and being "ecologically minded" are likely to have a link, so these concepts have been loosely grouped together to mean familiarity.

This concept of familiarity was also mentioned in a roundabout way by some of the interviewees. The idea of expectation is, by definition, associated with familiarity The interviewees in local authorities variously talked about expectations of park users, and suitability of planting for certain types of parks. There were familiar landscape interventions particularly in formal parks that people that park users expected to see, amongst whose number naturalistic planting did not feature.

Many of the comments of the respondents in parks spoke of other places they had seen this type of planting, and that they were pleased it was happening in

their park. Some mentioned that information about the planting would be a good idea. Some of the interviewees attested to this.

7.1.3 The preference of the regular user

Hypothesis 3. *Park users have an intimate knowledge of their own park. Familiarity forms the bedrock of people's interaction with their local park. They welcome naturalistic planting and a good proportion of them prefer naturalistic planting in general to other types of planting in the park. Negative feedback is very infrequent.*

The study provided evidence that this is the case. The Respondents to the questionnaire survey were regular visitors, many were dog walkers. In the case of Meersbrook Park 38% of them came daily. More than half of all respondents came at least once per week. Respondents in both parks expressed overwhelming approval for naturalistic planting. In the case of Meersbrook Park, even in the face of what may have looked like a less than successful project in terms of visible species diversity, people were unanimously in favour of it. Negative feedback was infrequent. Constructive criticism was frequent. This may be an indicator of the strength of relationship people have with their local park.

7.1.4. Weeds

Hypothesis 4. *There are certain trigger weeds that will cause negative preference, namely docks, nettles and thistles. This is probably related to familiarity again and negative connotations in built up spaces.*

Evidence was found that, just as there are positive cues to care (Nassauer 1991), there is also the language of negative human intention which could be connoted with neglect. This can be expressed by weeds. This study showed that, indeed, nettles, docks and thistles (more the former two) are likely to influence preference even when growing in the middle of a green, grassy, species rich piece of planting. More study should be undertaken in this area, especially given the value of nettles in terms of wildlife value. It may be that awareness and education

in the value of some of the less desirable spontaneous species could go in some way to reverse the negative preference associated with these species. It is worth remembering at this point that weeds were one variable that contricuted to negative preference, but sparseness proved itself likely to be a much stronger one.

7.1.5.Age.

Hypothesis 4. Young people will express a higher preference for this type of planting.(Balling and Falk 1982, Lyons 1983).

Age was a factor that was explored in this study. Balling and Falk (1982) and Lyons (1983) found that young people expressed a preference for savannah type landscapes, trees in grass etc, and as people get older and they acquire more knowledge (Jorgensen 2004) their preference for landscape types changes. This study had some interesting findings about age, which do support these ideas. The first in relation to Ruskin Park.London. The younger respondents were much more likely to say an area of gappiness, “looks dead” than the older respondents, whose responses related more accurately to the planting in front of them. Younger generally had more negative opinions about the planting in Ruskin park, particularly in relation to their least preferred plot. In Sheffield, likewise, the older respondents were less negative and string in their view than the other groups. There was a tendency, although this needs further exploration, for older people (a) be be more moderate in their negative opinions and (b) to accurately assess the qualities of the planting in front of them.

These findings actually contradict some of the findings in the qualitative interviews. One interviewee, for example mentioned that older people like formal gardens and the formal planting in them. He did say that this was where they came to sit down. Whether they came for the benches to sit on, or to look at the planting, was not explored. The interaction between age and naturalistic planting was mentioned by one of the interviewees in relation to the freedom afforded by nature for children. It allows children to have natural experiences. This supports evidence found by the Burgess, Limb and Harrison studies that city parks should

provide natural experiences for children. This particular interviewee however, was pointing out the value of spontaneous natural experience, in allotments and forbidden spaces for children. Evidence of this was not apparent in the young peoples' response to the surveys who were rather strict, for want of a better term, about planting. Older peoples', more generous responses, may have related to memories that the younger cohort of respondents did not have. This provides some evidence for the alarming prospect of what Kahn (1995) called "environmental, generational amnesia" This theory says the less experience people have of a type of environment, the less they will expect of it. If the very young like things to be tidy in inner cities, and connote sparseness with deadness, they may well have no experience of plants growing in ecologically rich communities, which makes it all the more important to establish naturalistic planting in amenity situations.

7.1.6.Preference between the different planting types

Hypothesis 6. .People will like this planting but will also like other types of planting. In fact they are likely to express the desire for a variety of planting types.(Burgess, Harrison et al. 1988, Gilbert 1991, Ozguner and Kendle 2006)

In both Ruskin Park and Meersbrook Park, Sheffield approximately 50% of the respondents said they preferred this type of planting to other types of planting in the park. Around 20% (22% in London and 24% in Sheffield) said they had no opinion. While the rest said they did not prefer it. These results contradict the general consensus of the professionals, most of whom said that either people do not want to see NP in parks or elsewhere for various reasons, such as expectations and suitability. It is likely that greenspace employees are likely to hear complaints (albeit very few), possibly about the litter associated with NP. The specialist organisations that had had success with NP, said that it met with general approval. Indeed, greenspace employees who had had experience of NP in parks were positive. However, many said that it was not what people wanted. These results suggests a gap between what park users like to see, and what greenspace managers say they like to see. As was mentioned in the report in relation to

Telford, when greenspace managers talk about feedback from residents they are often talking about a handful of comments, or less out of many tens of thousands of users. This merits further exploration but also demonstrates the value of this multi method approach to the research question that could approach this question from several vantage points.

7.1.7.Gender

Hypothesis 7. There will be a difference in preference between the genders(Lyons 1983, Jorgensen 2004)

This study provided some evidence that there was a difference between the genders with regard preference for NP. Women showed a stronger preference for grasses and the shape of the planting than men. There is not much evidence vegetation preference and gender in the literature. Jorgenen (2004) provided evidence that gender influences vegetation preference as women tend to like open landscapes which may be related to feelings of safety (Jorgensen 2004). The openness and vista-rich nature of this type of planting may well be the reason that women express a preference for it. The subject of gender was partially explored in the qualitative part of the study. One interviewee (GE1, a woman) suggested that the all male culture of parks management that had a preoccupation with machinery was not conducive to the promotion of NP in amenity greenspaces. In relation to gender all but one of the interviewees were male, without a representative female sample it is not possible to make further assumptions about this. The study of gender and its relationship to landscape perception and landscape management, is likely to be highly nuanced and challenging to unpick. It is out of the reach of this study but further exploration of this subject would be very interesting.

7.1.8.Colour

Hypothesis 8. People will like the more colourful areas, and may like a diversity of colour. Their preference may plateau and drop after they see too much colour.(Mynott 2001, Hands and Brown 2002)

This was explored in the discussion of the quantitative findings. Indeed, the survey responses showed that preference for vegetation is influenced by colour. Two assumptions can be made, drawn from the findings of this study. The first is that there is a mid range of colour that will be preferred by a good proportion of respondents ie there is not a linear relationship between colour and preference. The second assumption is that a proportion of respondents will choose the highest density of colour in certain situations, such as in the context of a lot of green. This may be because it is a "vernacular cue to care" (Nassauer 1995) that mitigates unattractive features such as weeds. This may be due to reasons of familiarity as were explored earlier; those with less familiarity to NP may prefer a higher density of colour in their planting.This may be for some other aesthetic reason, "contrariety" was mentioned by Fort.

Mentions of colour in the qualitative part of the study generally related to density rather than quality. The idea was presented that a blast of colour, or "eye colour content" were necessary in cities for people to accept NP. One older interviewee suggested that colour in planting in cities can be equated with furniture in a house. People like the artificiality of it. It is part of the urban decoration that city dwellers and visitors like to see. This was not borne out by the quantitative evidence. As far as recommendations are concerned this study would recommend that a certain amount of colour will greatly enhance preference for naturalistic vegetation. One of the advantages of planting annual vegetation is the very high amount of colour that can be generated however the mid range of colour that can be offered by perennial planting over a long flowering season, coupled with a commitment to "the language of human intent" will in all likelihood be accepted as very attractive by park users in inner cities. There will be a good proportion of park users who may initially prefer a greater density of colour however familiarity will over time dissipate this preference. This study also provided some evidence to support Hands and Brown's (2002) theory that colour at the immature stage of planting will help acceptance, but at maturity can be too much.

7.1.9.Communication between park users and greenspace employees •

Hypothesis 9 There is a fundamental gap in the communication between park users and people who take care of parks. The latter work with a vacuum of their

own experience and make assumptions about their public not borne out by the evidence.

This study, looking at NP from the vantage point of both local authority employees, professionals in NP and park users did indeed establish a gap in communication between park users and people who take care of parks. Greenspace employees suggested that old people like formal planting (not proven), that people do not want to see NP in cities (not proven), that formal parks are not suitable for NP, (not proven), that people like "artificiality" (not proven). However there were a number of the interviewees who were in tune with park users, who recognised the challenges of meeting their expectations and made every effort to do so. The "conversation" between greenspace employees and park users, in relation to diversity in vegetation, may have been partially, and inadvertently, commandeered by wildlife trusts, "ranger", ecology and conservation type services who may have a poor history of interaction with greenspace managers. This would require further research.

7.1.10. Sparseness

Hypothesis 10. People will negatively judge sparseness in planting.(Hands and Brown 2002)

This study provided strong support that sparseness in planting is poorly tolerated. People do not like to see bare soil. The least preferred plots in London were the gappiest. On some of the research plots in this study there were many bare patches. This may be due to deep biophilic responses that relate to the fertility and nourishment potential of vegetation (Orians and Heerwagon 1992) or there may be implications of neglect (Nassauer 1995). When NP fails, as this study showed in Queens Park and some of the plots in Ruskin park, bare patches can be the consequence. Bare patches also signify that planting has failed. For local authorities, as was mentioned by GE1, failure is poorly tolerated. LAs may prefer not to innovate than be seen to fail.

7.1.11.Framing; the language of human intent.

Hypothesis 11. People will like to see frames for naturalistic planting. Evidence of human intent.(Harrison and Burgess 1989, Nassauer 1995)

Much evidence for this was found in this study, much more in the qualitative part of the study than the quantitative. Frames for naturalistic planting have maintenance implications, thus they were mentioned, albeit not explicitly, often in the study. Local authority employees suggested that NP was not suitable for entrances. We can infer from this that without proper “frames” or “cues”, NP is not suitable for parks. Green estate employees said that the mowing around areas of NP have to be very much more frequent than the most frequent mowing regimes to encourage acceptance.; that NP was definitely not low maintenance. The quantitative study showed slightly higher preference in terms of likert responses for questions around the outline shape of the meadow.in Ruskin park. This may have been because each plot was clearly delineated in a framed bed. There were, however some comments in Sheffield that people would have preferred the planting to blend in with the woodland behind it (so not been framed). Some comments said they wanted more paths mown through it. Again the context of the planting is a factor that influences preference. Some NP will need more framing than other, and peoples preference for framed NP may differ.

7.1.12.Mown grass

Hypothesis 12 Mown grass may be mentioned terms likely to be used are “boring” and “monotonous”. However it may not be mentioned at all. The experts interviewed may mention mown grass and the culture of mowing without probing.(Fairbrother 1972, Gilbert 1991)

Mowing was mentioned often by the greenspace employees. It was treated a s a statutory requirement and often mentioned alongside litter picking. There was little evidence that greenspace employees liked mown grass. They accepted that it was a major part of the task portfolio of greenspace management. The impression from this study was that mowing had been an easy task to incorporate into contract design (and redesign). It can be parcelled and counted which is helpful for local authorities given to restructuring the management of greenspace. There

was very little mention of the different standards of mown grass mentioned by Gilbert, indicating an erosion of the different qualities of mown grass over time. “gang mowing” was mentioned on more than on occasion. Thus some evidence has been found that mowing can be undertaken with little skill and easily specified which makes it a challenging barrier to overcome in terms of alternative forms of vegetation management.

7.1.13.Antisocial behaviour

Hypothesis 13 NP may be mentioned as attracting antisocial behaviour such as litter by both park users and professionals in the greenspace sector.

Professionals in the greenspace sector often mentioned litter and syringes in relation to naturalistic planting. It may be the case that they were connoting unmown grass, a form of spontaneous vegetation, with naturalistic planting. There were, particularly in Sheffield, associations made by greenspace employees of the extra maintenance requirements in terms of litter picking, of NP. One of the Green Estate professionals mentioned “tidy maintenance”, suggesting that there is a typology of landscape maintenance into which NP has to fit. It would fit somewhere between “tidy maintenance” and “responsive maintenance” which may make it challenging to specify in terms of contract design.

7.1.14.Preference of greenspace mangers and other employees

Hypothesis 14 Professionals will have a wide range of views about this type of planting. Local authority employees are likely to judge it highly but will not prefer it to other types of planting.(Ozguner, Kendle et al. 2007)

Support for the Ozguner and Kendle (2007) findings was found by this study. The Ozguner and Kendle study had found that conservation professionals tended to prefer naturalistic planting, while local authority greenspace professionals did judge it highly when they had experience of it, but not more highly than other types of planting. One of the employees in Bristol, BR1 and one of the city of

London employees CC3 appeared to judge formal planting more highly than NP. These individuals placed high value in horticultural skill and high maintenance planting. We could make the supposition that there is a spectrum of approaches, with horticulture at one end and what GE1 calls dynamic plant management at the other. Most local authority interviewees sat somewhere in the middle in terms of their personal approach, with BR1 and CC3 sitting at the horticultural end, and an employee like TW1 at the other. These approaches are to do with culture, education and training. There may be an ecocentric element to this but this would require further study. In terms of our study where greenspace employees sit on this spectrum may well constitute an occasional barrier to NP.

7.1.15.Compulsory competitive tendering

Hypothesis 14. Local authority employees may mention Compulsory competitive tendering, contractual limitations, cuts, lack of skills and separate conservation services in relation to innovations in vegetation management. (Yates and Ruff 1991, CABE 2006)

Without going into too much depth at this stage, as this idea has been sufficiently explored in this study, CCT was mentioned often as being a destructive force in innovation in vegetation management. As has been mentioned the damage done to morale in parks departments even more than thirty years after in introduction of CCT is very hard to reverse. The barriers presented by CCT may, in the present day, be less real than perceived as this study has shown that it could either be a barrier (Bristol) or promoter of NP (Telford) The idea of perceived barriers to motivation and performance was explored by Wright (2001) . This would be an area into which further research would be a recommendation.

7.1.16.Site suitability

Hypothesis 16.The interviewees may talk about planting suitable for cities.(Ozguner, Kendle et al. 2007)

There was evidence , particularly from the qualitative study, that certain types of planting was suitable for cities. This view surfaced in the more traditionalist interviews. BR1 said that he thought that NP was categorically not suitable for

cities. He, however, was in the minority in his view. Suitability for different types of parks and greenspaces within cities was mentioned by many of the interviewees, and it was often suggested as providing an innovative solution to problem areas. None of these views were reflected in the Quantitative survey.

7.1.17.Motivation

Hypothesis 17. The individuals being interviewed within the local authorities will have widely varying levels of motivation for innovation in vegetation.

This was certainly borne out by the findings of this study, which have been firmly anchored into theories about motivation in the public sector. The interviewees all revealed different levels of motivation in relation to widely varying goals. Vegetation innovation was not, in the main, a goal for the interviewees in local authorities, although, as one might expect, it was a goal for the experts in NP. TW1 and CC1 were the exception to the local authority employees. In the case of both of these organisations their particular landscape profiles meant that the organisations ' goals were closely allied to those of the interviewees. Telford with its roundabouts and verges that required a "solution". The City of London with its much cherished areas of encapsulated countryside.

In the absence of reporting NP of being a personal goal, some interviewees did mention Friends' groups in relation to decision making and, by association, motivation. A couple of the interviewees mentioned that if a friends' group had a goal, then they personally were the conduit to the achievement of that goal. Most of the references to friends' groups' goals were in relation to playgrounds and other hard structures. Some of the employees, in Bristol and Sheffield for example, had the main goal of creating the context in which another goal, any goal of a friends' group could be achieved. Their goal importance and commitment was concomitant with the goal of the friends' group. The logical extension of this theory is, that if a friends' group wanted an area of NP, it could be achieved. This idea was exemplified in the study itself. This study created an area of NP in a former bowling green in what ostensibly was a formal park in a densely populated part of London. When the local authority was approached they said that if it was ok with the friends' group then there would be no problem sowing the bowling green with an area of NP. The friends' group was a crucial part

of the decision making process. Another study would be to scrutinise the priorities, stakeholders and decision makers in friends' groups, as well as their organisational and communication structures, in relation to vegetation management and innovation and knowledge.

Where successful NP is already in practice for a local authority there will be an identifiable "champion" for the cause which will be evidenced in both the language and the results.

This study identified champions in the form of TW1, GE1 and LL1. The latter suggested that champions outside organisations could encourage champions an area within organisations. It is not just champions that will overcome some of the aforementioned barriers to NP, it is the relationships between those champions. As we saw in the case of Sheffield the relationship between the horticulturists and rangers had broken down which had caused the demise of an area of NP in a city park in Sheffield. Publicity is a mechanism that champions can use to persuade local authorities to undertake innovations in vegetation management. GE1 suggested that images are the most persuasive medium as they seduce local authorites into undertaking experiments with planting.

7.2 The theme of knowledge.

From a cultural perspective one of the major barriers was knowledge. Knowledge and interpretations of the term naturalistic planting was wide ranging and experience very limited. Naturalistic planting and urban ecology are, in terms of horticulture, relatively new fields. In the days when there was training in horticulture for managers, ecological planting, meadow creation, acid grass management were not subjects on the curriculum. So when we ask local authorities, or certain people within local authorities, to implement naturalistic planting we are really asking them to think, innovate and take risks. We are also asking them to engage with notions of conservation and ecology, as well as education often unsuspectingly attempting to reverse poor history of engagement with these disciplines. Some of our interviewees had a training in horticulture which has a very different approach to ecology, conservation or, what GE1 would call, dynamic plant management. It is here that third parties come in, in the guise of specialist organisations. Specialist organisations such as Green Estates serve several purposes. They gather and document knowledge about the subject, and, in the case of Landlife, publish it. Not only does Green Estate add to the body of knowledge in this area it will work with local authorities to give them confidence and encourage more species diversity in their parks. GE1 stressed, as did LL1 at landlife that *trust* went hand in hand with continuity which form the bedrock of fruitful relationships in vegetation management. Local authorities, it seems almost invariably need a third party to help them to innovate…or change and they need to retain a relationship of continuity with that party. TW1 at Telford had worked with the specialist seed supplier Pictorial Meadows to help get his aspiration off the ground. LL1 at landlife supported this view. He saw the role of Landlife as being a support role, to help "forward thinking" managers achieve their aspirations in vegetation management. He too stressed the importance of trust and continuity (the terms are almost interchangeable in this context) . Knowledge, in the broadest sense, can be a battle ground on which conservation, ecology and horticulture meet. This was explored in the literature review and was borne out by the findings. The background to this was most likely the coevolution of horticulture and countryside management, which may have tried to converge

with the use of ranger services; a non statutory service that fell prey to cuts in many LAs in the UK; in Bristol and Sheffield, as was explored in the discussion there was a deep mistrust between the horticulture and conservation services. This may be due to the continual stress of change and cuts; cuts in staff and machinery, that employees are subjected to, which breeds a culture of fear and mistrust. This tension was notably absent from CC1s discourse where these stresses and strains are absent.

7.3. Trust

This issue of trust is a major one. In the interviews with the local authorities and the specialist organisations trust, fear and courage were themes that came up again and again. The individuals in local authorities were risk averse in the main part and those that weren't, that saw failure as a part of the journey to success (such as TW1 in Telford or GE1 at Green estates) were having success in the establishment and, more importantly, development of naturalistic planting in parks and other open spaces.

One might be forgiven for being under the impression that they lived on the knife edge of a responsive, complaining and vocal public. This study would point to the opposite being true, at least about planting. What clearly came across, particularly peoples' comments about the meadows was that park users do not feel in touch with their local authority; There was an implicit, if not estrangement at least distance between the local authorities and their park users. One respondent in Sheffield said "please tell the park to stop cutting the grass so short" and the park users in London remarked that it was nice to see something planted at last. Employees of local authorities gave the impression that people jumped on the phone as soon as they saw things. In fact what local authorities refer to as feedback often refers to a handful of complaints (amongst tens of thousands of users in some cases). GE1 at Green Estates mentioned an almost irrational fear of things going wrong for local authorities and them "getting egg on their faces" . If it is not in front of the park users, then in front of whom? Their colleagues? Other departments? The conservationists or rangers or ecologists. It is most likely in front of the politicians at the top of local authorities for whom being seen to fail may lose them votes. This was suggested by BR1 at the beginning of the qualitative study.

The important question at this stage of the study is how can trust be garnered, and how can local authorities be encouraged to take risks.

7.4 Where are we now and wherefore the future of NP

The arrival of coalition government (2010 – 2015) meant that times would change for the UK parks.. Many of our interviewees' jobs may have been or potentially are under threat. The most disheartened view of the situation with parks today was given by David Lambert;

"Well, nothing had prepared us for 2010. Within days of the election of the new coalition government, it had launched a major campaign to identify public spending as the cause of a national debt crisis – the fault lay not with bankers in America but with binmen down your street, and nurses in your hospital and gardeners in your park. The aim was not to shrink the national debt, which the deficit reduction programme actually increased but to shrink the state and privatise public services.
I can remember the despair I felt when Paul Bramhill referred to local authorities 'as a busted flush."(Lambert 2015)

These views were somewhat supported in a report by the heritage lottery fund in 2014 (outlined in more detail in the literature review) that reported that there have been significant cuts to staff and budgets for parks over the past three years and that park managers and friends' groups anticipate many more cuts to come. Some local authorities, such as Sheffield for example, are working with other organisations such as the National Trust to find alternative forms of funding outside of the traditional funding structure, such as using endowment funding (it was reported that Sheffield city council would need an endowment of £106 million to raise 3.5 million a year to cover the costs of Sheffield' green spaces).(Seaward, Bradford-Keegan et al. 2015) One in ten local authorities is considering handing over part of their green spaces to other organisations to look after. The funding is simply being cut.(Heritage Lottery Fund 2014)
So wherefore the future of naturalistic planting? How will the barriers to naturalistic planting fit in this future where the management of parks is eroded and funding is withdrawn? We cannot answer that question. What we do know is that naturalistic planting is not dependent on finances alone, nor is it dependent on individuals alone, nor is it dependent on single organisations. Which one of our interviewees in the local authorities (with the exception of TW1) was

successfully implementing naturalistic planting? Which one of the job descriptions could we visit to to ensure that a meadow would be planted? The regeneration officer? The "Craft gardener keeper", The Community park manager? The "on-site presence" The answer, of course, is none. The specialists, for their part, depend on the local authorities to provide them with the Green spaces in which they can exercise their mission Their own narratives reveal that naturalistic planting is dependent on long lasting relationships and aspiration. These can be fostered within any institutional framework. It may sound trite to say but vision must be combined with teamwork, and given an environment where it can thrive.

"Professor Mark Moore, in his book Creating Public Value argues that public service innovation only blossoms when it has an authorising environment created by leaders to allow new approaches to emerge. Without this authorising environment to protect innovators, the levels of risk involved are simply too great for most managers to take on"(Parker and Leadbeater 2013)
Our case study of TW1 in Telford and Wrekin would attest to this assumption.

There are efforts being made on behalf of the future of parks. It would be worth mentioning the work of Nesta. (formerly NESTA, National endowment and for science, technology and the arts) This organisation acts through a combination of practical programmes, investment, policy and research, and the formation of partnerships to promote innovation across a broad range of sectors
In 2013 Nesta and the Heritage Lottery fund jointly launched a programme called rethinking parks (NESTA 2013, NESTA 2015). This programme aims to cast fresh eyes on the challenge of keeping UK Green spaces to a good standard. This programme commissioned the development of eleven projects that investigate alternative ways of looking after parks, outside the traditional parks and Leisure department structure. They range from renting out pop up office space (parkHack), to making them into "community hubs" (Everton park, Liverpool) and even commissioning VIP park volunteers who work alongside parks staff to complete projects (They have a much more hands-on and connected role to the actual grounds maintenance of the park than the traditional Friends group model, possibly not so dissimilar from the role this researcher built up with the grounds

maintenance staff in Ruskin Park in London). This last project specifically has wildlife in mind , and is part of of Burnley council's mission to rethink

"our parks in Burnley to make them more attractive, cheaper to maintain and better for wildlife. Simon Goff, Burnely borrough council.(NESTA 2015)

This study found that champions are needed to bring naturalistic planting into the heart of amenity space. These champions, within local authorities and without, must pursue their goals in the face of barriers that will be presented to them, in the form of technical and institutional barriers, and barriers presented from within their organisations. These champions could be managers, parks officers or friends' groups, university professors or landscape architects. They will encounter unwillingness and unresponsive management, which will have to be overcome. They will encounter poor communication between the management of parks and the individuals delivering the maintenance of the parks. Their projects will likely be beset by environmental obstructions. Clear identification of the goal at the outset may somehow disseminate the barrier presented by goal conflict, a problem that may well beset the achievement of the goal, particularly in the context of parks with their multiple types of user. These champions should disseminate knowledge using imagery and citing examples of best practice. Successful projects such as the Olympic park can be used as examples of best practice, and indeed have been an incitement for local authorities such as the London borough of Southwark to take the risk and establish NP on a large scale in the case of Burgess park in the London borough of Southwark.. These types of successful projects and the associated publicity can encourage senior decision makers in local authorities and their landscape architects to take risks and try new ways of doing things.

The people most likely to see an innovation through are not necessarily the ones you hear talking about their game–changing idea. ……problem–solving and practical, outward looking and adaptable, team players who are happy to put their ego to one side. They have a simple take on innovation as a process of sensing possibilities, by asking questions in new ways and understanding needs differently, and then responding by taking action, often working closely with the people they are serving. For them innovation is not a special activity, done only at special times in special places. It does involve challenging convention, being

prepared to think and work in new ways. But this is more effective in local government when it is part of doing the day job more effectively. As one senior manager told us – "you've got to look for the sausage and not the sizzle.(Parker and Leadbeater 2013)

This study considered the various cultures of local authorities when individuals manage to transcend their limits in terms of costs and management. The results of this study corroborate much of what was said in this report. TW1, in Telford was an example of somebody had a clear goal and was achieving it. GE1 of Green Estates was an example of somebody who offered the support to individuals with their own goals.

7.5 The limitations of the study

There were a number of limitations to this study and things that could have been done differently. It would have been useful to conduct questionnaires at different points over the summer. For example, by late summer, the beds that had been least preferred in Ruskin park because of the gaps were completely full of mature late flowering pink Cosmos. It is very likely that these would have been the preferred plots by September.

It would have been interesting to ask explore respondents' planting preference further. Asking them which type of planting they preferred to NP. (this may have been trees, or colourful bedding, herbaceous planting or roses, for example).

It would have been very useful to conduct the Sheffield surveys one year prior to when they were undertaken. The planting, in 2009, had a lot more of the flowering perennials in evidence. The preference results may have been more informative.

The "not in employment" group was not a satisfactory occupation group. The wide range of individuals represented by this group makes it difficult to offer valuable findings in terms of demography for occupation.

The final limitation was the length of time it took to complete this study. Due to circumstances outside my control it took more than double the anticipated completion time. In the context of this subject matter that is dependent on growing seasons and targeted peak flowering years, delays may well have crucially

compromised the validity of the findings. It is hoped that this has been mitigated by responsive research design and judicious use of the mixed method approach, as well as the incredible ability of annual plants to be sown, flower and complete their lifecycles in a single year.

7.6 And finally

Local authorities are often presented as disembodied mechanisms, themselves faceless, passive victims of the vicissitudes of Central government. Individuals are hidden behind ever changing job descriptions the presence of these individuals only noticeable when a service is withdrawn. The experience of this study was that employees of local authorities were thoughtful and reflective and committed to public service. That park users were thoughtful and reflective and supportive of their public service.

We showed that initiating naturalistic planting in four city parks was quite straightforward, and that park users were interested and supportive. We also showed that there are indeed environmental barriers to overcome, most plants need cultivation and ecosystems need to be built on firm foundations. Early response can ensure the success of a project. We showed that if an authority really wants to undertake naturalistic planting then the money can normally be found.

We also demonstrated that parks departments and greenspace professionals are individuals interacting in their own unique social ecologies, that organisations pass down cultural norms and interrupt, or not, the development and flourishing of these individuals and their work. We demonstrated that the task itself, the public service, can become sequestered by history, politics or even just human error. Strong relationships, goals and the environment conducive to achieving them can transcend these difficulties and should be identified within local authorities as a mechanism for change, be these intra-institutional relationships, relationships with third party organisations or relationships with the park users themselves who are, in the main, supportive and appreciative of their local park.

This thesis was wide reaching but it is hoped that there are avenues for further exploration. The challenge is never greater to increase diversity in our parks and keeping in mind the clear goal, talking and listening to people and educating them must be the way to achieve it.

I would like to acknowledge the work of James Hitchmough and Nigel Dunnett, and the late Oliver Gilbert, the work of whom I was introduced to late in the study but to whom I now realise I should be thankful. It has been a privilege to be able to contribute in a small way to their revolutionary and inspiring work in improving the greenspaces for ordinary people.

References

Abbas Tashakkori, C. T. *Integrating Qualitative and Quantitative Approaches to Research. The SAGE Handbook of Applied Social Research Methods. SAGE Publications, Inc*, Thousand Oaks, CA: SAGE Publications, Inc.

Appleton, J. (2003) *The Experience of place*, London: John Wiley.

Atha, J. (2003) *Public Perceptions of Naturalistic Vegetation*, unpublished thesis (Masters), University of Sheffield School of Landscape.

Armitage, H. (1910) Chantrey land. Sampson Low Marston and company reprinted by Sheffield City Libraries in 1981.

Atkinson, P. A. (2007) *Handbook of Ethnography [electronic resource]*, London, GBR: London, GBR SAGE Publications, 20070401.

Balling, J. D. and Falk, J. H. (1982) 'Development of visual preference for natural environments', *Environment and Behavior*, 14(1), 5-28.

Barbosa, O., Tratalos, J. A., Armsworth, P. R., Davies, R. G., Fuller, R. A., Johnson, P. and Gaston, K. J. (2007) 'Who benefits from access to green space? A case study from Sheffield, UK', *Landscape and Urban Planning*, 83(2-3), 187-195.

Bate, S. P. (1997) 'Whatever happened to organizational anthropology? A review of the field of organizational ethnography and anthropological studies', *Human Relations*, 50(9), 1147-1175.

Bate, S. P. (2006) 'Ethnography with 'Attitude': Mobilizing Narratives for Public Sector Change', *Organizing Innovation: New Approaches to Cultural Change and Intervention in Public Sector Organizations*, 10, 105-132.

Bjerke, T., Ostdahl, T., Thrane, C. and Strumse, E. (2006) 'Vegetation density of urban parks and perceived appropriateness for recreation', *Urban Forestry & Urban Greening*, 5(1), 35-44.

Bourassa, S. C. (1990) 'A Paradigm for Landscape Aesthetics', *Environment and Behaviour*, 6, 787-812.

Bourrassa (1991) *The Aesthetics of Landscape*, London and New york: Belhaven

Press.

Bourrassa, S. C. (1991) 'The Aesthetics of Landscape'.

Brewer, J. D. (2000) *Ethnography [electronic resource]*, Buckingham: Buckingham : Open University Press, 2000.

Burgess, J., Harrison, C. M. and Limb, M. (1988) *'People, parks and the urban green - a study of popular meanings and values for open spaces in the city'*, *Urban Studies*, 25(6), 455-473.

CABE (2004) *Parks need People: The skills shortage in parks - a summary of research.* The Commission for Architecture and the Built Environment.

CABE (2006) *Paying for parks, 8 models for funding urban green spaces*. The Commission for Architecture and the Built Environment.

CABE (2008) *Local Authority Greenspace Skills Survey.*The Commission for Architecture and the Built Environment.

CABE (2006) Making Contracts work for Wildlife. *The Commission for Architecture and the Built Environment.*

Carifio, James and Rocco J. Perla. (2007) "Ten Common Misunderstandings, Misconceptions, Persistent Myths and Urban Legends about Likert Scales and Likert Response Formats and their Antidotes." *Journal of Social Sciences* 3 (3): 106-116

Carpenter, M. (2013) 'From 'healthful exercise' to 'nature on prescription': The politics of urban green spaces and walking for health', *Landscape and Urban Planning*, 118, 120-127.

Conway, H. (1991) *People's Parks. The Design and Development of Victorian Parks in Britain*, Cambridge: Cambridge University Press.

Council, B. (2011) *Brent's borough profile.* [online], available: URL https://intelligence.brent.gov.uk/BrentDocuments/borough%20profile%20part%20one.pdf [accessed 16.11.2016].

Crang, M. and Cook, I. (2007) Doing ethnographies, *Sage.*

Crawley, M. (2011) 'London' in Kelcey, J. G. and Muller, N., eds., *Plants and Habitats of European cities*, 1 ed., New York: Springer Verlag, 207-236.

Dai, L. (2000) *Public perception of Naturalistic Herbaceous Vegetation in Urban landscapes and key elements that determine response*, unpublished Masters thesis. Department of Landscape. University of Sheffield

DCLG (2010) *Index of Multiple Deprivation 2010, Local Authority District Rank of Average Rank* [online], available:

http://opendatacommunities.org/data/societal-wellbeing/deprivation/imd-rank-la-2010 [accessed 22.11.2016].

de Groot, W. T. and van den Born, R. J. G. (2003) *'Visions of nature and landscape type preferences: an exploration in The Netherlands'*, Landscape and Urban Planning, 63(3), 127-138.

Dearden, P. (1984) 'Factors influencing landscape preferences - an empirical-investigation', *Landscape Planning*, 11(4), 293-306.

Dictionary, O. E. *"park, n."*, Oxford University Press.

Dodds, J. (2013) 'Minding the ecological body: neuropsychoanalysis and ecopsychoanalysis', *Frontiers in Psychology*, 4.

Dunlap, R. E., Van Liere, K. D., Mertig, A. G. and Jones, R. E. (2000) *'Measuring endorsement of the new ecological paradigm: A revised NEP scale',* Journal of Social Issues, 56(3), 425-442.

Dunlap, R. E. and Vanliere, K. D. (1978) 'New environmental paradigm', *Journal of Environmental Education*, 9(4), 10-19.

Dunnett, N., Swanwick, C. and Woolley, H. (2002) *Improving Urban Parks, Play areas and Open Spaces* Department for Local Government, Transport and the Regions.

Ernstson, H. and Sorlin, S. (2013) 'Ecosystem services as technology of globalization: On articulating values in urban nature', *Ecological Economics*, 86, 274-284.

Fairbrother, N. (1972) *New lives, New Landscapes*, Harmondsworth: Penguin Books.

Fort, T. (2000) *The Grass is Greener : Our Love Affair with the Lawn*, UK: Harper Collins.

Freeman, R. E. (1984) *Strategic Management: A Stakeholder Approach*, Boston: Pitman.

Fuller, R. A., Irvine, K. N., Devine-Wright, P., Warren, P. H. and Gaston, K. J. (2007) 'Psychological benefits of greenspace increase with biodiversity', *Biology Letters*, 3(4), 390-394.

Garbuzov, M., Fensome, K. A. and Ratnieks, F. L. W. (2015) 'Public approval plus more wildlife: twin benefits of reduced mowing of amenity grass in a suburban public park in Saltdean, UK', *Insect Conservation and Diversity*, 8(2), 107-119.

Garbuzov, M. and Ratnieks, F. L. W. (2014) 'Quantifying variation among garden plants in attractiveness to bees and other flower-visiting insects', *Functional Ecology*, 28(2), 364-374.

Garcia-Albarado, J. C. and Dunnett, N. (2009) 'PUBLIC PERCEPTION TOWARDS HERBACEOUS PLANTING SCHEMES', *Revista Chapingo Serie Horticultura*, (Sp. Iss. SI), 49-55.

Gasco, M. (2016) 'Living Labs, Implementing open innovation in the public sector', *Government information quarterly*.

Gilbert, A. (1982) 'URBAN POVERTY AND ECONOMIC-DEVELOPMENT - A CASE-STUDY OF COSTA-RICA - HERRICK,B, HUDSON,B', *Journal of Development Studies*, 18(3), 396-398.

Gilbert, F. F. (1982) 'PUBLIC ATTITUDES TOWARD URBAN WILDLIFE A PILOT STUDY IN GUELPH ONTARIO CANADA', *Wildlife Society Bulletin*, 10(3), 245-258.

Gilbert, O. L. (1989) *The ecology of urban habitats*, Chapman and Hall, 1989.

Gilbert, O. L. (1991) 'THE ECOLOGY OF URBAN HABITATS', *Gilbert, O. L. the Ecology of Urban Habitats. Xi+369p. Chapman and Hall: London, England, Uk; New York, New York, USA. Illus. Maps. Paper*, XI+369P-XI+369P.

Gilbert, O. L. (1992) *The flowering of the cities : the natural flora of 'urban commons' / by Oliver Gilbert*, Peterborough: Peterborough : English Nature, c1992.

Gilbert, O. L. (1998) *Habitat creation and repair / Oliver L. Gilbert and Penny Anderson*, Oxford: Oxford : Oxford University Press, 1998.

Gilchrist, K., Brown, C. and Montarzino, A. (2015) 'Workplace settings and wellbeing: Greenspace use and views contribute to employee wellbeing at pen-urban business sites', *Landscape and Urban Planning*, 138, 32-40.

Given, L. (2012) 'Action Research' in Given, L., ed., *The SAGE Encyclopedia of Qualitative Research Methods*, Thousand Oaks: SAGE publications inc., 5-7.

Given, L. M. (2012) 'Action Research' in Given, L. M., ed., *The SAGE encyclopedia of research methods*, Thousand Oaks: SAGE publications inc.

Gobster, P. H. (1999) 'An Ecological Aesthetic for Forest Landscape Management', *Landscape Journal*, 18(1), 54.

Gobster, P. H. (2007) 'Comment on "Ethnicity as a variable in leisure research" by Li et al', *Journal of Leisure Research*, 39(3), 546-553.

Gobster, P. H., Nassauer, J. I., Daniel, T. C. and Fry, G. (2007) 'The shared landscape: what does aesthetics have to do with ecology?', *Landscape Ecology*, 22(7), 959-972.

Government, D. f. C. a. L. (2011) *English Indices of Deprivation 2010.*

Grace, D., McGill, E., Lock, K. and Egan, M. 'How do Cumulative Impact Policies work? Use of institutional ethnography to assess local government alcohol policies in England', *The Lancet*, 384, S34.

Green, D. P. *Experimental Design. The SAGE Encyclopedia of Social Science Research Methods. Sage Publications, Inc*, Thousand Oaks, CA: Sage Publications, Inc.

Gulliver, R. Patterns of flowering in grasslands – providing a baseline for environmental planning and managers

NHS Brent Clnical commissioning group (2015) *Deprivation* [online], Joint Stategic Needs Assessment, Brent, available: https://intelligence.brent.gov.uk/BrentDocuments/JSNA%202015%20-%20Deprivation.pdf [accessed 16.11.2016].

Hands, D. E. and Brown, R. D. (2002) 'Enhancing visual preference of ecological rehabilitation sites', *Landscape and Urban Planning*, 58(1), 57-70.

Harnik, P. (2000) Inside City Parks, Washington D.C: Urban Land Institute.

Harrison, C. and Burgess, J. (1989) 'Living Spaces', *Landscape Design*, 14 - 16.

Heritage Lottery Fund (2014) *The state of UK Parks, Rennaissance to Risk*The Heritage Lottery Fund.

Herzog, T. R. (1995) 'A Cognitive Analysis of Preference for Urban Nature' in Sinha, A., ed., *Landscape perception*, London: Academic Press, 65 - 81.

Herzog, T. R., Herbert, E. J., Kaplan, R. and Crooks, C. L. (2000) 'Cultural and developmental comparisons of landscape perceptions and preferences', *Environment and Behavior*, 32(3), 323-346.

Herzog, T. R., Kaplan, S. and Kaplan, R. (1976) 'The prediction of Preference for familiar Urban places', *Environment and Behaviour*, 8, 627 - 645.

Herzog, T. R., Kaplan, S. and Kaplan, R. (1982a) 'The prediction of preference for unfamilar urban places', *Population and Environment : Behvioural and Social Issues*, 5, 43 - 59.

Herzog, T. R., Kaplan, S. and Kaplan, R. (1982b) 'THE PREDICTION OF PREFERENCE FOR UNFAMILIAR URBAN PLACES', *Population and Environment*, 5(1), 43-59.

Hitchmough, J. (2002) 'Philosophical and practical challenges to the design and management of plantings in urban greenspace in the 21(st) century', in JungeBerberovic, R. B. J. B. S. W. J., ed., *International Conference on Urban Horticulture*, Wadenswil, SWITZERLAND, Sep 02-06, International Society Horticultural Science, 97-103.

Hitchmough, J. (2004) 'Philosophical and practical challenges to the design and

management of plantings in urban greenspace in the 21(st) century' in Junge Berberovic, R., Bachtiger, J. B. and Simpson, W. J., eds., *Proceedings of the International Conference on Urban Horticulture* 97-103.

Hitchmough, J. (2010) 'Applying an Ecological Approach; the Future of Urban Horticulture?', *Ii International Conference on Landscape and Urban Horticulture*, 881, 193-200.

Hitchmough, J. (2011) 'Exotic plants and plantings in the sustainable, designed urban landscape', *Landscape and Urban Planning*, 100(4), 380-382.

Hitchmough, J. and de la Fleur, M. (2006) 'Establishing North American prairie vegetation in urban parks in northern England: Effect of management and soil type on long-term community development', *Landscape and Urban Planning*, 78(4), 386-397.

Hitchmough, J., Kendle, T. and Paraskevopoulou, A. T. (2001) 'Seedling emergence, survival and initial growth of forbs and grasses native to Britain and central/southern Europe in low productivity urban "waste" substrates', *Urban Ecosystems*, 5(4), 285-308.

Hitchmough, J., Paraskevopoulou, A. and Dunnett, N. (2008) 'Influence of grass suppression and sowing rate on the establishment and persistence of forb dominated urban meadows', *Urban Ecosystems*, 11(1), 33-44.

Hitchmough, J. and Wagner, M. (2013) 'The dynamics of designed plant communities of rosette forming forbs for use in supra-urban drainage swales', *Landscape and Urban Planning*, 117, 122-134.

Hitchmough, J. and Woudstra, J. (1999) 'The ecology of exotic herbaceous perennials grown in managed, native grassy vegetation in urban landscapes', *Landscape and Urban Planning*, 45(2-3), 107-121.

Hitchmough, J. D. (2000) 'Establishment of cultivated herbaceous perennials in purpose-sown native wildflower meadows in south-west Scotland', *Landscape and Urban Planning*, 51(1), 37-51.

Hitchmough, J. D. (2004) 'Naturalistic herbaceous vegetation for urban landscapes' in *The Dynamic Landscape*, London: Spon press, 131 - 183.

Hopkins, A. (2008) *Country Pasture/Forage Resource profile*Food and Agricultural Organisation.

Hsiu-Fang HsiehFooyin University, K. H., Taiwan<contrib-group><contrib contrib-type="author" type="simple"><string-name contrib-type="author" index="Shannon, Sarah E" name-style="western" xml:space="preserve"><given-names>Sarah E.</given-names> Shannon</string-name></contrib-group>.

Irvine, K. N., Warber, S. L., Devine-Wright, P. and Gaston, K. J. (2013) 'Understanding Urban Green Space as a Health Resource: A Qualitative

Comparison of Visit Motivation and Derived Effects among Park Users in Sheffield, UK', *International Journal of Environmental Research and Public Health*, 10(1), 417-442.

Jorgensen, A. (2004) 'The social and cultural context of ecological plantingss' in Dunnett, N. P. a. H., J.D, ed., *The Dynamic Landscape: Design, Ecology and Management of Naturalistic Urban Planting*, London: Taylor & Francis.

Jorgensen, A. (2011) 'Beyond the view: Future directions in landscape aesthetics research', *Landscape and Urban Planning*, 100(4), 353-355.

Jorgensen, A. and Gobster, P. H. (2010) 'Shades of Green: Measuring the Ecology of Urban Green Space in the Context of Human Health and Well-Being', *Nature + Culture*, 5(3), 338-363.

Jorgensen, A., Hitchmough, J. and Calvert, T. (2002) 'Woodland spaces and edges: their impact on perception of safety and preference', *Landscape and Urban Planning*, 60(3), 135-150.

Juujarvi, S. and Lund, V. (2016) 'Enhancing Early Innovation in an Urban Living Lab. Lessons from Espoo, Finland.', *Technology Innovation Management Review*, 6(1), 17-27.

Kaltenborn, B. P. and Bjerke, T. (2002) 'Associations between environmental value orientations and landscape preferences', *Landscape and Urban Planning*, 59(1), 1-11.

Kaplan, R. (1977) 'patterns of environmental preference', *Environment and Behavior*, 9(2), 195-216.

Kaplan, R. (1983) 'The Role of Nature in the Urban Context' in Altman, I. a. W., J.F., ed., *Behavior and the Natural Environment*, New York: Plenum.

Kaplan, R. (1985) 'The analysis of perception via preference: A strategy for studying how the environment is experienced', *Landscape Planning*, 12(2), 161-176.

Kaplan, R. (2001) 'The nature of the view from home - Psychological benefits', *Environment and Behavior*, 33(4), 507-542.

Kaplan, R. and Herbert, E. J. (1987) 'Cultural and sub-cultural comparisons in preferences for natural settings', *Landscape and Urban Planning*, 14(C), 281-293.

Kaplan, R. and Kaplan, S. (1989) *The Experience of Nature. A Psychological Perspective*, New York: Cambridge University Press.

Kaplan, R., Kaplan, S. and Ryan, R. L. (1998) *With people in Mind, Design and Management of Everyday Nature*, Washington D.C., Covelo, California: Island Press.

Kaplan, R. and Talbot, J. F. (1988) 'Ethnicity and preference for natural settings: A review and recent findings', *Landscape and Urban Planning*, 15(1-2), 107-117.

Kaplan, S. (1995) 'The restorative benefits of nature - toward an integrative framework', *Journal of Environmental Psychology*, 15(3), 169-182.

Keane, T. (1990) 'The role of familiarity in prairie landscape aesthetics', in Smith, D. D. and Jacobs, C. A., Editor, eds., *Proceedings of the twelfth North American prairie conference*, Cedar falls, Iowa, University of Iowa, 218.

Kelcey, J. G. and Muller, N. (2011) *Plants and Habitats of European Cities*, Springer New York.

Kendal, D., Hauser, C. E., Garrard, G. E., Jellinek, S., Giljohann, K. M. and Moore, J. L. (2013) 'Quantifying Plant Colour and Colour Difference as Perceived by Humans Using Digital Images', *Plos One*, 8(8).

Kendal, D., Williams, K. J. H. and Williams, N. S. G. (2012a) 'Plant traits link people's plant preferences to the composition of their gardens', *Landscape and Urban Planning*, 105(1-2), 34-42.

Kendal, D., Williams, N. S. G. and Williams, K. J. H. (2012b) 'A cultivated environment: Exploring the global distribution of plants in gardens, parks and streetscapes', *Urban Ecosystems*, 15(3), 637-652.

Kessel, A., Green, J., Pinder, R., Wilkinson, R., Grundy, C. and Lachowycz, K. (2009) 'Multidisciplinary research in public health: A case study of research on access to green space', *Public Health*, 123(1), 32-38.

Kimbell, L. (2015) 'Ethnography in policy making, barriers and opportunities', *Open Policy making* [online], 24.09.2015, available: https://openpolicy.blog.gov.uk/2015/03/27/ethnography-in-policymaking/ [accessed.

Klimek, S., Kemmermann, A. R. G., Hofmann, M. and Isselstein, J. (2007) 'Plant species richness and composition in managed grasslands: The relative importance of field management and environmental factors', *Biological Conservation*, 134(4), 559-570.

Koeppler, M.-R., Kowarik, I., Kuehn, N. and von der Lippe, M. (2014) 'Enhancing wasteland vegetation by adding ornamentals: Opportunities and constraints for establishing steppe and prairie species on urban demolition sites', *Landscape and Urban Planning*, 126, 1-9.

Kvale, S. (1996) *Interviews : an introduction to qualitative research interviewing / Steinar Kvale*, Thousand Oaks, Calif: Sage Publications.

Lambert, D. (2015) 'The Parks movement. 1990 - 2015', in *Paxton 150. The History and Future of Public Parks*, Sheffield University Department of Landscape, Unpublished

NHS Lambeth. (2011) Lambeth Joint Strategic Needs Assessment. Downloaded from CPA (centre for policy on aging) URL http://www.cpa.org.uk. Nov 10 2016.

Landlife (2008) *Annual Report 2007/2008*, Liverpool.

Lindemann-Matthies, P, Junge, X., Matthies, D,M., (2010) The influence of plant diversity on people's perception and aesthetic appreciation of grassland vegetation, *Biological Conservation* 143, 195 – 202.

Lindemann-Matthies, P., Bose, E. (2007)'Species richness, structural diversity and species composition in meadows created by visitors of a botanical garden in Switzerland. Landscape and Urban Planning.
s

City of London (2010) *London deprivation map* [online], available: https://www.cityoflondon.gov.uk/business/supporting-local-communities/Documents/london-map-deprivation-improved-accessibility.pdf [accessed 21.11.2016].

Lososová, Z., Chytrý, M., Tichý, L., Danihelka, J., Fajmon, K., Hájek, O., Kintrová, K., Kühn, I., Láníková, D., Otýpková, Z. and Řehořek, V. (2012) 'Native and alien floras in urban habitats: A comparison across 32 cities of central Europe', *Global Ecology and Biogeography*, 21(5), 545-555.

Lososová, Z., Horsák, M., Chytrý, M., Čejka, T., Danihelka, J., Fajmon, K., Hájek, O., Juřičková, L., Kintrová, K., Láníková, D., Otýpková, Z., Řehořek, V. and Tichý, L. (2011) 'Diversity of Central European urban biota: Effects of human-made habitat types on plants and land snails', *Journal of Biogeography*, 38(6), 1152-1163.

LUC (2013) *State of the UK's Public Parks Report Scoping Study*.

Luczaj, L. (2006) 'Using a seed mix to establish native hay meadow species in ornamental meadows', *Polish Botanical Studies*, 22, 347-354.

Luscombe, G. and Scott, R. (2004) 'Wildflowers work. A guide to creating and managing new wildflower landscapes. Landlife.

Luscombe, G., Scott, R. and Young, D. (2008) *Soil inversion works*, Liverpool: Landlife.

Lyons, E. (1983) 'DEMOGRAPHIC CORRELATES OF LANDSCAPE PREFERENCE', *Environment and Behavior*, 15(4), 487-511.

M, I. (2008) 'Project aims to change view of meadows', *Horticulture Week*.

Marini, L., Scotton, M., Klimek, S. and Pecile, A. (2008) 'Patterns of plant species richness in Alpine hay meadows: Local vs. landscape controls', *Basic and Applied Ecology*, 9(4), 365-372.

Matheson, C. (1996) 'Organisational structures in the Australian Public Service', *Australian Journal of Public Administration*, 55(2), 36-46.

Matheson, C. (1998) 'Is the higher public service a profession?', *Australian Journal of Public Administration*, 57(3), 15-27.

Matheson, C. (1999) 'The sources of upward mobility within public sector organizations: A case study', *Administration & Society*, 31(4), 495-524.

Matheson, C. (2007) 'In praise of bureaucracy? A dissent from Australia', *Administration & Society*, 39(2), 233-261.

Matheson, C. (2009) 'Understanding the Policy Process: The Work of Henry Mintzberg', *Public Administration Review*, 69(6), 1148-1161.

Matheson, C. (2012) 'The Motivation of Public Sector Employees: An Outline of Six Orientations to Work', *Administration & Society*, 44(2), 207-237.

McCann, K. S. (2000) 'The diversity-stability debate', *Nature*, 405(6783), 228-233.

McCrea, A. R., Trueman, I. C. and Fullen, M. A. (2004) 'Factors relating to soil fertility and species diversity in both semi-natural and created meadows in the West Midlands of England', *European Journal of Soil Science*, 55(2), 335-348.

Mitchell, R. K., Agle, B. A. and Wood, D. W. (1997) 'Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What really Counts".', *Academy of Management Review*, 22(4), 853-886.

Monbiot, G. (2011) 'The medieval, unaccountable Corporation of London is ripe for protest', *The Guardian* [Comment], 31 Oct 2011.

Mynott, L. (2001) *User perception of naturalistic vegetation in Parks, MA thesis*, Internal University of Sheffield Report, unpublished.

Nassauer, J. I. (1988) 'THE AESTHETICS OF HORTICULTURE - NEATNESS AS A FORM OF CARE', *Hortscience*, 23(6), 973-977.

Nassauer, J. I. (1995) 'Culture and changing landscape structure', *Landscape Ecology*, 10(4), 229-237.

Nassauer, J. I. (1995) 'Messy Ecosystems, Orderly frames', *Landscape Journal*, 14(2), 161-170.

Neal, P. (2013) *Rethinking Parks. Exploring new Business models for parks in the 21st centur*$_y$

.

NESTA *Burnley Council is developing an alternative model of park management to sustainably manage large areas using ecological and permaculture*

techniques [online], available: http://www.nesta.org.uk/go-park-burnley [accessed 24.09.2015].

NESTA (2013) *Rethinking Parks*, London.

NESTA (2015) *Rethinking Parks* [online], available: http://www.nesta.org.uk/project/rethinking-parks [accessed 23/9/2015].

Nesti, G. (2015) 'Urban Living labs as a new form of co-production. Insights from the European experience.', in *International Conference on Public Policy*, Milan, 1 - 4 July 2015.

Nevens, F., Frantzeskaki, N., Gorisson, L,. Loorbach, D. (2013) 'Urban Transition labs: Co creating tranformative action for sustainable cities.', *Journal of Cleaner production*, 50, 111-122.

O'Brien, L. and Varley, P. (2012) 'Use of ethnographic approaches to the study of health experiences in relation to natural landscapes', *Perspectives in Public Health*, 132(6), 305-312.

Online utility.org (2015) *Text analyser* [online], available: http://www.online-utility.org/text/analyzer.jsp [accessed 25.09.2015].

Ozguner, H. and Kendle, A. D. (2006) 'Public attitudes towards naturalistic versus designed landscapes in the city of Sheffield (UK)', *Landscape and Urban Planning*, 74(2), 139-157.

Ozguner, H., Kendle, A. D. and Bisgrove, R. J. (2007) 'Attitudes of landscape professionals towards naturalistic versus formal urban landscapes in the UK', *Landscape and Urban Planning*, 81(1-2), 34-45.

Parker, S. and Leadbeater, C. (2013) 'Call for Action, Ten Lessons for Local Authority Innovators'.

Perecman, E. and Curran, S. R. (2006) *A handbook for social science field research : essays & bibliographic sources on research design and methods*, London: SAGE.

Pieter Ballon, M. D. S. D. and Franz, Y. (2015a) 'Designing social living labs in urban research', *info*, 17(4), 53.

Pieter Ballon, M. D. S. D. and Franz, Y. (2015b) 'Designing social living labs in urban research', *info*, 17(4), 53.

Purcell, A. T. (1986) 'Environmental perception and affect: a schema discrepancy model', *Environment and Behavior*, 18, 3 - 30.

Purcell, A. T. and Lamb, R. J. (1998) 'Preference and naturalness: An ecological approach', *Landscape and Urban Planning*, 42(1), 57-66.

Pywell, R. F., Bullock, J. M., Tallowin, J. B., Walker, K. J., Warman, E. A. and

Masters, G. (2007) 'Enhancing diversity of species-poor grasslands: an experimental assessment of multiple constraints', *Journal of Applied Ecology*, 44(1), 81-94.

Qiu, L., Lindberg, S. and Nielsen, A. B. (2013) 'Is biodiversity attractive?-On-site perception of recreational and biodiversity values in urban green space', *Landscape and Urban Planning*, 119, 136-146.

Rae, A. (2011) *Deprivation in Sheffield* Department of Town and Regional Planning, University of Sheffield.

Reeves, N. (2002) *ILAM model customer survey questionnaires for managers of Public parks*, Reading: Institute of Landscape Management.

Likert, R (1932). "A Technique for the Measurement of Attitudes". Archives of Psychology. ***140****: 1–55.*

Ribe, R. (2008) *Do Landscape Assessments Need to Account for Environmental Attitudes and Demographics? Scenic Beauty Perceptions of Old-growth and Harvested Forests by Ecotopian Versus Timber Subcultures in the U.S. Pacific Northwest* [online], available: [accessed.

Robin Wooffitt, S. W. *Interaction in Interviews. Talk and Interaction in Social Research Methods. SAGE Publications Ltd*, London, England: SAGE Publications Ltd.

Robinson, W. (1903) *The wild garden, or the naturalization and natural grouping of hardy exotic plants, with a chapter on the garden of British wild flowers*, 5th ed., London: Murray.

Rotherham, I. D. (2015) *The Rise and Fall of Countryside Management. A historical account.*, Oxford and New York: Routledge.

Rudmann-Maurer, K., Weyand, A., Fischer, M. and Stocklin, J. (2008) 'The role of landuse and natural determinants for grassland vegetation composition in the Swiss Alps', *Basic and Applied Ecology*, 9(5), 494-503.

Schipperijn, J., Ekholm, O., Stigsdotter, U. K., Toftager, M., Bentsen, P., Kamper-Jorgensen, F. and Randrup, T. B. (2010) 'Factors influencing the use of green space: Results from a Danish national representative survey', *Landscape and Urban Planning*, 95(3), 130-137.

Schuurman, D., De Marez, M. and Ballon, P. (2016) 'The impact of living lab methodology on open innovation outcomes', *Technology and Innovation Management Review*, 6(1), 7 - 16.

Seaward, T., Bradford-Keegan, V. and Bailey, B. (2015) 'Conserving public parks in the 21st century: Can todays Conservation Movement Learn from our Victorian Forebears', in *Paxton150*, Department of Landscape, University of Sheffield.

Shaxton, N. (2011) 'The Tax Haven in the Heart of Britain', *The New Statesman*, 24 feb 2011http://www.newstatesman.com/economy/2011/02/london-corporation-city [accessed.

Sheail, J., Treweek, J. R. and Mountford, J. O. (1997) 'The UK transition from nature preservation to 'creative conservation'', *Environmental Conservation*, 24(3), 224-235.

Shuttleworth, S. (1980) 'The Use of Photographs as an Environmental Presentation Medium in Landscape Studies.', *Journal of Environmental Management*, 11(11), 61-76.

Sinha, A. (1995) *Readings in Environmental Psychology*, London: Academic Press.

Spradley, J. P. (1979) *The ethnographic interview*, Fort Worth ; London: Fort Worth ; London : Harcourt Brace Jovanovich, 1979.

Strumse, E. (1996) 'Demographic differences in the visual preferences for agrarian landscapes in Western Norway', *Journal of Environmental Psychology*, 16(1), 17-31.

Swanwick (1991) *Landscape assessment principles and practice*.

Sullivan,W.(2014) “Nature and Well Being”, in ed. Michalos *A. Encyclopedia of lth and Well Being*, A.C. Springer. Dortecht Netherlands pp4264-4269

Taylor, M. (2010) 'Experimental meadows', in *The Cultivation and Display of Native Species*, Cambridge.

Taylor, M. (2008) 'Diversity in Amenity Planting', *BG Journal*, 5(2), 15-18.

Taylor, M. (2010) *Ruskin Park Meadow* [online], available: https://www.youtube.com/watch?v=41y_0-66XJo [accessed.

The Routledge companion to landscape studies / edited by Peter Howard, Ian Thompson, Emma Waterton (2013), Abingdon, Oxon ; New York: Routledge.

The Royal Parks. Stakeholder Engagement Strategy (March 2014) The Royal Parks.

Thompson, C. W. (2011) 'Linking landscape and health: The recurring theme', *Landscape and Urban Planning*, 99(3-4), 187-195.

Thompson, S. C. G. and Barton, M. A. (1994) 'Ecocentric and anthropocentric attitudes toward the environment', *Journal of Environmental Psychology*, 14(2), 149-157.

Todorova, A., Shoichiro, A. and Tetsuya, A. (2004) 'Preferences for and attitudes towards street flowers and trees in Sapporo, Japan', *Landscape and Urban Planning*, 69, 403-416.

Tylecote, M. and Dunnett, N. (2012) 'Enhancing ruderal perennials in Manor Fields Park, Sheffield A new park on the 'bandit lands' of urban green space dereliction', *Urban Wildscapes*, 141-151.

Urban Parks Forum (2001a) *Public Parks Assessment –A Survey of Local Authority Owned Parks Focusing on Parks of Historic Interest.* Urban Parks Forum.

Urban Parks Forum (2001b) *Public Parks assessment; a survey of local authority owned parks focussing on parks of historic interest*DLTR The Heritage Lottery Fund, The Countryside Agency and English Heritage).

Van den Berg, A. E. and Koole, S. L. (2006) 'New wilderness in the Netherlands: An investigation of visual preferences for nature development landscapes', *Landscape and Urban Planning*, 78(4), 362-372.

van den Berg, A. E., Vlek, C. A. J. and Coeterier, J. F. (1998) 'Group differences in the aesthetic evaluation of nature development plans: A multilevel approach', *Journal of Environmental Psychology*, 18(2), 141-157.

van den Born, R. J. G. and de Groot, W. T. (2009) 'The Authenticity of Nature: An Exploration of Lay People's Interpretations in the Netherlands', *New Visions of Nature: Complexity and Authenticity*, 47-66.

Van Den Born, R. J. G., Lenders, R. H. J., De Groot, W. and Huijsman, E. (2001) 'The new biophilia: an exploration of visions of nature in Western countries', *Environmental Conservation*, 28(1), 65-75.

Vannucchi, F., Malorgio, F., Pezzarossa, B., Pini, R. and Bretzel, F. (2015) 'Effects of compost and mowing on the productivity and density of a purpose-sown mixture of native herbaceous species to revegetate degraded soil in anthropized areas', *Ecological Engineering*, 74, 60-67.

Venterink, H. O., van der Vliet, R. E. and Wassen, M. J. (2001) 'Nutrient limitation along a productivity gradient in wet meadows', *Plant and Soil*, 234(2), 171-179.

Wagner, M. M. and Gobster, P. H. (2007) 'Interpreting landscape change: Measured biophysical change and surrounding social context', *Landscape and Urban Planning*, 81(1-2), 67-80.

Walker, K. J., Pywell, R. F., Warman, E. A., Fowbert, J. A., Bhogal, A. and Chambers, B. J. (2004a) 'The importance of former land use in determining successful re-creation of lowland heath in southern England', *Biological Conservation*, 116(2), 289-303.

Walker, K. J., Stevens, P. A., Stevens, D. P., Mountford, J. O., Manchester, S. J. and Pywell, R. F. (2004b) 'The restoration and re-creation of species-rich lowland grassland on land formerly managed for intensive agriculture in the UK', *Biological Conservation*, 119(1), 1-18.

Wikipedia *Nesta (Charity)* [online], available: https://en.wikipedia.org/wiki/Nesta_(charity) [accessed 24/09/2015].

Wikipedia (25 February 2016,) *Agriculture in the United Kingdom* [online], available: https://en.wikipedia.org/wiki/Agriculture_in_the_United_Kingdom [accessed.

Wiley, K. (2004) *On the Wild Side*, Portland., Or., Cambridge, Uk.: Timber Press.

Wilkinson, D. M. (2001) 'Is local provenance important in habitat creation?', *Journal of Applied Ecology*, 38(6), 1371-1373.

Wilson, E. O. (1984) *Biophilia*, Cambridge, Massachusetts and London: Harvard University Press.

Wilson, E. O. (1992) *The Diversity of Life*, Cambridge MA: Harvard University Press.

Woudstra, J., Fieldhouse, K. (2000) *The Regeneration of Public Parks*, Spon.

Woudstra, J. and Hitchmough, J. D. (2000) 'The enamelled mead:history and practice of exotic perennials grown in grassy swards.', *Landscape Research*, 25(1), 29-47.

Wright, B. E. (2001) 'Public sector work motivation, a review of the current literature and revised conceptual model', *Journal of Public Administration Theory*, 11(4), 559-586.

Yates, D. and Ruff, A. R. (1991) *Encouraging nature in public parks, the consequences of adopting a more ecological approach to design and maintenance. Masters thesis.* Department of Planning and Landscape, University of Manchester.

Zhang, y. (2007) *Public attitudes towards naturalistic planting*, Internal Department of landscape. University of Sheffield Report, unpublished.

Zube, E. H. and Busch, M. L. (1990) 'Park-people relationships: an international review', *Landscape and Urban Planning*, 19(2), 117-131.

Zube, E. H., Friedman, S. and Simcox, D. E. (1989) 'Landscape change: perceptions and physical measures', *Environmental Management*, 13(5), 639-644.

References

APPENDIX 1: Publicity Associated with the Project

From Horticulture Week, 7th February 2008

Project aims to change view of meadows

By Magda Ibrahim

Perennial wildflower meadows are seen as the "trailer trash" of the horticultural world, according to a renowned academic from the University of Sheffield.

But that could change, if research aiming to shake up parks workers' attitudes is successful.

A team led by Professor James Hitchmough, of the university's department of landscape, has sown seeds in three urban parks to create meadows that form a patchwork of different mixes of native and exotic wildflowers and grasses.

The views of park visitors and staff will be surveyed as part of the five-year project looking at the appeal of wildflower meadows.

CLIVE TOMAN

Taylor: hopes project will become permanent

Professor Hitchmough said: "The hypothesis is that most horticulture-trained staff don't value meadows – they view them as 'trailer trash'. My contention is that [meadows are] just another type of horticulture and shouldn't be something to sweep away."

The research team, which also includes PhD student Mima Taylor, is creating the meadows at parks in London, Sheffield and Bristol, and plans to hold open days in summer 2009 to gauge reactions.

The seed mixes vary in proportion, so some parts of the patchwork will be more colourful, while others will be more heavily grassed.

Some of the flowers being used in the scheme include *Leucanthemum*, *Prunella*, *Achillea*, *Dianthus* and *Papaver*.

Taylor said she hoped the project would become a permanent fixture and that other local authorities might use it as a model for their own parks. "We want to see which mix is the one the public likes the most, and it should be self-sustaining after the first year."

She added: "We're also going to look at how much weed invasion there is, along with damage from pigeons and dogs."

Manager Mairtin Coss of the City of London's Queen's Park, where one of the studies is being held, said he had been keen to develop a meadow for some time.

He said it fitted into his approach to Queen's Park, which included allowing the golf course to grow rather than cutting it all the time.

Defra confirms finding of Phytophthora kernoviae in wild

Defra confirmed the first discovery in the wild of *Phytophthora kernoviae* on bilberry (*Vaccinium myrtillus*) at a site in Cornwall last month.

The confirmation came just days after the pathogen was discovered for the first time in Scotland.

Prior to this, the fungal infection was thought to be contained at three nursery sites and in woodlands and public gardens in Cornwall and Wales. The pathogen was first discovered in the UK in 2003.

A Defra representative said: "Further investigation is being undertaken to confirm this is an isolated incident. We are discussing containment and eradication action with local stakeholders."

P. kernoviae causes bleeding cankers on the bark of trees, which can kill the host. It also causes leaf blights on shrubs. Having infected bilberry, its spread is a threat to native heath land across Britain.

P. kernoviae is distinct from *P. ramorum* but appears to behave in a similar fashion, being spread by spores in mist or water. Long-distance spread is thought to be caused by moving contaminated plant material or growing media, and in soil carried on vehicles, machinery, footwear or animals.

■ *See www.defra.gov.uk/planth/pestnote/kern.pdf*

IoG modifies its training courses

The Institute of Groundsmanship (IoG) has introduced a revised training course structure to "set a new benchmark in the training, education and skills recognition of grounds professionals".

The courses replace the former Level 1-3 status with a four-tier structure: foundation, intermediate and advanced one-day courses, and a two-day course on management of sports turf.

The IoG said the courses had updated content and were in line with the views of users, IoG training instructors and the national governing bodies of sport, which support and endorse the courses that are aligned to Sector Skills Council/City & Guilds/NPTC National Occupational Standards.

All IoG short courses qualify for IoG CPD points, and attendance on the intermediate and advanced courses also qualifies for BASIS CPD points.

IoG head of professional services Ian Lacy said: "We're confident that the new four-tier system – which is complemented by our new Moodle online service – will provide everyone in the grounds-care sector with a clear, concise and cost-effective path for personal development."

Criminals to do community jobs

Justice secretary Jack Straw has launched a £13.9m package designed to keep criminals with sentences of less than a year out of jail by undertaking community work.

The money, spread over three years, will fund "alternatives to custody" projects. The first starts in Derbyshire this month and will include unpaid work, electronic monitoring, behaviour programmes and resettlement assistance. It is an expanded version of the community payback programme, in which offenders work to rebuild community centres, clear gardens and grow vegetables, and make bird and bat boxes.

RHS offers free resource pack to industry

A resource pack, listing useful sources of advice, information, funding and details of professional organisations and trade bodies for UK horticulture, will be available free to horticultural professionals next month.

RHS Wisley: will offer advice to professionals

RHS Wisley horticultural adviser Maya Albert said as a privilege of RHS membership the RHS Advisory Service provides gardening advice to amateur gardeners throughout the UK. But it also gets a "significant number" of enquiries from professional gardeners, garden designers, landscape architects, local authority environment and leisure officers and allied professions.

In response to this, the RHS has put together a specific resource pack for horticulture professionals. It is currently only available to RHS members but will be provided free to all horticultural professionals from 1 March to 31 May.

■ *Email gardeningadvice@rhs.org.uk to request a pack, quoting your name, address, email address and profession. For a hard copy, send an A5 SAE to: Advisory Department, RHS Wisley, Woking, Surrey, GU23 6QB.*

APPENDIX 2. Calculation of meadow mixes for perennial meadows. Targeted numbers of species are shown by number (top section) and by weight

	mix 1			mix 2			mix 3			mix 4			mix 5			mix 6			mix 7			mix 8			
	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	seed no g
Achillea millefolium		75.00			45.18			9.04			45.18			9.04			5.42			9.04			5.42			1.81		6000.00
Centaurea nigra		75.00			45.18			9.04			45.18			9.04			5.42			9.04			5.42			1.81		400.00
Galium verum		280.00			168.67			33.73		1.67	168.67			33.73			20.24			33.73			20.24			6.75		1900.00
Knautia arvensis		75.00			45.18			9.04			45.18			9.04			5.42			9.04			5.42			1.81		150.00
Leucanthemum vulgare		280.00			168.67			33.73			168.67			33.73			20.24			33.73			20.24			6.75		2000.00
Malva moschata		75.00			45.18			9.04			45.18			9.04			5.42			9.04			5.42			1.81		500.00
Origanum vulgare		280.00			168.67			33.73			168.67			33.73			20.24			33.73			20.24			6.75		11000.00
Primula veris		280.00			168.67			33.73			168.67			33.73			20.24			33.73			20.24			6.75		1000.00
Prunella vulgaris		280.00			168.67			33.73			168.67			33.73			20.24			33.73			20.24			6.75		1000.00
Ranunculus acris		280.00			168.67			33.73			168.67			33.73			20.24			33.73			20.24			6.75		400.00
		2000.00			**1200.00**			**400.00**			**1200.00**			**400.00**			**240.00**			**400.00**			**240.00**			**80.00**		
Bupthalmum salicifolium			0.00			0.00			0.00			140.00			140.00			28.00			280.00			168.00			56.00	1000.00
Dianthus carthusianorum			0.00			0.00			0.00			140.00			140.00			28.00			280.00			168.00			56.00	1000.00
Lychnis coronaria			0.00			0.00			0.00			140.00			140.00			28.00			280.00			168.00			56.00	1800.00
Salvia nemorosa			0.00			0.00			0.00			140.00			140.00			28.00			280.00			168.00			56.00	850.00
Papaver orientale			0.00			0.00			0.00			100.00			100.00			20.00			200.00			120.00			40.00	3500.00
			0.00			**0.00**			**0.00**			**800.00**			**800.00**			**160.00**			**1600.00**			**960.00**			**320.00**	
Festuca rubra var commutata	0.00			400.00			800.00			0.00		400.00			800.00		0.00			400.00			800.00				1000.00
Agrostis capillaris	0.00			400.00			800.00			0.00		400.00			800.00		0.00			400.00			800.00				15000.00
	0.00			**800.00**			**1600.00**			**0.00**		**800.00**			**1600.00**		**0.00**			**800.00**			**1600.00**				

	mix 1			mix 2			mix 3			mix 4			mix 5			mix 6			mix 7			mix 8			mix 9	
	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb	grass	nat forb	exotic forb		sum
Achillea millefolium		0.01			0.01			0.00			0.01			0.00			0.00			0.00			0.00				0.03
Centaurea nigra		0.19			0.11			0.02			0.11			0.02			0.01			0.02			0.01				0.51
Galium verum		0.15			0.09			0.02			0.09			0.02			0.01			0.02			0.01				0.40
Knautia arvensis		0.50			0.30			0.06			0.30			0.06			0.04			0.06			0.04				1.37
Leucanthemum vulgare		0.14			0.08			0.02			0.08			0.02			0.01			0.02			0.01				0.38
Malva moschata		0.15			0.09			0.02			0.09			0.02			0.01			0.02			0.01				0.41
Origanum vulgare		0.03			0.02			0.00			0.02			0.00			0.00			0.00			0.00				0.07
Primula veris		0.28			0.17			0.03			0.17			0.03			0.02			0.03			0.02				0.77
Prunella vulgaris		0.28			0.17			0.03			0.17			0.03			0.02			0.03			0.02				0.77
Ranunculus acris		0.70			0.42			0.08			0.42			0.08			0.05			0.08			0.05				1.91
		2000.00			**1200.00**			**400.00**			**1200.00**			**400.00**			**240.00**			**400.00**			**240.00**			**80.00**		
Bupthalmum salicifolium			0.00			0.00			0.00			0.14			0.14			0.03			0.28			0.17			0.06	0.81
Dianthus carthusianorum			0.00			0.00			0.00			0.14			0.14			0.03			0.28			0.17			0.06	0.81
Lychnis coronaria			0.00			0.00			0.00			0.08			0.08			0.02			0.16			0.09			0.03	0.45
Salvia nemorosa			0.00			0.00			0.00			0.16			0.16			0.03			0.33			0.20			0.07	0.96
Papaver orientale			0.00			0.00			0.00			0.03			0.03			0.01			0.06			0.03			0.01	0.17
			0.00			**0.00**			**0.00**			**800.00**			**800.00**			**160.00**			**1600.00**			**960.00**			**320.00**	
Festuca rubra var commutata	0.00			0.40			0.80			0.00		0.40			0.80		0.00			0.40			0.80				3.60
Agrostis capillaris	0.00			0.03			0.05			0.00		0.03			0.05		0.00			0.03			0.05				0.24
	0.00			**800.00**			**1600.00**			**0.00**		**800.00**			**1600.00**		**0.00**			**800.00**			**1600.00**				

APPENDIX 3: Calculation of Meadow Mixes for Annual Meadows.

ANNUAL MIX PER SQ. METRE. TARGET 500 PLANTS PER SQ. METRE BASED ON ESTIMATED FIELD ESTABLISHMENT OF 20%

ANNUALS	MIX 1 : 100 % NATIVE FLOWERS			MIX 2 60:40 NATIVE FORBS - GRASSES			MIX 3 20:80 NATIVE FORBS:GRASSES			MIX 4 NATIVE FORBS:EXOTICFORBS 60:40			MIX 5 : NATVE FORBS: EXOTIC FORBS : GRASSES 20:40:40			MIX 6 NATIVE FORBS : EXOTIC FORBS : GRASSES 12:8:80			MIX 7 NATIVE FORBS : EXOTIC FORBS 20:80			MIX 8 NATIVE FORBS : EXOTIC FORBS : GRASSES 12:48:40			MIX 9 NATIVE FORBS : GRASSES : EXOTICS 4 : 80 : 16			seeds p/g
	G	N	E	G	N	E	G	N	E	G	N	E	G	N	E	G	N	E	G	N	E	G	N	E	G	N	E	
corn cockle		100.00			60.00			15.00			45.00			15.00			10.00			15.00			10.00			4.00		**60.00**
Anthemis arvensis		100.00			60.00			15.00			45.00			15.00			10.00			15.00			10.00			4.00		**4000.00**
Centaurea cyanus		100.00			50.00			15.00			45.00			15.00			10.00			15.00			10.00			4.00		**200.00**
Chrysanthemum segetum		25.00			10.00			5.00			15.00			5.00			5.00			5.00			5.00			3.00		**600.00**
Papaver rhoeas Shirley series		100.00			60.00			30.00			90.00			30.00			15.00			30.00			15.00			4.00		**5000.00**
Bupleurum rotundifolium		75.00			60.00			20.00			60.00			20.00			10.00			20.00			10.00			3.00		**375.00**
TOTAL NATIVE FORBS		**500.00**			**300.00**			**100.00**			**300.00**			**100.00**			**60.00**			**100.00**			**60.00**			**22.00**		
Coreopsis tinctoria late			0.00									35.00			35.00			6.00			70.00			40.00			12.00	**1000.00**
Escholzia californica mid season												35.00			35.00			6.00			65.00			40.00			14.00	**700.00**
Ammi majus mid season												35.00			35.00			7.00			65.00			40.00			14.00	**1300.00**
Linum grandiflorum mid season												35.00			35.00			7.00			65.00			40.00			14.00	**300.00**
rudbeckia hirta late												30.00			30.00			7.00			70.00			40.00			14.00	**2000.00**
Cosmos bipinnata late												30.00			30.00			7.00			65.00			40.00			12.00	**200.00**
TOTAL EXOTIC FORBS			**0.00**			###			**0.00**			**200.00**			**200.00**			**40.00**			**400.00**			**240.00**			**80.00**	
			0.00																									
GRASSES				200.00			#####						200.00																
TOTAL GRASSES	**0.00**			**200.00**			**#####**			**0.00**			**200.00**			**400.00**			0.00			**200.00**			**400.00**			4000.00

APPENDIX 4: Queens Park Publicity for the Project

City of London Pamphlet

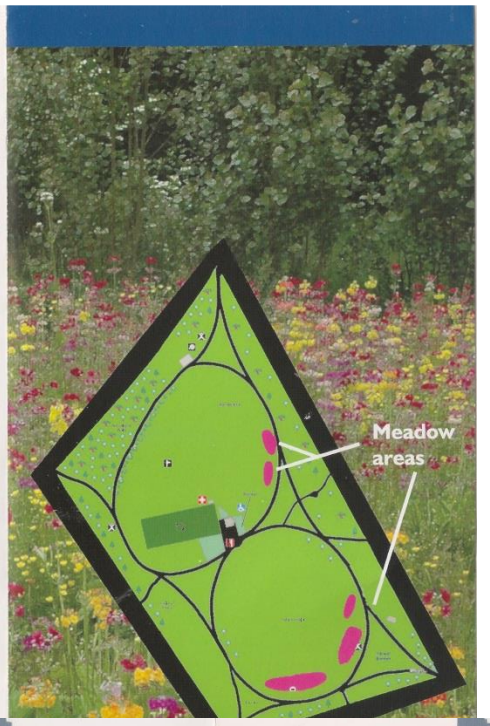
Wildflowers in Queen's Park

The benefits of wildflower meadows have been well documented. These are ecological, economic and social. Plant communities inspired by nature are tailored to site conditions and can be a compliment or alternative to bedding and mown grass.

Over the past few years the City of London has made the promotion of biodiversity and an understanding of the natural environment an integral part of the management of their open spaces.

As part of this ongoing process the City of London, with the support of the highly regarded Department of Landscape of Sheffield University, and the RHS, will wor
perennial meadov

These will replace
the five existing a
vegetation offerir
a much longer flo
Autumn) and mu
insects, and there



QUEEN'S PARK

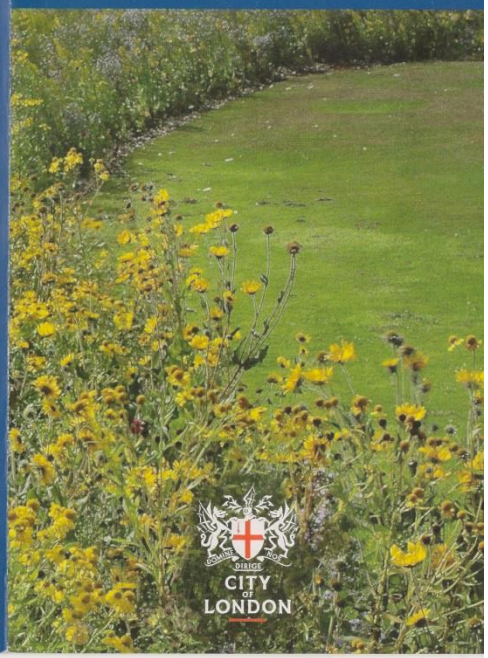
Queen's Park is one of a number of open spaces, parks and gardens in and around London, owned and managed by the City of London as part of its commitment to sustaining a world class city. Each open space is a unique resource, managed for the use and enjoyment of the public and for the conservation of wildlife and historic landscape. A full list of sites and visitor information can be found on our website at: www.cityoflondon.gov.uk/openspaces or by contacting the Open Spaces Directorate on 020 7606 3030.

If you have any views on the Queen's Park Meadows project please contact:
The Manager
Golders Hill and Queen's Park
Kingswood Avenue, Kilburn
London NW6 6SG
Tel: 020 8969 5661 / 020 8455 5183
Fax: 020 8969 8561 / 020 8201 9212
Email: queens.park@cityoflondon.gov.uk

PRINTED ON PAPER FROM SUSTAINABLY MANAGED FORESTS

If you would like to receive this publication in your language or in an alternative format such as large print, braille, audio tape or CD please contact the manager at the above address.

QUEEN'S PARK WILDFLOWER MEADOWS PROJECT



APPENDIX 5: Project Leaflet

Produced at the beginning of the project to encourage local authorities to participate

Appendix 5. Information leaflet about the project for local authorities

APPENDIX 6: Questionnaire, Ruskin Park, London

Undertaken 24-30 July 2010

Questionnaire

Please answer the following questions as accurately as possible by ticking the appropriate boxes (one per question unless otherwise stated). Please answer all the questions.

A1) How often do you visit this park?

☐ Daily or more

☐ 4-6 times per week

☐ 1-3 times per week

☐ A few times a month

☐ Once a month or less

☐ Never

A2) When do you come to the park?

☐ All year round

☐ In summer only

A3) Which other open spaces do you visit most regularly?

☐ Other urban parks

☐ Countryside around the city/National parks

☐ Seaside

☐ Cemeteries

☐ Allotment

A4) Why do you come to the park. *Please write down the four main reasons you come to the park placing a number in the box where 1 = most important reason and 4 = least important reason*

☐ To sit/lie down, sunbathe

☐ To walk the dog

☐ To walk for pleasure

☐ To walk for transport

☐ To cycle

☐ To skateboard

☐ To jog/run

☐ For other sports

☐ To supervise/play with children

☐ To observe wildlife/greenery

☐ To meet/socialise with people

☐ To picnic

☐ Other organised activities

B1) What is the overall impression of the meadow in the park

☐ Positive

☐ A little positive

☐ Negative

☐ A little negative

☐ Don't know

B2) How do you feel about the overall shape and layout of the meadow?

☐ Positive

☐ Negative

☐ Don't know

B3) Which areas of the meadow planting do you find most and least appealing? Insert the meadow number in the boxes below

Most appealing ☐ Least appealing ☐

B4) For the meadow you like <u>most</u> please indicate how you feel about each of the following statements by putting a cross within the most appropriate box

(a) I like the flower colours/combination of colours

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(b) I like the balance between colourful flowers

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(c) I like the overall amount of colour

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(d) The meadow looks neat and well tended

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(e) I like the butterflies and other insects I saw in the meadow

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(f) The meadow looks fresh

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(g) The meadow looks full

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

B5) For the meadow you like <u>least</u> please indicate how you feel about each of the following statements by putting a cross within the most appropriate box

(a) I like the flower colours/combination of colours

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(b) I like the balance between colourful flowers

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(c) I like the overall amount of colour

strongly	disagree	no opinion	agree	strongly

disagree agree

☐ ☐ ☐ ☐ ☐

(d) The meadow looks neat and well tended

strongly disagree no opinion agree strongly
disagree agree

☐ ☐ ☐ ☐ ☐

(e) I like the butterflies and other insects I saw in the meadow

strongly disagree no opinion agree strongly
disagree agree

☐ ☐ ☐ ☐ ☐

(f) The meadow looks fresh

strongly disagree no opinion agree strongly
disagree agree

☐ ☐ ☐ ☐ ☐

(g) The meadow looks overgrown

strongly disagree no opinion agree strongly
disagree agree

☐ ☐ ☐ ☐ ☐

(h) The dead plants spoil the flowers

strongly disagree no opinion agree strongly

disagree				agree
☐	☐	☐	☐	☐

(i) The meadow looks dead

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(j) There are lots of bare patches/gaps in the meadow

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

B6) Do you think meadow-type planting is appropriate in the park?

☐ Very appropriate

☐ Quite appropriate

☐ Appropriate

☐ Not appropriate at all

☐ Don't know

B7) Do you like this meadow-type vegetation more than other types of planting in the park?

☐ Yes

☐ No

☐ Don't know

B8) What was your familiarity with meadow-type planting before seeing this planting. *Tick any relevant boxes.*

☐ I have never seen it before

☐ I have seen pictures of meadows in books

☐ I have seen pictures of meadows in newspapers/ magazines

☐ I have seen meadows in other parks

☐ I have seen meadows on TV

☐ I have seen meadows in real life

B9) Are you a member of any of the following: *Tick any relevant boxes.*

☐ nature-wildlife conservation charity/organisation

☐ horticultural or allotment society

☐ park "friends" group

B10 Any comments you might like to make about the meadows?

……
……..

……
……..

……
……..

C. Information about you

C1) Postcode

C2) Gender

☐ M

☐ F

C3) Age

☐ 18 – 30

☐ 31 – 45

☐ 46 – 55

☐ 56 – 65

☐ Over 65

C4) Ethnicity

☐ Asian

☐ Asian British

☐ White British

☐ White

☐ Black

☐ Black British

☐ Mixed

☐ Other

C5) What is your occupation? *Please write your answer in the space provided.*

……..

C6) What is your educational background*? Please tick the box that describes your highest level of education.*

☐ School up to age 16

☐ School up to age 18

☐ Qualifications or training eg armed forces, nursing GNVFQ

☐ Undergraduate degree

☐ Postgraduate degree

APPENDIX 7: Attitude Section of Meersbrook Park questionnaire

Including questions about grasses which were absent from the Ruskin Park, London survey

B4) For the meadow you like <u>most</u> please indicate how you feel about each of the following statements by putting a cross within the most appropriate box

(a) I like the flower colours/combination of colours

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(b) I like the balance between colourful flowers and grasses?

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(c) I like the grasses moving in the wind

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(d) I like the overall amount of colour

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(e) I like the green of the grasses

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(f) The meadow looks neat and tidy

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(g) I like the butterflies and other insects I saw in the meadow

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(h) The meadow looks fresh

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(i) The meadow looks full

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

B5) For the meadow you like <u>least</u> please indicate how you feel about each of the following statements by putting a cross within the most appropriate box

(a) I like the flower colours/combination of colours

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(b) I like the balance between colourful flowers and grasses?

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(c) I like the grasses moving in the wind

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(d) I like the overall amount of colour

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(e) I like the green of the grasses

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(f) The meadow looks neat and tidy

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(g) I like the butterflies and other insects I saw in the meadow

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(h) The meadow looks fresh

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(i) The meadow looks overgrown

strongly disagree	disagree	no opinion	agree	strongly agree

☐ ☐ ☐ ☐ ☐

(j) The dead plants spoil the flowers

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(k) The meadow looks dead

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

(l) There are lots of bare patches/gaps in the meadow

strongly disagree	disagree	no opinion	agree	strongly agree
☐	☐	☐	☐	☐

APPENDIX 8: Photographs of the meadows – Ruskin Park, London

Photographs taken on 17th July 2010

Ruskin park mix 1

Ruskin Park mix 2

Appendix 8. The research plots on day of questionnaire. Ruskin Park, London

Ruskin park mix 3 24/7/2010

Ruskin park mix 4 24/7/2010

Appendix 8. The research plots on day of questionnaire. Ruskin Park, London

Ruskin Park mix 6 24/7/2010

Ruskin park mix 7 24/7/2010

Appendix 8. The research plots on day of questionnaire. Ruskin Park, London

Ruskin Park mix 8. 24/7/2010

Ruskin park mix 9 24/7/2010

Appendix 8. The research plots on day of questionnaire. Ruskin Park, London

APPENDIX 9: Photographs of the meadows – Meersbrook Park, Sheffield

Photographs taken 4th August 2010

Meersbrook park plot number 1. August 4th 2010

Meersbrook park plot number 2. August 4th 2010

Meersbrook park plot number 3. August 4th 2010.

Meersbrook park plot number 4. August 4th 2010

Meersbrook park plot number 5. August 4th 2010

Meersbrook park plot number 6. August 4th 2010

Appendix 9. The research plots on day of questionnaire. Meersbrook Park, Sheffield

Meersbook Park plot number 7 August 4th 2010

Meersbrook Park plot number 8 August 4th 2010

Appendix 9. The research plots on day of questionnaire. Meersbrook Park, Sheffield

Meersbrook Park Plot number 9. August 4th 2010

Appendix 9. The research plots on day of questionnaire. Meersbrook Park, Sheffield

Appendix 10: Post hoc (Tukey HSD) Tests, Sheffield respondents

Appendix 10 Table 1: SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE AGE GROUPS RESPONSE TO "IN MY PREFERRED PLOT I LIKE THE BUTTERFLIES AND OTHER INSECTS I SAW" (KW P= 0.012)

Multiple Comparisons						
[Most] I like the butterflies and other insects I saw in the meadow [The mean difference is significant at the 0.05 level]						
Tukey HSD						
		Mean Difference (I-			95% Confidence Interval	
(I) age	(J) age	J)	Std. Error	Sig.	Lower Bound	Upper Bound
Under 18	18-30	-.303	.328	.940	-1.25	.64
	31 - 45	-.854	.325	.097	-1.79	.08
	46 - 55	-.740	.330	.223	-1.69	.21
	56-65	-.667	.366	.454	-1.72	.39
	OVER 65	-.509	.362	.725	-1.55	.54
18-30	**Under 18**	.303	.328	.940	-.64	1.25
	31 - 45	-.551*	.187	**.042**	-1.09	-.01
	46 - 55	-.437	.194	.222	-1.00	.12
	56-65	-.364	.251	.696	-1.09	.36
	OVER 65	-.206	.246	.960	-.91	.50
31 - 45	Under 18	.854	.325	.097	-.08	1.79
	18-30	.551*	.187	**.042**	.01	1.09
	46 - 55	.114	.190	.991	-.43	.66
	56-65	.188	.248	.974	-.53	.90
	OVER 65	.345	.243	.713	-.35	1.05
46 - 55	Uner 18	.740	.330	.223	-.21	1.69
	18-30	.437	.194	.222	-.12	1.00
	31 - 45	-.114	.190	.991	-.66	.43
	56-65	.073	.253	1.000	-.66	.80
	OVER 65	.231	.249	.938	-.49	.95
56-65	Under 18	.667	.366	.454	-.39	1.72
	18-30	.364	.251	.696	-.36	1.09
	31 - 45	-.188	.248	.974	-.90	.53
	46 - 55	-.073	.253	1.000	-.80	.66
	6	.158	.295	.995	-.69	1.01
0ver 65	Uner 18	.509	.362	.725	-.54	1.55
	18-30	.206	.246	.960	-.50	.91
	31 - 45	-.345	.243	.713	-1.05	.35
	46 - 55	-.231	.249	.938	-.95	.49
	56-65	-.158	.295	.995	-1.01	.69
*. The mean difference is significant at the 0.05 level.						

Appendix 10 Table 2: SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE AGE GROUPS RESPONSE TO "IN MY LEAST PREFERRED PLOT I LIKE THE BALANCE BETWEEN THE COLOURFUL FLOWERS AND GRASSES" (KW P=0.041)

[Least] I like the balance between the colourful flowers and grasses						
					95% Confidence Interval	
(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Under 18	18-30	.270	.351	.972	-.74	1.28
	31 - 45	-.338	.348	.927	-1.34	.67
	46 - 55	.085	.355	1.000	-.94	1.11
	56-65	-.333	.392	.958	-1.46	.80
	OVER 65	-.520	.389	.763	-1.64	.60
18-30	**Under 18**	-.270	.351	.972	-1.28	.74
	31 - 45	-.608*	.200	.031	-1.18	-.03
	46 - 55	-.185	.211	.952	-.79	.42
	56-65	-.604	.269	.223	-1.38	.17
	OVER 65	-.791*	.264	.036	-1.55	-.03
31 - 45	Under 18	.338	.348	.927	-.67	1.34
	18-30	.608*	.200	**.031**	.03	1.18
	46 - 55	.423	.206	.317	-.17	1.02
	56-65	.005	.265	1.000	-.76	.77
	OVER 65	-.183	.260	.981	-.93	.57
46 - 55	Uner 18	-.085	.355	1.000	-1.11	.94
	18-30	.185	.211	.952	-.42	.79
	31 - 45	-.423	.206	.317	-1.02	.17
	56-65	-.419	.274	.645	-1.21	.37
	OVER 65	-.606	.269	.219	-1.38	.17
56-65	Under 18	.333	.392	.958	-.80	1.46
	18-30	.604	.269	.223	-.17	1.38
	31 - 45	-.005	.265	1.000	-.77	.76
	46 - 55	.419	.274	.645	-.37	1.21
	6	-.187	.316	.991	-1.10	.72
0ver 65	Uner 18	.520	.389	.763	-.60	1.64
	18-30	.791*	.264	.036	.03	1.55
	31 - 45	.183	.260	.981	-.57	.93
	46 - 55	.606	.269	.219	-.17	1.38
	5	.187	.316	.991	-.72	1.10

Appendix Table 3: SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE AGE

GROUPS RESPONSE TO “THE DEAD PLANTS SPOIL THE FLOWERS IN MY LEAST PREFERRED PLOT” (KW P=0.007)

Multiple Comparisons

[Least] The dead plants spoil the flowers

Tukey HSD

(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Under 18	18-30	.826	.350	.178	-.18	1.84
	31 - 45	.667	.348	.396	-.34	1.67
	46 - 55	.742	.353	.293	-.28	1.76
	56-65	1.444*	.391	.004	.32	2.57
	OVER 65	.982	.388	.120	-.13	2.10
18-30	**Under 18**	-.826	.350	.178	-1.84	.18
	31 - 45	-.159	.200	.968	-.74	.42
	46 - 55	-.084	.209	.999	-.69	.52
	56-65	.619	.268	.196	-.15	1.39
	OVER 65	.157	.263	.991	-.60	.91
31 - 45	Under 18	-.667	.348	.396	-1.67	.34
	18-30	.159	.200	.968	-.42	.74
	46 - 55	.075	.205	.999	-.52	.67
	56-65	.778*	.265	**.043**	.01	1.54
	OVER 65	.316	.260	.829	-.43	1.06
46 - 55	Uner 18	-.742	.353	.293	-1.76	.28
	18-30	.084	.209	.999	-.52	.69
	31 - 45	-.075	.205	.999	-.67	.52
	56-65	.703	.272	.107	-.08	1.49
	OVER 65	.241	.267	.946	-.53	1.01
56-65	Under 18	-1.444*	.391	.004	-2.57	-.32
	18-30	-.619	.268	.196	-1.39	.15
	31 - 45	-.778*	.265	**.043**	-1.54	-.01
	46 - 55	-.703	.272	.107	-1.49	.08
	6	-.462	.315	.686	-1.37	.45
0ver 65	Uner 18	-.982	.388	.120	-2.10	.13
	18-30	-.157	.263	.991	-.91	.60
	31 - 45	-.316	.260	.829	-1.06	.43
	46 - 55	-.241	.267	.946	-1.01	.53
	56-65	.462	.315	.686	-.45	1.37

*. The mean difference is significant at the 0.05 level.

Appendix 10 Table 4: SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE AGE

GROUPS RESPONSE TO "I LIKE THE FLOWERS, COMBINATION OF FLOWERS IN MY LEAST PREFERRED PLOT " (KW P=0.035)

Multiple Comparisons

[Least] I like the flower colours/combination of colours

Tukey HSD

(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Under 18	18-30	.114	.384	1.000	-.99	1.22
	31 - 45	-.542	.381	.715	-1.64	.56
	46 - 55	-.231	.388	.991	-1.35	.89
	56-65	-.333	.429	.971	-1.57	.90
	OVER 65	-.789	.425	.431	-2.01	.43
18-30	**Under 18**	-.114	.384	1.000	-1.22	.99
	31 - 45	-.655*	.219	**.037**	-1.29	-.02
	46 - 55	-.344	.231	.670	-1.01	.32
	56-65	-.447	.294	.651	-1.29	.40
	OVER 65	-.903*	.288	**.024**	-1.73	-.07
31 - 45	Under 18	.542	.381	.715	-.56	1.64
	18-30	.655*	.219	**.037**	.02	1.29
	46 - 55	.311	.226	.743	-.34	.96
	56-65	.208	.290	.980	-.63	1.04
	OVER 65	-.248	.285	.953	-1.07	.57
46 - 55	Uner 18	.231	.388	.991	-.89	1.35
	18-30	.344	.231	.670	-.32	1.01
	31 - 45	-.311	.226	.743	-.96	.34
	56-65	-.103	.299	.999	-.96	.76
	OVER 65	-.559	.294	.404	-1.41	.29
56-65	Under 18	.333	.429	.971	-.90	1.57
	18-30	.447	.294	.651	-.40	1.29
	31 - 45	-.208	.290	.980	-1.04	.63
	46 - 55	.103	.299	.999	-.76	.96
	6	-.456	.345	.773	-1.45	.54
0ver 65	Uner 18	.789	.425	.431	-.43	2.01
	18-30	.903*	.288	.024	.07	1.73
	31 - 45	.248	.285	.953	-.57	1.07
	46 - 55	.559	.294	.404	-.29	1.41
	56-65	.456	.345	.773	-.54	1.45

*. The mean difference is significant at the 0.05 level.

Appendix 10 Table 5: SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE AGE GROUPS RESPONSE TO "THE MEADOW IN

MY PREFERRED PLOT LOOKS FRESH" (KW P.0.024).GAMES HOWELL POST HOC TESTS ARE ASLSO REVEALED HERE WHICH SUPPORT THE TUKEY RESULTS

Multiple Comparisons

Dependent Variable:[Most] The meadow looks fresh

	(I) age	(J) age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	**Under 18**	18-30	-.292	.344	.958	-1.28	.70
		31 - 45	-.243	.341	.980	-1.23	.74
		46 - 55	-.027	.345	1.000	-1.02	.97
		56-65	.333	.383	.953	-.77	1.44
		OVER 65	.567	.380	.668	-.53	1.66
	18-30	**Under 18**	.292	.344	.958	-.70	1.28
		31 - 45	.049	.197	1.000	-.52	.62
		46 - 55	.265	.205	.788	-.33	.86
		56-65	.625	.263	.171	-.13	1.38
		OVER 65	.859*	.258	**.014**	.11	1.60
	31 - 45	Under 18	.243	.341	.980	-.74	1.23
		18-30	-.049	.197	1.000	-.62	.52
		46 - 55	.216	.199	.888	-.36	.79
		56-65	.576	.259	.233	-.17	1.32
		OVER 65	.810*	.254	**.021**	.08	1.54
	46 - 55	Uner 18	.027	.345	1.000	-.97	1.02
		18-30	-.265	.205	.788	-.86	.33
		31 - 45	-.216	.199	.888	-.79	.36
		56-65	.360	.265	.751	-.40	1.12
		OVER 65	.594	.260	.207	-.16	1.34
	56-65	Under 18	-.333	.383	.953	-1.44	.77
		18-30	-.625	.263	.171	-1.38	.13
		31 - 45	-.576	.259	.233	-1.32	.17
		46 - 55	-.360	.265	.751	-1.12	.40
		6	.234	.309	.974	-.66	1.12
	OVER 65	Uner 18	-.567	.380	.668	-1.66	.53
		18-30	-.859*	.258	.014	-1.60	-.11
		31 - 45	-.810*	.254	.021	-1.54	-.08
		46 - 55	-.594	.260	.207	-1.34	.16
		56-65	-.234	.309	.974	-1.12	.66
Games-Howell	**Under 18**	18-30	-.292	.341	.949	-1.48	.90
		31 - 45	-.243	.347	.978	-1.44	.95
		46 - 55	-.027	.362	1.000	-1.24	1.18
		56-65	.333	.437	.971	-1.04	1.71
		OVER 65	.567	.401	.719	-.72	1.85
	18-30	**Under 18**	.292	.341	.949	-.90	1.48

		31 - 45	.049	.164	1.000	-.43	.53
		46 - 55	.265	.193	.745	-.30	.83
		56-65	.625	.313	.375	-.35	1.60
		OVER 65	.859*	.260	**.030**	.06	1.66
	31 - 45	Under 18	.243	.347	.978	-.95	1.44
		18-30	-.049	.164	1.000	-.53	.43
		46 - 55	.216	.203	.895	-.38	.81
		56-65	.576	.319	.482	-.41	1.57
		OVER 65	.810	.267	.053	-.01	1.63
	46 - 55	Uner 18	.027	.362	1.000	-1.18	1.24
		18-30	-.265	.193	.745	-.83	.30
		31 - 45	-.216	.203	.895	-.81	.38
		56-65	.360	.335	.887	-.66	1.39
		OVER 65	.594	.286	.322	-.27	1.46
	56-65	Under 18	-.333	.437	.971	-1.71	1.04
		18-30	-.625	.313	.375	-1.60	.35
		31 - 45	-.576	.319	.482	-1.57	.41
		46 - 55	-.360	.335	.887	-1.39	.66
		6	.234	.377	.989	-.91	1.37
	0ver 65	Uner 18	-.567	.401	.719	-1.85	.72
		18-30	-.859*	.260	.030	-1.66	-.06
		31 - 45	-.810	.267	.053	-1.63	.01
		46 - 55	-.594	.286	.322	-1.46	.27
		56-65	-.234	.377	.989	-1.37	.91
*. The mean difference is significant at the 0.05 level.							

Appendix 10 Table 6: RESULTS (EXAMPLE) OF KRUSKALL WALLIS NON PARAMETRIC TEST. PRIMARY STATISTICAL EXPLORATION BETWEEN GENDER AND ATTITUDE TO MOST PREFERRED PLOTS. MEERSBROOK PARK MANN WHITNEY

Test Statistics[a]									
	[Most] I like the flower colours/combination of colours	[Most] I like the balance between the colourful flowers and grasses	[Most] I like the grasses moving in the wind	[Most]I like the overall amount of colour	[Most] I like the green of the grasses	[Most] The meadow looks neat and tidy	[Most] I like the butterflies and other insects I saw in the meadow	[Most] The meadow looks fresh	[Most] The meadow looks full
Mann-Whitney U	3973.000	3638.500	3109.000	3743.000	3139.000	3975.000	3762.500	3616.500	4133.500
Wilcoxon W	7054.000	6719.500	6190.000	9521.000	6220.000	7056.000	6843.500	6619.500	7214.500
Z	-.633	-1.674	-3.217	-1.336	-3.184	-.687	-1.311	-1.686	-.236
Asymp. Sig. (2-tailed)	.527	.094	.001	.182	.001	.492	.190	.092	.814
a. Grouping Variable: gender									

Appendix 10 Table 7: SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE FAMILIARITY GROUPS FRO THEIR PREFERRED PLOT. REVEALNG A DIFFERENCE BETWEEN GROUP 1 (NEVER SEEN) AND GROUP 4 (SEEN IN REAL LIFE)

Multiple Comparisons							
Dependent Variable:Which area of the meadow do you find most appealing?							
	(I) What was your familiarity with meadow-type planting before seeing this planting	(J) What was your familiarity with meadow-type planting before seeing this planting	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Never seen	Seen in media	-2.040	1.193	.321	-5.13	1.05
		media and real life	-.991	.779	.581	-3.01	1.03
		Seen in real life	-1.965*	.682	.023	-3.73	-.20
	Seen before in media	Never seen	2.040	1.193	.321	-1.05	5.13
		Seen in media /real life	1.049	1.130	.790	-1.88	3.98
		Real life	.075	1.065	1.000	-2.69	2.84
	Seen in media and real life	Never seen	.991	.779	.581	-1.03	3.01
		In media	-1.049	1.130	.790	-3.98	1.88
		Rael life	-.974	.564	.312	-2.44	.49
	Seen in real life	Never seen	1.965*	.682	.023	.20	3.73
		Media	-.075	1.065	1.000	-2.84	2.69
		Media and real life	.974	.564	.312	-.49	2.44
Games-Howell	Never seen	Seen in media	-2.040	1.292	.429	-5.95	1.87
		media and real life	-.991	.635	.409	-2.67	.69
		Seen in real life	-1.965*	.571	.006	-3.48	-.45
	Seen before in media	Never seen	2.040	1.292	.429	-1.87	5.95
		Seen in media /real life	1.049	1.274	.842	-2.84	4.94
		Real life	.075	1.243	1.000	-3.79	3.94
	Seen in media and real life	Never seen	.991	.635	.409	-.69	2.67
		In media	-1.049	1.274	.842	-4.94	2.84
		Rael life	-.974	.528	.260	-2.36	.41
	Seen in real life	Never seen	1.965*	.571	.006	.45	3.48
		Media	-.075	1.243	1.000	-3.94	3.79
		Media and real life	.974	.528	.260	-.41	2.36
*. The mean difference is significant at the 0.05 level.							

Appendix 10 table 7b SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE ATTITUDE OF THE DIFFERENT OCCUPATION GROUPS AND THEIR ATTITUDES TO BUTTERFLIES IN THEIR PREFERRED PLOT

Multiple Comparisons

Dependent Variable:[Most] I like the butterflies and other insects I saw in the meadow

	(I) occupation (coded)	(J) occupation (coded)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	unskilled	semi	-.167	.191	.820	-.66	.33
		skilled	.000	.223	1.000	-.58	.58
		notinemp	.404	.197	.174	-.11	.92
	semi	unskilled	.167	.191	.820	-.33	.66
		skilled	.167	.210	.857	-.38	.71
		Not in emp	.571*	.182	**.011**	.10	1.04
	skilled	unskilled	.000	.223	1.000	-.58	.58
		semi	-.167	.210	.857	-.71	.38
		Not in emp	.404	.215	.241	-.15	.96
	Not in emp	unskilled	-.404	.197	.174	-.92	.11
		Semi skilled	-.571*	.182	**.011**	-1.04	-.10
		skilled	-.404	.215	.241	-.96	.15
Games-Howell	unskilled	semi	-.167	.191	.820	-.67	.34
		skilled	.000	.222	1.000	-.58	.58
		notinemp	.404	.225	.283	-.19	.99
	semi	unskilled	.167	.191	.820	-.34	.67
		skilled	.167	.178	.786	-.31	.64
		Not in emp	.571*	.183	.013	.09	1.05
	skilled	unskilled	.000	.222	1.000	-.58	.58
		semi	-.167	.178	.786	-.64	.31
		Not in emp	.404	.214	.243	-.16	.97
	Not in emp	unskilled	-.404	.225	.283	-.99	.19
		Semi skilled	-.571*	.183	**.013**	-1.05	-.09
		skilled	-.404	.214	.243	-.97	.16

*. The mean difference is significant at the 0.05 level.

Appendix 10 table 7C SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE ATTITUDE OF THE DIFFERENT OCCUPATION GROUPS AND THEIR ATTITUDES TO FRESHNESS

Multiple Comparisons							
Dependent Variable:[Most] The meadow looks fresh							
						95% Confidence Interval	
	(I) occupation (coded)	(J) occupation (coded)	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Tukey HSD	unskilled	semi	-.056	.197	.992	-.57	.46
		skilled	.143	.232	.927	-.46	.75
		notinemp	.468	.203	.101	-.06	.99
	semi	unskilled	.056	.197	.992	-.46	.57
		skilled	.198	.218	.800	-.37	.76
		Not in emp	.524*	.187	**.029**	.04	1.01
	skilled	unskilled	-.143	.232	.927	-.75	.46
		semi	-.198	.218	.800	-.76	.37
		Not in emp	.325	.224	.468	-.26	.91
	Not in emp	unskilled	-.468	.203	.101	-.99	.06
		Semi skilled	-.524*	.187	**.029**	-1.01	-.04
		skilled	-.325	.224	.468	-.91	.26
Games-Howell	unskilled	semi	-.056	.193	.992	-.56	.45
		skilled	.143	.249	.939	-.52	.80
		notinemp	.468	.203	.106	-.07	1.00
	semi	unskilled	.056	.193	.992	-.45	.56
		skilled	.198	.231	.825	-.42	.81
		Not in emp	.524*	.181	.024	.05	1.00
	skilled	unskilled	-.143	.249	.939	-.80	.52
		semi	-.198	.231	.825	-.81	.42
		Not in emp	.325	.239	.531	-.31	.96
	Not in emp	unskilled	-.468	.203	.106	-1.00	.07
		Semi skilled	-.524*	.181	**.024**	-1.00	-.05
		skilled	-.325	.239	.531	-.96	.31
*. The mean difference is significant at the 0.05 level.							

Appendix 10 table 7D SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE ATTITUDE OF THE DIFFERENT OCCUPATION GROUPS AND THEIR ATTITUDES TO DEADNESS FOR THEIR LEAST PREFERRED PLOT.

Multiple Comparisons

Dependent Variable:[Least] The meadow looks dead

	(I) occupation (coded)	(J) occupation (coded)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Tukey HSD	unskilled	semi	-.301	.206	.463	-.83	.23
		skilled	-.053	.241	.996	-.68	.57
		notinemp	-.825*	.213	**.001**	-1.38	-.27
	semi	unskilled	.301	.206	.463	-.23	.83
		skilled	.248	.226	.691	-.34	.83
		Not in emp	-.524*	.195	.040	-1.03	-.02
	skilled	unskilled	.053	.241	.996	-.57	.68
		semi	-.248	.226	.691	-.83	.34
		Not in emp	-.772*	.232	**.006**	-1.37	-.17
	Not in emp	unskilled	.825*	.213	.001	.27	1.38
		Semi skilled	.524*	.195	**.040**	.02	1.03
		skilled	.772*	.232	.006	.17	1.37
Games-Howell	unskilled	semi	-.301	.199	.437	-.82	.22
		skilled	-.053	.227	.995	-.65	.55
		notinemp	-.825*	.222	.002	-1.41	-.24
	semi	unskilled	.301	.199	.437	-.22	.82
		skilled	.248	.210	.642	-.31	.80
		Not in emp	-.524	.204	.056	-1.06	.01
	skilled	unskilled	.053	.227	.995	-.55	.65
		semi	-.248	.210	.642	-.80	.31
		Not in emp	-.772*	.231	.007	-1.38	-.16
	Not in emp	unskilled	.825*	.222	.002	.24	1.41
		Semi skilled	.524	.204	.056	-.01	1.06
		skilled	.772*	.231	**.007**	.16	1.38

*. The mean difference is significant at the 0.05 level.

Appendix 10 table 7E SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE ATTITUDE OF THE DIFFERENT OCCUPATION GROUPS AND THEIR AGREEMENT WITH THE STATEMENT "I LIKE THE OVERALL AMOUNT COLOUR IN MY LEAST PREFERRED PLOT)

Multiple Comparisons

Dependent Variable:[Least] I like the overall amount of colour

	(I) occupation (coded)	(J) occupation (coded)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Tukey HSD	unskilled	semi	.538	.208	.051	.00	1.08
		skilled	.435	.244	.284	-.20	1.07
		notinemp	.113	.215	.953	-.45	.67
	semi	unskilled	-.538	.208	.051	-1.08	.00
		skilled	-.103	.228	.969	-.70	.49
		Not in emp	-.426	.197	.140	-.94	.09
	skilled	unskilled	-.435	.244	.284	-1.07	.20
		semi	.103	.228	.969	-.49	.70
		Not in emp	-.322	.235	.518	-.93	.29
	Not in emp	unskilled	-.113	.215	.953	-.67	.45
		Semi skilled	.426	.197	.140	-.09	.94
		skilled	.322	.235	.518	-.29	.93
Games-Howell	unskilled	semi	.538*	.204	.048	.00	1.07
		skilled	.435	.239	.274	-.20	1.07
		notinemp	.113	.229	.960	-.49	.71
	semi	unskilled	-.538*	.204	.048	-1.07	.00
		skilled	-.103	.213	.962	-.67	.46
		Not in emp	-.426	.201	.156	-.95	.10
	skilled	unskilled	-.435	.239	.274	-1.07	.20
		semi	.103	.213	.962	-.46	.67
		Not in emp	-.322	.237	.529	-.95	.30
	Not in emp	unskilled	-.113	.229	.960	-.71	.49
		Semi skilled	.426	.201	.156	-.10	.95
		skilled	.322	.237	.529	-.30	.95

*. The mean difference is significant at the 0.05 level.

Appendix 10 table 7f SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE ATTITUDE OF THE DIFFERENT OCCUPATION GROUPS AND THEIR AGREEMENT WITH THE STATEMENT "THE MEADOW LOOKS FULL" in my LEAST PREFERRED PLOT

Multiple Comparisons							
Dependent Variable:[Least] The meadow looks full							
						95% Confidence Interval	
	(I) occupation (coded)	(J) occupation (coded)	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Tukey HSD	unskilled	semi	-.564*	.215	.046	-1.12	-.01
		skilled	-.586	.252	.095	-1.24	.07
		notinemp	-.413	.223	.254	-.99	.17
	semi	unskilled	.564*	.215	**.046**	.01	1.12
		skilled	-.023	.235	1.000	-.63	.59
		Not in emp	.151	.205	.883	-.38	.68
	skilled	unskilled	.586	.252	.095	-.07	1.24
		semi	.023	.235	1.000	-.59	.63
		Not in emp	.173	.243	.892	-.46	.80
	Not in emp	unskilled	.413	.223	.254	-.17	.99
		Semi skilled	-.151	.205	.883	-.68	.38
		skilled	-.173	.243	.892	-.80	.46
Games-Howell	unskilled	semi	-.564*	.214	.049	-1.12	.00
		skilled	-.586	.263	.127	-1.28	.11
		notinemp	-.413	.226	.268	-1.01	.18
	semi	unskilled	.564*	.214	.049	.00	1.12
		skilled	-.023	.241	1.000	-.66	.62
		Not in emp	.151	.200	.876	-.37	.67
	skilled	unskilled	.586	.263	.127	-.11	1.28
		semi	.023	.241	1.000	-.62	.66
		Not in emp	.173	.252	.901	-.49	.84
	Not in emp	unskilled	.413	.226	.268	-.18	1.01
		Semi skilled	-.151	.200	.876	-.67	.37
		skilled	-.173	.252	.901	-.84	.49
*. The mean difference is significant at the 0.05 level.							

Appendix 10 table 7g SHEFFIELD POST HOC (TUKEY HONEST SIGNIFICANT DIFFERENCE TESTS AND GAMES HOWELL) THAT REPORTED SIGNIFICANT DIFFERENCE BETWEEN THE ATTITUDE OF THE DIFFERENT FAMILIARITY GROUPS IN RELATION TO STATEMENTS ABOUT THEIR LEAST PREFERRED PLOTS CONTINUED OVERLEAF

Multiple Comparisons

Dependent Variable		(I) What was your familiarity with meadow-type planting before seeing this planting	(J) What was your familiarity with meadow-type planting before seeing this planting	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
[Least] The meadow looks dead	Tukey HSD	Never seen	2	-.722	.387	.245	-1.72	.28
			3	-.262	.249	.720	-.91	.38
			4	.145	.218	.909	-.42	.71
		Seen in media	1	.722	.387	.245	-.28	1.72
			3	.460	.367	.594	-.49	1.41
			4	.868	.347	.063	-.03	1.77
		Seen in media/real life	1	.262	.249	.720	-.38	.91
			2	-.460	.367	.594	-1.41	.49
			4	.407	.181	.115	-.06	.88
		Seen in real life	1	-.145	.218	.909	-.71	.42
			2	-.868	.347	.063	-1.77	.03
			3	-.407	.181	.115	-.88	.06
	Games-Howell	Never seen	2	-.722	.424	.358	-1.95	.51
			3	-.262	.275	.777	-.99	.47
			4	.145	.234	.924	-.49	.78
		Seen in media	1	.722	.424	.358	-.51	1.95
			3	.460	.402	.670	-.74	1.66
			4	.868	.375	.166	-.30	2.04
		Seen in media/real life	1	.262	.275	.777	-.47	.99
			2	-.460	.402	.670	-1.66	.74
			4	.407	.191	.155	-.10	.91
		Seen in real life	1	-.145	.234	.924	-.78	.49
			2	-.868	.375	.166	-2.04	.30
			3	-.407	.191	.155	-.91	.10
[Least] I like the overall amount of colour	Tukey HSD	Never seen	2	-.051	.371	.999	-1.01	.91
			3	.806*	.239	.005	.19	1.43
			4	.306	.209	.461	-.24	.85
		Seen in media	1	.051	.371	.999	-.91	1.01
			3	.857	.352	.074	-.06	1.77
			4	.358	.332	.705	-.50	1.22
			1	-.806*	.239	.005	-1.43	-.19

		Seen in media/real life	2	-.857	.352	.074	-1.77	.06
			4	-.500*	.174	.023	-.95	-.05
		Seen in real life	1	-.306	.209	.461	-.85	.24
			2	-.358	.332	.705	-1.22	.50
			3	.500*	.174	.023	.05	.95
	Games-Howell	Never seen	2	-.051	.445	.999	-1.33	1.23
			3	.806*	.255	.017	.11	1.50
			4	.306	.260	.646	-.40	1.01
		Seen in media	1	.051	.445	.999	-1.23	1.33
			3	.857	.381	.183	-.34	2.05
			4	.358	.385	.790	-.84	1.56
		Seen in media/real life	1	-.806*	.255	.017	-1.50	-.11
			2	-.857	.381	.183	-2.05	.34
			4	-.500*	.123	**.000**	-.82	-.18
		Seen in real life	1	-.306	.260	.646	-1.01	.40
			2	-.358	.385	.790	-1.56	.84
			3	.500*	.123	**.000**	.18	.82
[Least] I like the grasses moving in the wind	Tukey HSD	Never seen	2	-.363	.364	.751	-1.31	.58
			3	.216	.235	.795	-.39	.83
			4	-.453	.205	.125	-.99	.08
		Seen in media	1	.363	.364	.751	-.58	1.31
			3	.579	.346	.340	-.32	1.48
			4	-.090	.327	.993	-.94	.76
		Seen in media/real life	1	-.216	.235	.795	-.83	.39
			2	-.579	.346	.340	-1.48	.32
			4	-.669*	.171	.001	-1.11	-.23
		Seen in real life	1	.453	.205	.125	-.08	.99
			2	.090	.327	.993	-.76	.94
			3	.669*	.171	.001	.23	1.11
	Games-Howell	Never seen	2	-.363	.324	.680	-1.26	.54
			3	.216	.275	.861	-.51	.95
			4	-.453	.229	.218	-1.07	.17
		Seen in media	1	.363	.324	.680	-.54	1.26
			3	.579	.297	.244	-.26	1.42
			4	-.090	.255	.984	-.87	.69
		Seen in media/real life	1	-.216	.275	.861	-.95	.51
			2	-.579	.297	.244	-1.42	.26
			4	-.669*	.190	.004	-1.17	-.17
		Seen in real life	1	.453	.229	.218	-.17	1.07
			2	.090	.255	.984	-.69	.87
			3	.669*	.190	.004	.17	1.17

*. The mean difference is significant at the 0.05 level.

Appendix 11: Post hoc (Tukey HSD) Tests, London respondents

Appendix 11 Table 8: Tukey post hoc tests for differences between the main user groups and how often they visit the park.

Dependent Variable:	how often do you visit the park?					
Tukey HSD						
(I) What is your main reason for visiting the park?		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1. For pleasure	2. To walk dog	-1.207	.531	.264	-2.79	.38
	3. For transport	-.790	.607	.851	-2.60	1.02
	4. For sport	-.057	.661	1.000	-2.03	1.92
	5. To socialise	1.127	.442	.149	-.19	2.45
	6. For nature	-.234	.503	.999	-1.74	1.27
	7. To supervise children	-.431	.275	.704	-1.25	.39
2. To walk dog	1. For pleasure	1.207	.531	.264	-.38	2.79
	3. For transport	.417	.778	.998	-1.91	2.74
	4. For sport	1.150	.821	.801	-1.30	3.60
	5. To socialise	2.333*	.657	.009	.37	4.30
	6. For nature	.972	.700	.807	-1.12	3.06
	7. To supervise children	.776	.559	.808	-.89	2.44
3. For transport	1. For pleasure	.790	.607	.851	-1.02	2.60
	2. To walk dog	-.417	.778	.998	-2.74	1.91
	4. For sport	.733	.872	.980	-1.87	3.34
	5. To socialise	1.917	.720	.115	-.23	4.07
	6. For nature	.556	.759	.990	-1.71	2.82
	7. To supervise children	.359	.632	.998	-1.53	2.24
4. For sport	1. For pleasure	.057	.661	1.000	-1.92	2.03
	2. To walk dog	-1.150	.821	.801	-3.60	1.30
	3. For transport	-.733	.872	.980	-3.34	1.87
	5. To socialise	1.183	.767	.718	-1.11	3.47
	6. For nature	-.178	.803	1.000	-2.58	2.22
	7. To supervise children	-.374	.684	.998	-2.42	1.67
5. To socialise	1. For pleasure	-1.127	.442	.149	-2.45	.19
	2. To walk dog	-2.333*	.657	.009	-4.30	-.37
	3. For transport	-1.917	.720	.115	-4.07	.23
	4. For sport	-1.183	.767	.718	-3.47	1.11
	6. For nature	-1.361	.635	.333	-3.26	.54
	7. To supervise children	-1.558*	.476	.021	-2.98	-.14
6. For nature	1. For pleasure	.234	.503	.999	-1.27	1.74
	2. To walk dog	-.972	.700	.807	-3.06	1.12
	3. For transport	-.556	.759	.990	-2.82	1.71
	4. For sport	.178	.803	1.000	-2.22	2.58
	5. To socialise	1.361	.635	.333	-.54	3.26
	7. To supervise children	-.197	.533	1.000	-1.79	1.39
7. To supervise children	1. For pleasure	.431	.275	.704	-.39	1.25
	2. To walk dog	-.776	.559	.808	-2.44	.89
	3. For transport	-.359	.632	.998	-2.24	1.53
	4. For sport	.374	.684	.998	-1.67	2.42
	5. To socialise	1.558*	.476	.021	.14	2.98
	6. For nature	.197	.533	1.000	-1.39	1.79

*. The mean difference is significant at the 0.05 level.

Appendix 11 Table 9 Tukey post hoc tests for Ruskin park regarding other open spaces visited and ('*When do you visit the park*?')

Dependent Variable:	When do you visit the park?					
Tukey HSD						
(I) A3 WHICH OTHER OPEN SPACES DO YOU VISIT MOST REGULARLY		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Human designed/heavily manipulated	Less heavily manipulated/natural	-.228*	.086	.024	-.43	-.02
	Both	-.121	.066	.163	-.28	.04
Less heavily manipulated/natural	Human designed/heavily manipulated	.228*	.086	.024	.02	.43
	Less heavily manipulated/natural	.108	.089	.448	-.10	.32
Both	Human designed/heavily manipulated	.121	.066	.163	-.04	.28
	Less heavily manipulated/natural	-.108	.089	.448	-.32	.10
*. The mean difference is significant at the 0.05 level.						

Appendix 11 Table 10: Tukey post hoc tests for Ruskin park regarding other open spaces visited and ('*What is your main reason for visiting the park*?')

Dependent Variable:	What is your main reason for visiting the park?					
Tukey HSD						
(I) A3 WHICH OTHER OPEN SPACES DO YOU VISIT MOST REGULARLY		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Heavily manipulated	Less heavily manipluated	.561	.566	.584	-.78	1.90
	both	-.933	.432	.081	-1.95	.09
Less heavily manipulated	Heavily manipulated	-.561	.566	.584	-1.90	.78
	both	-1.494*	.583	.030	-2.87	-.11
both	Heavily manipulated	.933	.432	.081	-.09	1.95
	Less heavily manipulated	1.494*	.583	.030	.11	2.87
*. The mean difference is significant at the 0.05 level.						

Appendix 11 Table 11: Tukey post hoc tests for Ruskin park regarding other open spaces ('*I like the balance between the colourful flowers*')

Multiple Comparisons						
Dependent Variable:	[Most] I like the balance between the colourful flowers					
Tukey HSD						
(I) A3 WHICH OTHER OPEN SPACES DO YOU VISIT MOST REGULARLY		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Human designed/heavily manipulated	Less heavily manipulated/natural	-.135	.163	.686	-.52	.25
	Both	-.297*	.125	.048	-.59	.00

Less heavily manipulated/natural	Human designed/heavily manipulated	.135	.163	.686	-.25	.52
	Both	-.163	.168	.597	-.56	.23
Both	Human designed/heavily manipulated	.297*	.125	.048	.00	.59
	Less heavily manipulated/natural	.163	.168	.597	-.23	.56
*. The mean difference is significant at the 0.05 level.						

Appendix 11 Table 12 post hc tukey hsd test for the different occupation groups and their opinion of the park Ruskin Park, London

Multiple Comparisons						
Dependent Variable:	What is your overall impression of the meadow in the park?					
Tukey HSD						
(I) Roccupation		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Unskilled	Semiskilled	-.193	.132	.464	-.54	.15
	Skilled	-.092	.138	.910	-.45	.27
	Not in employment	.079	.135	.938	-.27	.43
Semiskilled	Unskilled	.193	.132	.464	-.15	.54
	Skilled	.101	.092	.692	-.14	.34
	Not in employment	.272*	.088	.013	.04	.50
Skilled	Unskilled	.092	.138	.910	-.27	.45
	Semiskilled	-.101	.092	.692	-.34	.14
	Not in employment	.171	.097	.297	-.08	.42
Not in employment	Unskilled	-.079	.135	.938	-.43	.27
	Semiskilled	-.272*	.088	.013	-.50	-.04
	Skilled	-.171	.097	.297	-.42	.08
*. The mean difference is significant at the 0.05 level.						

Appendix 11 Table 13: results for the tukey hsd test comparing the means of the scores of the different age groups response to the statement "*The dead plants spoil the flowers*" Ruskin Park. London

Dependent Variable:	[Least] The dead plants spoil the flowers					
Tukey HSD						
(I) Rage		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
UNDER 18	18-30	.586	.446	.777	-.70	1.87
	31 - 45	1.060	.424	.130	-.16	2.28
	46 - 55	1.087	.455	.166	-.22	2.40
	56-65	1.000	.471	.281	-.36	2.36
	OVER 65	1.389*	.471	.042	.03	2.75
18-30	UNDER 18	-.586	.446	.777	-1.87	.70
	31 - 45	.474	.214	.234	-.14	1.09
	46 - 55	.501	.269	.429	-.27	1.28
	56-65	.414	.296	.729	-.44	1.27
	OVER 65	.803	.296	.079	-.05	1.66
31 - 45	UNDER 18	-1.060	.424	.130	-2.28	.16
	18-30	-.474	.214	.234	-1.09	.14
	46 - 55	.027	.231	1.000	-.64	.69
	56-65	-.060	.262	1.000	-.82	.70
	OVER 65	.329	.262	.810	-.43	1.09
46 - 55	UNDER 18	-1.087	.455	.166	-2.40	.22
	18-30	-.501	.269	.429	-1.28	.27
	31 - 45	-.027	.231	1.000	-.69	.64

	56-65	-.087	.309	1.000	-.98	.80
	OVER 65	.302	.309	.924	-.59	1.19
56-65	UNDER 18	-1.000	.471	.281	-2.36	.36
	18-30	-.414	.296	.729	-1.27	.44
	31 - 45	.060	.262	1.000	-.70	.82
	46 - 55	.087	.309	1.000	-.80	.98
	OVER 65	.389	.333	.852	-.57	1.35
OVER 65	UNDER 18	-1.389*	.471	.042	-2.75	-.03
	18-30	-.803	.296	.079	-1.66	.05
	31 - 45	-.329	.262	.810	-1.09	.43
	46 - 55	-.302	.309	.924	-1.19	.59
	56-65	-.389	.333	.852	-1.35	.57
*. The mean difference is significant at the 0.05 level.						

Appendix 11 Table 14 Post hoc tukey comparison of means test for the different age groups in Ruskin park and their answer to the likert response statement " The meadow looks fresh

Dependent Variable:	[Least] The meadow looks fresh					
Tukey HSD						
		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
(I) Rage					Lower Bound	Upper Bound
UNDER 18	18-30	-.967	.489	.360	-2.38	.44
	31 - 45	-1.207	.464	.103	-2.54	.13
	46 - 55	-1.380	.497	.067	-2.81	.05
	56-65	-1.333	.516	.107	-2.82	.15
	OVER 65	-1.556*	.516	.034	-3.04	-.07
18-30	UNDER 18	.967	.489	.360	-.44	2.38
	31 - 45	-.240	.236	.912	-.92	.44
	46 - 55	-.413	.296	.730	-1.27	.44
	56-65	-.367	.326	.871	-1.31	.57
	OVER 65	-.589	.326	.465	-1.53	.35
31 - 45	UNDER 18	1.207	.464	.103	-.13	2.54
	18-30	.240	.236	.912	-.44	.92
	46 - 55	-.173	.253	.983	-.90	.55
	56-65	-.127	.287	.998	-.95	.70
	OVER 65	-.349	.287	.829	-1.18	.48
46 - 55	UNDER 18	1.380	.497	.067	-.05	2.81
	18-30	.413	.296	.730	-.44	1.27
	31 - 45	.173	.253	.983	-.55	.90
	56-65	.047	.338	1.000	-.93	1.02
	OVER 65	-.176	.338	.995	-1.15	.80
56-65	UNDER 18	1.333	.516	.107	-.15	2.82
	18-30	.367	.326	.871	-.57	1.31
	31 - 45	.127	.287	.998	-.70	.95
	46 - 55	-.047	.338	1.000	-1.02	.93
	OVER 65	-.222	.365	.990	-1.27	.83
OVER 65	UNDER 18	1.556*	.516	.034	.07	3.04
	18-30	.589	.326	.465	-.35	1.53
	31 - 45	.349	.287	.829	-.48	1.18
	46 - 55	.176	.338	.995	-.80	1.15
	56-65	.222	.365	.990	-.83	1.27

Appendix 11 Table 15 Post hoc tukey test Results of tukey post hoc tests for the different age groups in relation to the statement My least favourite meadow looks neat and well tended. Significant differences are highlighted in opinion between the under 18s and over 65s, and the 31-45s and over 65s. the Likert responses ranged from -2 (strongly disagree to 2 strongly agree)

(I) Rage		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
UNDER 18	18-30	-.694	.486	.711	-2.09	.71
	31 - 45	-.753	.462	.580	-2.09	.58
	46 - 55	-1.300	.495	.097	-2.73	.13
	56-65	-1.167	.514	.212	-2.65	.31
	OVER 65	-1.611*	.514	.024	-3.09	-.13
18-30	UNDER 18	.694	.486	.711	-.71	2.09
	31 - 45	-.060	.233	1.000	-.73	.61
	46 - 55	-.606	.293	.308	-1.45	.24
	56-65	-.473	.323	.687	-1.40	.46
	OVER 65	-.918	.323	.056	-1.85	.01
31 - 45	UNDER 18	.753	.462	.580	-.58	2.09
	18-30	.060	.233	1.000	-.61	.73
	46 - 55	-.547	.252	.256	-1.27	.18
	56-65	-.413	.286	.699	-1.24	.41
	OVER 65	-.858*	.286	.036	-1.68	-.03
46 - 55	UNDER 18	1.300	.495	.097	-.13	2.73
	18-30	.606	.293	.308	-.24	1.45
	31 - 45	.547	.252	.256	-.18	1.27
	56-65	.133	.337	.999	-.84	1.10
	OVER 65	-.311	.337	.940	-1.28	.66
56-65	UNDER 18	1.167	.514	.212	-.31	2.65
	18-30	.473	.323	.687	-.46	1.40
	31 - 45	.413	.286	.699	-.41	1.24
	46 - 55	-.133	.337	.999	-1.10	.84
	OVER 65	-.444	.363	.825	-1.49	.60
OVER 65	UNDER 18	1.611*	.514	.024	.13	3.09
	18-30	.918	.323	.056	-.01	1.85
	31 - 45	.858*	.286	.036	.03	1.68
	46 - 55	.311	.337	.940	-.66	1.28
	56-65	.444	.363	.825	-.60	1.49

*. The mean difference is significant at the 0.05 level.

Appendix 11 Table 16 Tukey test looking at seasonality and reason for being in park

Dependent Variable:	When do you visit the park?					
Tukey HSD						
(I) What is your main reason for visiting the park?		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1. For pleasure	2. To walk dog	.066	.133	.999	-.33	.46
	3. For transport	.191	.152	.870	-.26	.64
	4. For sport	.191	.166	.910	-.30	.69
	5. To socialise	-.445*	.115	.003	-.79	-.10
	6. For nature	.191	.126	.735	-.19	.57
	7. To supervise children	.088	.069	.861	-.12	.30
2. To walk dog	1. For pleasure	-.066	.133	.999	-.46	.33
	3. For transport	.125	.195	.995	-.46	.71
	4. For sport	.125	.205	.996	-.49	.74
	5. To socialise	-.511*	.167	.041	-1.01	-.01
	6. For nature	.125	.175	.992	-.40	.65
	7. To supervise children	.022	.140	1.000	-.40	.44
3. For transport	1. For pleasure	-.191	.152	.870	-.64	.26
	2. To walk dog	-.125	.195	.995	-.71	.46
	4. For sport	0.000	.218	1.000	-.65	.65
	5. To socialise	-.636*	.183	.011	-1.18	-.09
	6. For nature	0.000	.190	1.000	-.57	.57
	7. To supervise children	-.103	.158	.995	-.57	.37
4. For sport	1. For pleasure	-.191	.166	.910	-.69	.30
	2. To walk dog	-.125	.205	.996	-.74	.49
	3. For transport	0.000	.218	1.000	-.65	.65
	5. To socialise	-.636*	.194	.022	-1.22	-.06
	6. For nature	0.000	.201	1.000	-.60	.60
	7. To supervise children	-.103	.171	.997	-.61	.41
5. To socialise	1. For pleasure	.445*	.115	.003	.10	.79
	2. To walk dog	.511*	.167	.041	.01	1.01
	3. For transport	.636*	.183	.011	.09	1.18
	4. For sport	.636*	.194	.022	.06	1.22
	6. For nature	.636*	.162	.002	.15	1.12
	7. To supervise children	.534*	.123	.000	.17	.90
6. For nature	1. For pleasure	-.191	.126	.735	-.57	.19
	2. To walk dog	-.125	.175	.992	-.65	.40
	3. For transport	0.000	.190	1.000	-.57	.57
	4. For sport	0.000	.201	1.000	-.60	.60
	5. To socialise	-.636*	.162	.002	-1.12	-.15
	7. To supervise children	-.103	.133	.987	-.50	.30
7. To supervise children	1. For pleasure	-.088	.069	.861	-.30	.12
	2. To walk dog	-.022	.140	1.000	-.44	.40
	3. For transport	.103	.158	.995	-.37	.57
	4. For sport	.103	.171	.997	-.41	.61
	5. To socialise	-.534*	.123	.000	-.90	-.17
	6. For nature	.103	.133	.987	-.30	.50