PLACE EVALUATION:
A TRANSACTIONAL ADAPTIVE APPROACH

The Case Study of Cairo's Waterfront

Thesis Submitted for the Degree of

Doctor of Philosophy

in

Architecture

By

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September
1999

Declaration

This thesis is my original work and has been composed solely by myself

<div align="right">

Hatem Nabih

</div>

DEDICATION

عن أبي هريرة قال قال رسول الله صــــــــى الله عليــه

وسلم " ما من رجل يسلك طريقا يطلب فيه علمـا إلا ســهل

الله له به طريق الجنة ... "

Translation:

"IF ANYONE PURSUES A PATH IN SEARCH OF KNOWLEDGE, ALLAH WILL THEREBY MAKE EASY FOR HIM A PATH TO PARADISE..."

(Mohamed, the Profit of Allah – may peace be upon him)*

As the intention of my study was built upon the above reason, therefore this work is foremost dedicated to

God (Allah).

...closest in line,   my $m$other x 3

and my $f$ather.

ACKNOWLEDGEMENTS

During the total period of study, many people have helped me produce this work, both directly and indirectly…..

First and foremost, this research would not have been completed without the total support from both my parents that have been waiting in anticipation for me to finalise this work. My mother's sacrifices both morally and physically are of immense value, her constant concerns never made me feel left out while living in a foreign country. Similarly, much gratitude goes to my father not only as a parent, but by also setting the standards for me to follow within his profession. An example of hard work and great concern to details is quite hard to follow, yet it gave me enough encouragement, support and patience.

Dr.Mohamed Khairy Amin has definitely been the one who triggered my initial readings, particularly by lending me a valuable book to read, which was my first plunge into research. Dr. Manal Abu El-Ela and her own research had then set out a standard and an initial target for me to meet. Both have dedicated much of their time in directing me in the right way both to my studies and the destined country.

I would like to show my appreciation to all the people behind the development of the Environmental Studies Library of Edinburgh College of Art. This is as it is my personal belief that this library has saved me a lot of time, as it contained valuable resources of literature, particularly within its wide array of journals. To my knowledge, much effort has gone into this library. As much of this work was highly dependent on it, I would therefore like to thank the following: Kirsty Campbell, Jane De Busk, Pamela Masters, Jeni Fulton and Simon Chlopas. It should be noted here that Dr. Faozi Ujam's involvement in overcoming student access to the Main Library of Edinburgh University is also appreciated. This research was highly dependent upon both libraries and their support should not therefore be undervalued.

Particular thanks to Dr. Lucy McCloughan for her help in reading and correcting my English at the initial stages of this work. Her further assistance in the statistical analysis is greatly appreciated, as it was of great value to my research. Daniel de Iongh has also contributed to the final outcome of this research, not only in clarifying linguistic corrections; he has carefully read with detailed interest and identified important issues to be addressed.

Lots of appreciation for Waleed Kaki's constant moral, spiritual and religious support during the long periods we spent working. His further support during many times of hardship has in turn made me stronger and better experienced in life. More than a friend, he has been another brother. A special thank you to Elizabeth Pardoe as she spent considerable effort in helping me with my vocabulary, furthermore and rather indirectly she widened my understanding of many aspects of British lifestyle, which was greatly significant in shaping my understanding of cultural differences. A specific thanks also goes to Ali Taileb and

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Abstract of Thesis Form

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PLACE EVALUATION:
A TRANSACTIONAL ADAPTIVE APPROACH
The Case Study of Cairo's Waterfront

Signature: _____   Date: _____   September 1999

Abstract

The objective of this research is to determine how Cairenes construe places. The body of study is applied to the context of the waterfront area along the Nile River within Cairo. It is important to stress that the research is not based upon a witnessed well-defined problem but rather built upon a model, based upon a Transactional approach that explores how Cairenes construe places later revealing particular problems. A review of literature initially identifies many paradigms of perception and human behaviour. These paradigms have been used in order to identify a model, which is used to guide the course of the research and is based upon a man in environment perspective. Therefore the study is set out to individually determine aspects of place and human perception, bearing in mind the theoretical reasoning behind the model, which suggests that both entities should holistically be examined.

The research is therefore orientated towards determining aspects of change between people and place. From an adaptation approach it is therefore argued that the level of variation existing within the environment determines the amount of change in behaviour and perception that may occur in order to achieve the appropriate balance required between people and place. As the research attempts to determine how Cairenes construe places, and as people's perceptions and the environment are in constant change, thus change in our case relates to how human perception and behaviour are affected by the level of variation existing within the environment. The basis of the model is therefore related to both *context* and *human perception*.

The case study involves Cairo's waterfront as it is centrally located and considered as a convenient public place. This area is used in order to determine aspects of the context and human perception. Therefore the waterfront is considered as a public

place used to examine the objectives of the research. The results reveal that there exists a lack of variation in public spaces along the waterfront and Cairo. It also highlights that the social class of people within a context affects how Cairenes' construe places. Both the contextual and perceptual analysis uncovers segregated patterns of behaviour within the City and is tackled by introducing general design recommendations for public areas situated along Cairo's waterfront and in general within public space.

The methodology involves a qualitative analysis of interviews and a further quantitative analysis of a questionnaire. Both analyses attempt to determine dominant aspects of perception and context. It is also important to underline that within the proposed model derived from the Transactional approach, aspects of change are embodied in the level of variation existing within the environment. This is based upon the assumption that higher levels of variation in the context affect people's perceptions.

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INTRODUCTION

INTRODUCTION

Theoretical framework

The choice of the main model of this research is based upon the researcher's background reading of research approaches on environmental evaluation and landscape perception. These approaches are mentioned within chapter 1. The model is predominantly designed from a transactional approach with particular build up and additions from an adaptation perspective (chapter 2 and 3). Both perspectives are found to be quite similar as they collectively deal with Man and Environment as mutual and interrelated entities with behaviours and perceptions constantly changing and adapting to the environment. Therefore the model is based upon *Man* and *Environment* reflecting *Human Perception* and the related *Context* respectively. It is hypothesised that both entities should achieve a certain level of fitness between them in order to reach a state of equilibrium. Specifically speaking, it is hypothesised that people would not gain a certain level of satisfaction unless the environment fits people's requirements, thus coming closer to achieving a required level of compatibility. It should be noted that, from the researcher's point of view, it is extremely unlikely that a perfect fit between man and the built environment can be achieved but a closer fit between both entities can be attempted. These concepts further assume that, as long as a state of equilibrium is not achieved, thus changes in human perception and behaviour and/or changes in the environment are definitely occurring. This thus corresponds to the transactional approach that addresses factors of change and how change takes place.

This now leads to a specific quest of investigating how change occurs in both people and the environment. Do we want human behaviour and perception to change? Or do we want changes in the environment to take place in order to correspond to human behaviour, perception and needs? Certainly, human behaviour and perception are flexible enough to

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adapt to certain situations and to find alternative modes of behaviour, but at the cost of certain privileges and demands. This theme underlies one of the model's objectives as it attempts to determine people's perception to a specific context and their needs. This suggests that the level of understanding in changing the built environment to satisfy people's needs is required. The answer to the above questions lies within the research model that has ascribed theories of adaptation to the transactional approach. Thus the objective of the model is to determine attributes of the environment and people, which would consequently address how changes in behaviour and the environment take place in order to increase a level of compatibility between both entities.

It is also argued that the created model based upon a transactional approach is relatively more holistic than the other World views (chapter 3). Furthermore, as the approach addresses aspects of time and change, it is found to be more holistic in nature, thus making it more appropriate to study psychological phenomena. The theoretical framework included within chapters 1, 2 and 3 does not only intend to explore previous research methodologies, but further attempts to create a model that helps in interpreting the results achieved within the analysis. The results achieved at times collectively attempt to reflect both the *Context* and *Human perception* of place, thus following the main objectives of the model.

Case study

The case study involves the Nile River as it passes through the heart of Cairo, it becomes a convenient place to visit. Furthermore, the lack of public space in the city heightens the significance of the urban waterfront within the city. The significance of the water edges to Cairenes is embedded within their lifestyle and behaviour, as are other waterfronts within Egypt, where they are heavily used by the public domain. The Nile waterfront (later referred to as 'Corniche') in Cairo is chosen in order to conduct and investigate the objectives mentioned above. Certain areas along the waterfront experience crowding, particularly during national holidays and is similarly witnessed after sunset on a hot summer's day. This is because the location of the waterfront within the city of Cairo lies in a central position within the city. Meanwhile, alternative wide and open public spaces within this area of Cairo do not exist. In the researcher's opinion the waterfront area is found to be habitually and regularly enjoyed by the general public as its climatic conditions

and open views lie in contrast with the heavily built nature of the city. This makes the place highly familiar to large numbers of the population and it was therefore considered to be a convenient setting to investigate the research objectives.

Main Objectives

The thesis is divided into two main stages of objectives. The initial objective explores how Cairenes construe places and further intends to explore paradigms of environmental evaluation that have an effective role within the proposed scope of study. This exploration leads to the second stage of objectives that highlight certain problems specifically relating to Cairenes' perception and place configuration. These problems were not only found valuable for determining criteria for place construal but it was also found important to emphasise these issues for future improvement and management of public space in Cairo. The two main stages of objectives are described in more detail as follows.

The overall objectives of the research lie in four main domains: 1. Exploring the physical context of the case study; 2. Understanding how Cairenes construe places; and further 3. Deducing a model from the literature. The final objective attempts to 4. Resolve the problems that later appear as an outcome of exploring the initial three objectives by creating a design framework. It is important to note that the objectives may be presented within the thesis in a linear presentation, but the interrelationships between the objectives are not necessarily as such. Only the design strategy is presented here as an outcome of the other objectives. In total the objectives are interrelated and support each other. **Fig 0.1** presents the objectives and their interrelationships.

Objective 1: Exploring Theories of Place Evaluation

The main objective of this investigation is to understand how Carienes construe public areas, particularly the waterfront. Therefore the research attempts to determine the dominant aspects of place and perception that may have a large effect upon judgement. This objective is quite complex, as numerous facets to place perception are involved. In order to reduce this complexity it is important to create a research model based upon theory. This would attempt to guide the sequence of the research and further help in

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interpreting the results deduced from the case study. Therefore this model in itself becomes a research objective. The model is not only created for the purpose of guiding and interpreting the results, but also for further exploring the rationality of the paradigms of environmental evaluation upon which the model is based.

As a consequence of the above objectives the author will initially attempt to explore and explain certain paradigms of landscape and environmental judgement. This would shed light on the various research methodologies and theoretical stances that previous research has undergone and is considered as an overview of the literature. The information gathered from the literature identifies main streams of thought and research which, in turn, guides the research and is considered as a build up for creating the model.

Objective 2: Identifying the Problems

Though the objectives above are rather more exploratory, the analysis of the interviews later reveal results which then identify the main problems. These results appear as the model guides the progression of the research thus revealing certain problems in relation to the waterfront context and the Cairene society. These issues relate to the level of variation and the concentration of activities existing within certain areas of Cairo, thus relating to the *Context*. Furthermore, the analyses produce significant results relating to *Human Perception*, which relate to place evaluation. Further problems in relation to behaviour and lifestyle of Cairenes are deduced and highlighted. Consequently, it is important to point out that, as the research follows the main objectives, other objectives unfold within the sequence of the research. This is particularly witnessed within chapter 9, which specifically highlights a sequence of results and observations that lead the researcher to explore other criteria relevant to the main objectives. After a collective overview of the main results and discovered problems within chapter 10, the final chapter discusses the importance of the findings with respect to theory and design. Thus, the final objective is set to create a design framework that would deal with the deduced problems.

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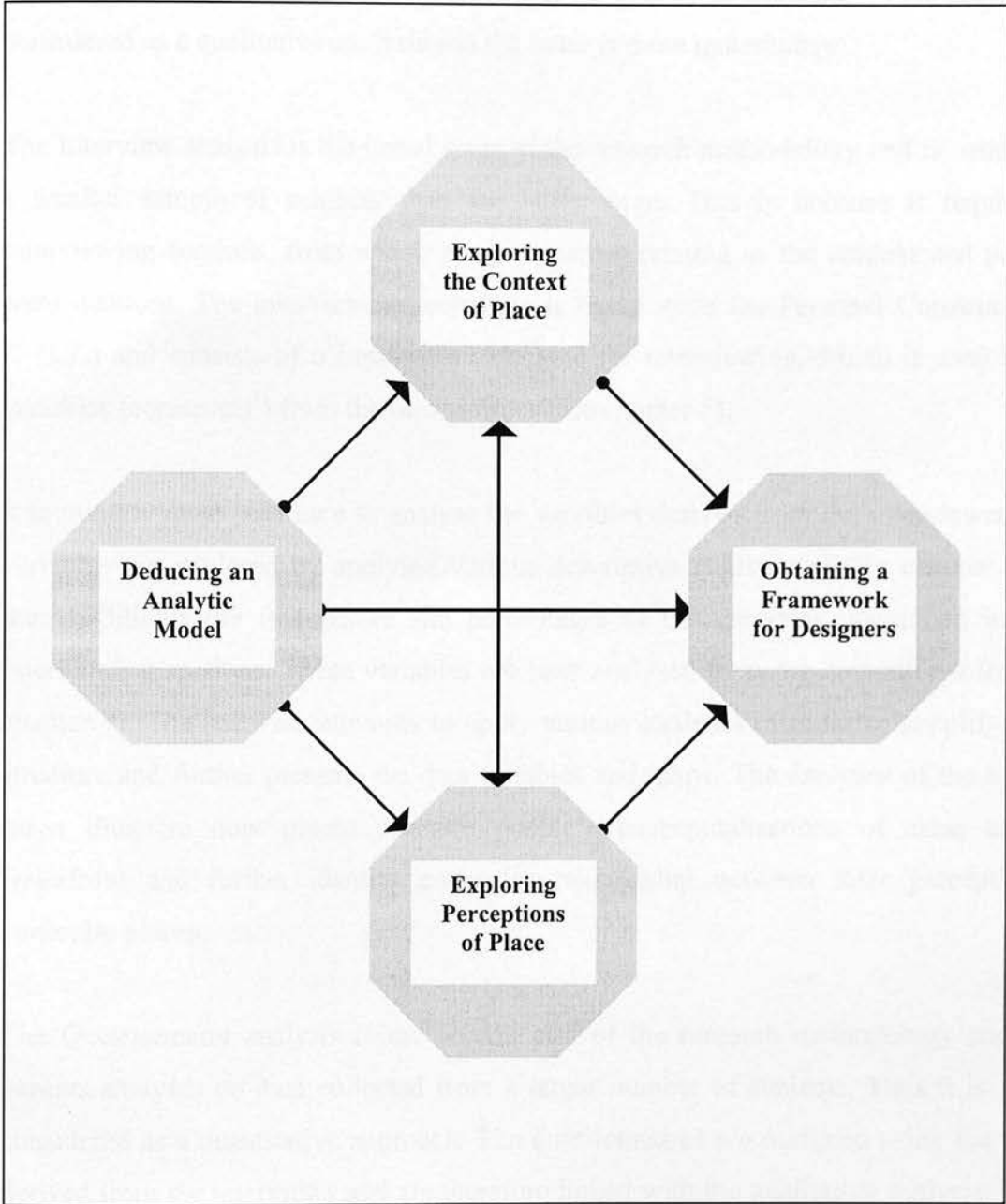
Figure 0.1: Identifying the relationships between the main research objectives.

The figure contains four connected nodes:

- Exploring the Context of Place
- Deducing an Analytic Model
- Obtaining a Framework for Designers
- Exploring Perceptions of Place

Research Techniques

The research is based upon two types of data collection (Interview analysis and Questionnaire analysis) applied to two different groups of subjects, where the former is considered as a qualitative analysis and the latter is more quantitative.

The Interview analysis is the initial stage of the research methodology and is conducted on a smaller sample of subjects than the latter stage. This is because it required long interviewing sessions, from which many variables relating to the context and perception were deduced. The interviewing technique is based upon the Personal Construct Theory (P.C.T.) and consists of a Laddering technique for interviewing, which is used to derive variables (constructs[1]) from the interviewees (see chapter 5).

It is initially attempted here to analyse the variables derived from the interviewees. These variables are explored by applying various descriptive statistics within chapter 6, which then highlights the frequencies and percentages of the variables mentioned within the interviewing sessions. These variables are later analysed by using computer software (see chapter 7). The software attempts to apply various analyses in order to simplify the data structure and further presents the data in tables and maps. The analyses of the tables and maps illustrate how places describe people's conceptualisations of areas along the waterfront and further identify particular relationship between their perceptions and particular places.

The Questionnaire analysis is the second part of the research methodology and applies various analyses on data collected from a larger number of subjects. Thus it is generally considered as a quantitative approach. The questionnaires are designed using the variables derived from the interviews and are therefore linked with the qualitative analysis. This part is further divided into two analytic stages. The initial analytic stage of the questionnaire (see chapter 8) sets out to quantitatively test and cross-check for the results earlier achieved

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[1] The variables refer to the constructs as labelled within Personal Construct Psychology. This shall be elaborated within chapter 5.

within chapter 7. This analysis is conducted by applying correlation tests on variables relating to the context of the waterfront. The results here are cross-checked and therefore finalise the initial stage of analysis, which relates to the *Context* of the waterfront.

The second analytic stage relates to *Human Perception* and is therefore set out to determine how Cairenes perceive the waterfront. By analysing the data, dominant aspects of place perception are then revealed. This finding further leads the researcher to conduct tests on people from different backgrounds, which also reveals differences in patterns of behaviour within private and public space. This again shows differences existing between both groups. For closely examining the specific perceptual and behavioural differences existing between both groups, further analyses are individually applied on different groups. The differences were then listed, thus ending the ending the questionnaire analysis and procedure of the research.

Thesis Structure

The overall structure of the thesis is therefore divided into three parts. Part One is the theoretical background that attempts to determine the model suitable for a holistic examination of contextual and perceptual aspects. Part Two is more specific and orientated to the analysis of the case study. Furthermore, and whenever necessary this part reflects results relating to the model and the theoretical background of the research. Part Three overviews the results and main postulations in order to suggest a flexible design framework that would correspond to both the model and the achieved results. The three parts are briefly described below, with a general table that maps the chapters of the thesis with their various orientations, thus revealing the overall structure of the thesis (see **table 0.1**).

CHAPTER 1	THEORETICAL REVIEW	THEORETICAL BUILDUP	IDENTIFYING THE RESEARCH APPROACH
CHAPTER 2	THEORETICAL BUILDUP		
CHAPTER 3	MODEL	CREATING THE MODEL	**PART ONE** (THEORY)
CHAPTER 4	INTRODUCTION TO CASE STUDY		
CHAPTER 5	RESEARCH TECHNIQUE		OVERALL RESEARCH METHODOLOGY AND PROCEDURE
CHAPTER 6	DESCRIPTIVE ANALYSIS	Part One — INTERVIEW ANALYSIS	**PART TWO** (CASE STUDY)
CHAPTER 7	CONTEXTUAL ANALYSIS		
CHAPTER 8	ANALYSIS OF HUMAN PERCEPTION	Part Two — QUESTIONNAIRE ANALYSIS	
CHAPTER 9	OVERVIEW OF RESULTS		EXAMINING THE RESEARCH FINDINGS
CHAPTER 10			
CHAPTER 11	CONCLUSION AND RECOMMENDATIONS		**PART THREE** (CONCLUSION)

Table 0.1: Overall structure of the thesis.

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Part One, as mentioned above, involves reviewing previous research approaches applied to environmental perception. It highlights the scope of study, intentions and limitations of various approaches that attempt to determine attributes of perception (chapter 1). This exploration is followed by a theoretical build up from an environmental adaptation stance (chapter 2), which is implemented for the purpose of achieving a model that further guides the analysis of the case study. This model, predominantly based upon a transactional approach, stresses that man and environment should be holistically studied (chapter 3). The transactional approach is further shown to highlight the importance of determining aspects of change therefore acknowledges the time dimension, which is often suppressed within other approaches. This gives it a more holistic nature for the purpose of studying psychological phenomena. This conception later develops and leads the research to attempt to describe attributes of the waterfront context and further attempts to determine the dominant perceptions of the Cairenes to this context. This would determine aspects of *perception* and *context*, which would respectively reflect *man* and *environment* thus addressing two main objectives of the model. The achieved model derived from within a transactional perspective would serve as a guide to the research in order to elaborate upon the results listed within Part Two.

Part Two involves the case study of Cairo's waterfront context, which at this point is used as a tool to explore Cairenes' varying perceptions (chapter 4). This part describes the technique used to derive main attributes of place using interviews (chapter 5). As previously mentioned, the first analysis relies upon analysing the data deduced from interviewing sessions applied in order to derive the main variables of place listed in chapter 6 using descriptive statistics.

Further analyses are conducted on the *context* using a number of maps and tables (chapter 7). Chapter 8 follows by cross-checking the earlier result, but on a larger sample of subjects, thus confirming the results. Thus the main problem relating to the context is here identified. Both chapters 7 and 8 mainly relate to the context and are therefore classified under *Contextual Analysis* within **table 0.1**.

Chapter 8 and 9 present the second analytical part as they are conducted on a larger sample of subjects through the analysing of the questionnaire. Chapter 9 is mainly concerned with

Human Perception, which endeavours to determine the dominant aspects of perception, behaviour and the general lifestyle of Cairenes. This result is also confirmed from the analysis of the interviews. These differences vary in perceptions and behaviours within the city, particularly along the waterfront. The results here further emphasise a problematic situation embodied in the interplay between public space as opposed to the private space. The results of this part in total reflect aspects of human perception and behaviour therefore reflecting the other objectives of the model.

Finally, Part Three interprets and accumulates the results in order to suggest alterations to the waterfront and public space, and is presented in chapter 10 and 11. This part contains a more general description of the main results concerning human perception of private and public spaces and the further configuration of the waterfront in relation to people's perceptions and varying behaviours. This part further attempts to determine a design framework originating from both theory and the deduced results in order to create the required compatibility between people and places along the waterfront.

The research, particularly within Part Two, constantly attempts to relate results that reflect to theory, context and human perception whenever necessary. This is as the orientation of the thesis contributes to these three main domains. Theory, within this case relates to the various paradigms of perception initially introduced and which further attempts to highlight the important aspects of the achieved model. The overall reflections to the three domains are found helpful in determining the required design framework within the final chapter of the research.

PART ONE

PART ONE

Introduction to Theory and Application

Part One is introduced within the thesis and contains three major steps that are embodied in chapters 1, 2 and 3 respectively. These chapters are organised in order to reach a more general level of understanding of psychological phenomena (see **fig 1.1**). The main goal at this stage was to determine a model of study, used as a tool for observing and understanding how Cairenes evaluate the waterfront area in Cairo. As different researchers have different viewpoints, Part One is therefore considered as the 'foundation' from which the researcher will examine the results of the case study. This foundation can also be considered as the stage, which underlies the researcher's background and bias towards analysing the results. Though **chapter 1** attempts to identify certain theoretical approaches relating to environmental evaluation, it is important to highlight that the choice of the model introduced in **chapter 3**, was made with relative reasoning to the theoretical stances within **chapter 1** and **chapter 2**. Furthermore, by attempting to use theoretical reasoning, this model is further modified within the final stage of **chapter 3**.

In summary, **chapter 1** introduces the theoretical review of the literature by introducing research earlier applied on evaluation and aesthetics. **Chapter 1** further highlights certain directions of the research paradigms and their differing orientations. This chapter attempts to introduce theoretical reasoning to the directions of the research introduced in **chapter 1**. This theoretical reasoning is further explained and described within **chapter 2,** which further determines particular areas of study, which are later carried on to **chapter 3**. Finally, **chapter 3** sets to determine the model of study that shall be used as a tool in interpreting the results within the case study, in order to apply and understand how Cairenes construe their urban waterfront.

Chapter 1

Research   paradigms

Chapter 2

Theoretical

Chapter 3
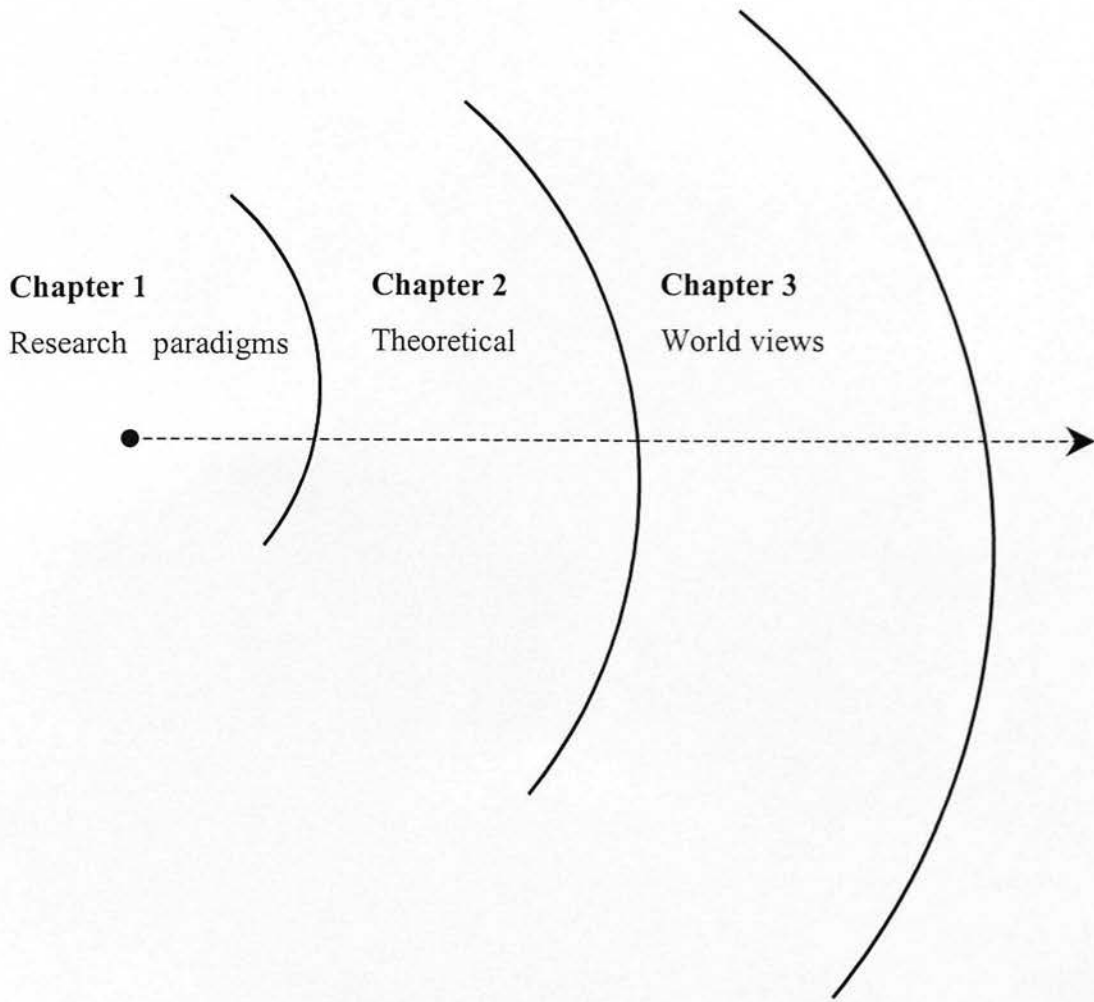
World views

Fig 1.1: Diagram showing the theoretical progression of the literature review, which starts from introducing the research paradigms applied on environmental evaluation to the world views at a more general level of phenomena observation.

CHAPTER 1

ORGANS OF ENVIRONMENTAL EVALUATION

PART ONE
(THEORY)

PART TWO
(CASE STUDY)

PART THREE
(CONCLUSION)

CHAPTER 1 — THEORETICAL REVIEW

CHAPTER 2 — THEORETICAL BUILDUP

CHAPTER 3 — MODEL

CHAPTER 4 — INTRODUCTION TO CASE STUDY

CHAPTER 5 — RESEARCH TECHNIQUE

CHAPTER 6 — DESCRIPTIVE ANALYSIS — Part One

CHAPTER 7 — CONTEXTUAL ANALYSIS

CHAPTER 8 — ANALYSIS OF HUMAN PERCEPTION — Part Two

CHAPTER 9

CHAPTER 10 — OVERVIEW OF RESULTS

CHAPTER 11 — CONCLUSION AND RECOMMENDATIONS

IDENTIFYING THE RESEARCH APPROACH

CREATING THE MODEL

RESEARCH TECHNIQUE

INTERVIEW ANALYSIS

QUESTIONNAIRE ANALYSIS

OVERALL RESEARCH METHODOLOGY AND PROCEDURE

EXAMINING THE RESEARCH FINDINGS

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PARADIGMS OF ENVIRONMENTAL EVALUATION

1.0 Introduction

The following part shall contain a review of literature related to place perception in order to identify the various research directions that shape the dominant principles underlying how people construe places. This chapter aims to review the attempts made in order to identify how people evaluate and judge places and to further set out a background for further elaboration upon the derived results from the case study. The following shall therefore give insights to the proposed scope of research area in relation to the following research approaches and to further understand the reasoning behind the chosen scope of research.

The proposed model of study is then later introduced for identifying and further classifying the past and contemporary attempts in determining place evaluation. This is implemented in order to introduce the prominent aspects of research suggested by within the field, which may by and large influence the nature of the theoretical course of evaluation and judgement. These factors largely vary and further point out the existence of numerous overlaps between these approaches. However, whether researchers are conscious or unconscious of this issue, our intention is to classify the various research approaches and group them for a better understanding of the proposed results presented in part two of the theses. It is also essential to point out that in some instances the terminology used may vary from author to author. Several terms may have been in some cases similar to each other but researchers give it different meanings, and in other cases the terms may be different but may, more or less, have a synonymous meaning. Therefore it was found necessary to highlight and explain some words and concepts from the point of view of the researcher, as shall be described within this chapter.

The classification of literature is important for the theoretical understanding of the

results of the research introduced within Part Two. The proposed classification together with the results will seek the compatibility and incompatibility of some of the approaches within the context of this research and in relation to place evaluation and judgement. One of the main benefits of this classification is to further view how much of the proposed literature is practically used and delivered by designers. The task in Part Three relates to this and is therefore directed to the analysis of peoples' construal of place, thus attempting to identify, for designers, the means for applying their proposals.

It must be highlighted that numerous researchers in the field have called for more integration of these approaches. Bourassa in his book *The Aesthetics of Landscape* (1991) attempts to identify three distinct levels of aesthetic experience, in which he labelled as the *biological, cultural* and *personal*. Similarly, Fenton, M. and Reser, J. (1988) summed up some of the general research approaches in environmental quality.

1.1 Environmental Vs. Landscape Evaluation

The introduction of the 'environment' / 'landscape' debate is found necessary in determining the general approach of the research. For the reasons stated below, it was found appropriate to use the term 'environment' rather than 'landscape' throughout the thesis. That is because environment may at first call for more inter-disciplinary approaches, as it prevents limitations exerted by the term 'landscape' that has constantly and solely been applied on natural contexts. Secondly, it facilitates research applied on more urban landscapes, interior spaces etc.

Evaluation and aesthetic judgement of the environment have been studied from various areas. They have been derived from studies conducted by planners, psychologists and geographers and have, in many cases, been applied to natural landscapes, thus using the natural landscapes as their main area for studying perception. In turn, landscapes have been used as a tool for determining the underlying forces that determine perceptual and cognitive processes. This area of research, usually termed as "Landscape Aesthetics" has commonly been used among researchers as a label for determining general aesthetics and environmental evaluations, mainly related to landscapes. Zube (1991) argues that the term environment is too general to describe issues at specific regions and at a local scale, as: "The term environment is used commonly to describe a wide range of physical spaces, from a single room in a building to the globe" (p.322). In contrast,

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further calls have been made for a trans-disciplinary approach, which integrates the social and behavioural sciences together with the environmental psychology for studying relations and transactions between humans and the environment. Ironically, it may have been that due to the wide-spread use of the term 'landscape' amongst geographers, that contributions to the development of research in aesthetics and evaluation has become limited, and thus denying the integration of other fields of study and researchers from different disciplines.

Bourassa (1988) mentioned the limitations made by philosophers in the field; "...many philosophers limit the scope of aesthetics to embrace only discrete objects of art" (p.24). He further shows his favour for the term 'landscape' because it refers to a perceived scene. In contrast, Hubbard (1994) introduces a different perspective by highlighting, the fact that the term 'Environmental Judgement' may span a wider range of issues, thus this term can broaden our view of understanding the various models that have been applied on landscapes. He further describes the disadvantages of the use of 'landscape' as follows:

> "...as landscape is functional and aesthetic, qualities cannot be abstracted without any consideration of these functional aspects. In many senses then, it may be preferred to refer to environmental rather than landscape aesthetics, as the term landscape has too many connotations of being visual, bounded and distant, experienced in a disinterested and disengaged manner." (pp.13-14.)

This would suggest that using the term "environment" may identify with more issues that configures a place such as the actual involvement of people into the ever changing social, ecological and cultural accumulative processes occurring and reoccurring within a place. These dimensions have usually been neglected together with the determination of a biologically based reasoning to aesthetic judgement that shall later be described. The attributes of the word 'landscape' are usually limited in its underlying visual connotations thus limiting the scope of study. This disintegrated manner by which research within the environment has undergone, shall be described in the models used in investigating environmental quality.

In summary, it is usually the case that those who call for the use of 'landscape' attempt to direct their studies towards landscapes and related visual attributes of perception. On

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the other hand the use of the term 'environment' is, without doubt a generalisation, but underlying this is the fact that it may aim for the call for a multi-disciplinary approach. This would include research and researchers from various areas that would help in the development of aesthetic perception and place evaluation. It would also avoid the limitations exerted on the field caused by the term 'landscape'.

1.2   Paradigms of Environmental Evaluation

The following paradigms may at times lie within the 'landscape' based body of study, but have been introduced in order to describe the different approaches to perception. They are also introduced in order to highlight the various research areas covered by these paradigms and their limitations, which would help determine the choice of the method of analysis that shall later be introduced.

Meanwhile, as has previously been mentioned, there are various research approaches attempting to discover attributes within the environment influencing judgement and perception of place. These approaches have separately been working on different theoretical grounds, using different techniques for determining a basis for predicting how the environment is evaluated. Research directed towards finding independent attributes affecting environmental perception, has not given the overall picture to how people construe places. These approaches have mainly been criticised for their lack of integration, thus leading numerous researchers for a call for a greater synthesis of the various methodologies and theoretical work. This has evidently been made clear in recent discussions on issues relating to evaluation (Fenton et al., 1988; Zube, 1991; Bourassa, S.C., 1991; Hubbard. P.J., 1994).

A cross comparison was found to be critical in the process of identifying the general theoretical basis for issues relating to perception and evaluation, and is therefore set forth in **table 1.1**. This comparison was illustrated to facilitate the understanding of the methodologies, later introduced. Following this comparison, a general description of the paradigms is introduced and the manner by which the research technique is applied is later described. This was introduced for further highlighting the limitations of each approach and their related research techniques.

1.2.1   Uzzel's Model Definition

Uzzel (1991) identified nine different models that are currently held in landscape and environmental evaluation. These models are later cross compared with Zube et al.'s (1982) four more generalised models, which intend to represent the different approaches in studies applied in the field of Environmental Psychology and Landscape Evaluation.

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The models presented by Uzzel (1991) are briefly described as follows:

1.2.1.A   Ecological Model

This relies on measuring objective physical qualities configuring the scene and depends upon expert judgements in order to determine aesthetic value. It focuses upon the type and amount of vegetation and water existing in the scene[1].

1.2.1.B   Aesthetic model

This relies on relationships between formal properties and landscape quality. The model also depends upon expert judgements in order to determine aesthetic value[2].

1.2.1.C   Psychophysical Model

This depends upon identifying mathematical relationships between the physical characteristics of landscapes (e.g. size, colour, or form) and the perceptual responses of human observers. Here, a single landscape response is related to a single objective feature in the environment[3].

1.2.1.D   Psychological Model

This considers the individual's responses and reactions to natural landscapes, thus measuring underlying psychological properties of people[4]. Uzzel suggests that it is more appropriate to name this model as a 'cognitive' model since it relies upon the, "..cognitive and affective reactions evoked by various landscapes, and the behavioural consequences." (Uzzel, D. 1991 p.5)

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[1] Reference to the Ecological model, see Daniel, T.C. and Vining, J. (1983).

[2] Reference to a study applied in the Aesthetic model see, Lowenthal, D. and Prince, H.C. (1965).

[3] For the relation of 'complexity' to preferences see, Wohlwill J. F. (1968).

[4] Research on the Psychological model, see study made by Kaplan, S., Kaplan, R. and Wendt, J.S. (1972).

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1.2.1.E   Phenomenological Model

In this model information is gathered by researchers from questionnaires in order to identify common experiences. Other geographers depend upon "...analysing literary regional and landscape character..." (Uzzel, D. 1991 p.6). Studies have concentrated upon written essays having a more subjective nature, mostly indicating that methods should direct more attention to the observer rather than to the landscape. They attempt to identify common experiences between individuals, which are shaped by their own perceptions, and the individuals' organisation of experience[5]. The methods of study have adopted Kelly's (1955) Personal Construct Theory (Fenton et al. 1988).

Uzzel (1991) further criticises these approaches because of the inconsistency with a theoretically based approach for evaluating landscapes. This is due to the fact that all the models have different advantages and limitations, which usually focus upon:

> "...visual assessment thereby omitting tactile, olfactory and auditory experiences, let alone social experiences or cultural associations, or induced actions and responses" (p.6).

Uzzel further suggests the four following other approaches that may differently deal with the shortcomings of the previous models.

1.2.1.F   Semiotics

Deals with descriptions and categorisations of cultures to explore meanings of the environment. Explorations have taken place to examine cultural change within Western cultures brought about through the medium of television programmes[6], advertisements[7], comic strips[8] and architecture[9].

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[5] Examples as such can be seen in Lowenthall D. (1972); Lowenthall, D. & Bowden, M.J, 1976 and Meinig, D.W. (1979)

[6] See Brunsdon, C. and Morely, D. (1978)

[7] See Williamson. J. (1978)

[8] See Dorfman, A. and Mattelart, A. (1971)

[9] See Jencks, C. (1977); Krampen, M. (1979); and Groat, L. (1979)

1.2.1.G   Social Representations

These are ideas, images and social reactions that develop in a society about certain phenomena, such as human behaviour[10] and health and illness[11]. This approach examines the means of how certain concepts are communicated to people. Social representations can be explored through surveys and interviews or by analysing the contemporary media.

1.2.1.H   Functional Use

Deals with analyses applied on the environment in terms of the value of needs of people or the value of affordance of an environment. Meanings of places refer to the activities that occur there and how appropriate they are to the place[12]. Various types of involvement and activities may largely be determined by the different functions of places. Therefore 'Functional Use' research, like the 'Experiential Paradigm' also attempts to determine preconceived actions that people may get involved in, within a particular place.

1.2.1.I   Action Research

This approach deals with issues that are concerned with changes and problems resultant in the global environment such as industrial pollution, soil erosion and the depletion of the ozone layer. It is concerned with researching residents' perceptions and attitudes to the environment in order to put forward into action for further intervention into an environmental problem.

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[10] See Moscovici, S. (1976)

[11] See Herzlich, C. (1973)

[12] See Gibson, J. J. (1979) on his theory of 'affordances'; which states that the environment can be seen as offering affordances in terms of people's needs.

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1.2.2   Zube et al.'s Model Definition

However, other reviews in the research literature made by Zube et al. (1982), Daniel & Vining (1983) and Porteous (1983) seem to cover the above paradigms. They have identified four more general paradigms of research in landscape perception; 'Expert', 'Psychophysical', 'Cognitive' and the 'Experiential' paradigms. As shall later be explained, the 'Cognitive paradigm' seems to be differently described by Bourassa (1991) in comparison to both Zube et al. (1982) and Uzzel (1991). As, both the 'Semiotics' and the 'Social Representation' models explore social and cultural dimensions, resultant from acquired meanings they may therefore, also be considered as cognitive paradigms as they pertain to more conscious psychological processes. This issue shall later be discussed in more detail. Zube et al's descriptions of the research areas are identified as follows;

1.2.2.A   Expert Paradigm

This relies on perceptions made by the professionals in landscape architecture, planning and geography to evaluate landscape beauty or scenic quality. The evaluative descriptions made by these experts are usually based on their perspectives and descriptions and fall into principles of art, design and ecology. This paradigm relates to the previously mentioned 'Ecological' and 'Aesthetic' model due to the fact that both these models depend upon expert judgement.

1.2.2.B   Psychophysical Paradigm

This paradigm deals with the assessment of landscape quality by testing the responses of the general public to physical measures of the landscape as a stimulus-response model. Scenic beauty is quantitatively measured on physical landscape elements such as vegetation, topography and water. It is primarily intended to predict statistical models of landscape beauty (Zube 1991), both the Expert and the Psychophysical models are concerned with landscape contexts such as recreational rivers, ski resorts and scenic highways (Sancar 1985).

1.2.2.C   Cognitive Paradigm

Zube et al. (1982) described the cognitive paradigm as involving meanings and information received from the observer's "... past experience future expectation, and socio-cultural conditioning..." (p8). He further labels the psychological factors such as, mystery, complexity, legibility, refuge etc.[13] as being cognitively determined.

However, R. & S. Kaplan and Bourassa consider them as factors being cross-culturally shared and are therefore considered as genetically inherited. Bourassa, in his book *The Aesthetics of Landscape* (1991) proposes a paradigm of landscape aesthetics that is composed of three modes of aesthetic experience: Biological Laws; Cultural Rules; and Personal Strategies. Bourassa described the cross culturally shared factors as 'Biological Laws', and therefore does not subscribe to cognitive processes that are more culturally determined. Zube et al's (1982) description of the 'cognitive paradigm' further denies the meaning of 'cognition' as a more learnt behavioural process occurring within a person's life span.

Zube (1991) mentions that 'Information processing' set forth by R. & S. Kaplan (1979) are usually used as independent variables for place evaluation. The problem here lies in the fact that the cognitive paradigm "....attempts to identify meanings and values that are associated with landscapes" (Zube 1991, p.323). As the Psychological model emphasises upon the mental processes of perception (Sancar, 1985), Zube (1991) like Uzzel (1991) refer to the Psychological model as a cognitive paradigm. They further claim that it is associated with meanings and values that are gained through education, professional roles, individual history and the cultural and social background of the individual (Zube et al., 1982). This further contradicts Bourassa's (1991) description of these psychological factors, which were categorised by Bourassa within his 'Biological Laws', implying that they do not contain culturally learnt meanings or values.

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[13] Information Processing Variables:

Mystery: is the extent of gaining more information while further proceeding into the scene.

Complexity: is the amount of information a scene can offer in order to keep one interested or occupied.

Legibility: is described as the ability to predict that an environment can keep you orientated whilst exploring and without getting lost.

Coherence: is identified as the capacity to predict within the scene i.e. the ease in which the information in the scene can be organised.

Here Zube (1991) attempts to claim that the cognitive model also associates with meanings and values. However, it therefore becomes difficult to conclude, the factors formulating the acquisition of these meanings and values. The acquired meanings and values that are passed down from generation to generation configuring a socio-cultural dimension are in fact culturally acquired and often configure a set of values that affect a group's perception. Shared experiences of a group are culturally acquired and are often result from group interaction within their environment, which shall later be elaborated in **chapter 2**. These sets of values vary through cultures and differ from the values and meanings proposed by Zube (1991) within the 'cognitive paradigm' which presents variables that are similar cross culturally.

These 'Information processing' variables are in fact somewhat contradictory to Bourassa's (1991) assessment of aesthetics. Bourassa refers to Kaplan's Information processing variables, as only some of the factors contributing to a biological basis of aesthetics. Thus these factors are separated from learned cognitive patterns which pertain to cultural responses.

Knowing that meanings and values result from cognitive processes, thus 'Information processing' variables rely on cognitive processes, which are cross-culturally similar (Kaplan, S. 1987) and are, in fact, different from the socio-cultural factors that are known to differ cross-culturally. Therefore Zube et al's (1982) model indicates that both the psychophysical and the cognitive are integrated into the same paradigm. This leads to the suggestion that both the biological and cultural basis for landscape aesthetics have been referred to within the 'psychological' or 'cognitive' paradigms (see **table 1.1**).

This fact is found by the researcher to be rather controversial. This issue may highlight either a different definition to cognition, or a difference among researchers in determining whether 'Information processing' variables are biologically or cognitively determined. Researchers approaching the study of place evaluation from a psychological or cognitive stance may make their tasks less difficult by identifying their approach on either a biological or a cultural basis. This follows Bourassa (1991) who argues that distinguishing between the biological and the cultural makes sense, "....due to their distinct developmental origins and processes", he further states that "The approach would be useful analytically even if all behaviour involved some amalgam of the

biological and the cultural." (p.63)

Bourassa (1988) in his introduction to the tripartite theory of landscape aesthetics that intends to separate the aspects of aesthetics which are shared with other animals 'Biological Laws', together with the aspects which are solely human 'Cultural Rules' and further determined by individual's 'Personal Strategies'. This paradigm was based on a more integrative approach that would "encompass the full range of aesthetic experiences and behaviour, including both aspects which are uniquely human and those which are not" (p.244).

Bourassa (1991) further distinguishes between the innate and learned behaviour where the former refers to the "biological mode of experience" and the latter is a product of the "cultural mode of experience". Uzzel (1991) also proposed that research within 'Semiotics' address aspects of meaning, as earlier mentioned, which was neglected by earlier models. Furthermore Bourassa's (1991) proposition highlighted that the paradigm deals with cultural rules that are socially transmitted and "…are manifested in the activities of groups of people rather than single individuals" (p.90).

In general Bourassa's reference to behaviour and judgement was accorded with the three levels of behaviour, 'biological', 'cultural', and 'personal', and is based upon the assumption that there is a dual perceptual system in the human brain. The more primitive parts of the brain function upon innate patterns of emotional behaviour, which responds to stimuli. These primitive responses have been suggested to respond to a biological basis for judgement and behaviour. Therefore, Bourassa had categorised 'Information processing' variables as responding to the more primitive responses of the brain. On the other hand there is also a perceptual system that is uniquely human and is based on learned cognitive patterns of behaviour rather than emotional responses, which is based upon culture and social learning.

As meanings are not globally shared, therefore it was found important for the sequence of the thesis to first of all, classify Zube et al's 'Cognitive paradigm' from his description as being based more on experience which relates to research applied in 'Semiotics', 'Social Representations' and 'Action Research'. However, at the same time, it was found equally important to highlight the various misunderstandings that may occur between authors within this field of study.

The basis for Zube et al's suggested 'Cognitive paradigm' **(table 1.1),** has been introduced in order to cross compare it with the other paradigms presented by Uzzel (1990) which are of similar descriptions. The table shows that Zube's cognitive paradigm contains a different interpretation to cognitive paradigms, it also shows an overview of the research approaches. Secondly, the table stresses the theoretical and research importance of the various interpretations of issues as an outcome of the word 'cognition'.

The psychological model and in particular, the information processing variables, have been mentioned within a cognitive paradigm (Zube et al., 1982; Uzzel, 1991; Kaplan 1987; Kaplan & Kaplan 1978), and at the same time genetically inherited (Bourassa, 1988). It is therefore possible to conclude that the information processing variables, are a result of an inherited cognitive perceptual system, which exists within the biological nature of humans. This statement would imply that Zube and Uzzel's understanding of the Psychological Paradigm might be more of an innate cognitive process that drives humans towards seeking more information within a scene. It further implies that these cognitive processes lie within all humans and are, therefore, genetically inherited. Whether this matter is true or not, it is definitely highly debatable. Though this issue may further need investigation, it is possible to conclude that the cognitive paradigm may cover much research applied. It is therefore deduced here that it is inappropriate to label a paradigm as being 'cognitive' for its overlapping translations by the various researchers.

Uzzel, D.L. (1991)

Zube, E., Sell J., &Taylor J. (1982)

Four Main Research Approaches

-More Objective
-Testing Similarities

ECOLOGICAL MODEL

FORMAL AESTHETICS MODEL

EXPERT PARADIGM

FORMAL AESTHETICS APPROACH

PSYCHO-PHYSICAL MODEL

PSYCHO-PHYSICAL PARADIGM

Bourassa, S.C. (1991)

PSYCHOLOGICAL MODEL

BIOLOGICAL APPROACH

PHENOMENOLOGICAL MODEL

COGNITIVE PARADIGM

Semiotics
Social Representations
Action Research

SOCIO-CULTURAL APPROACH

FUNCTIONAL USE

EXPERIENTIAL PARADIGM

PARTICIPATORY APRROACH

-More Subjective
-Testing Differences

Table 1.1: Comparison between authors in identifying main research approaches.

1.2.2.D   Experiential Paradigm

Finally the Experiential paradigm consists of a more dynamic relationship with reference to human actions and types of involvement within places, therefore it is at times labelled 'participatory'. The Experiential paradigm reflects upon the interactions between people and landscapes. Similar to Semiotics it addresses cultural changes and changes within people's perception. It is also similar to Action Research in that addresses changes within the environment. It deals with the understanding of peoples' transactions within environments, making it therefore quite compatible with the Functional Use paradigm.

This paradigm further describes meanings that are products of particular activities engaged by people. It deals with the actual participation of people within a particular setting and it incorporates attributes of change within humans and the environment. Thus the experiential paradigm addresses aspects of the environment that deal with cultural and environmental changes, and human transactions within a particular setting. This paradigm is more subjective than the earlier models as it studies the actual perception of the individual. As this paradigm acknowledges aspects of change within environments and human behaviour, it is therefore considered rather different than Functional Use and Action Research.

1.3 Main Theoretical Categorisation of the Paradigms

Bourassa (1991), in his tripartite model, did not mention a more interactive mode of judgement although his discussion mentions attributes of judgement gained through human evolutionary development, which are genetically acquired. A personal mode of experience had only been represented in relation to people's judgements and to the individual's lifetime experience.

The previous cross comparisons of paradigms of landscape aesthetics suggested by Bourassa, Uzzel, and Zube et al. define four criteria by which landscape aesthetics is described. Due to the variety of definitions and the differences in criteria proposed for defining each model, the relevant understanding of the proposed models have briefly been explained. This is achieved through suggesting a model that should integrate relatively similar models such as Uzzel's 'Ecological' and 'Formal Aesthetics', which correlate to Zube et al.'s 'Expert model'. It also proposes an integration of Zube et al.'s (1982) 'Psychological model' with Bourassa's 'Biological rules'. Bourassa's Cultural laws and Uzzel's 'Semiotics' and 'Phenomenological' approaches that deal with the social and cultural dimensions are important factors mentioned by Zube et al. (1982) within the 'psychological' or 'cognitive' paradigm. **Table 1.1** shows the different models proposed by both Uzzel (1991) and Zube et al. (1982) and further indicates the four main models (far right) induced by the help from two of Bourassa's tripartite theory. It is important to indicate here that in reality, these approaches are not so clearly defined as depicted in the table, as research may cross various disciplinary boundaries. It is also important to note that the approaches listed within **table 1.1** are grouped to the best of the researcher's knowledge and are based upon the descriptions made by the three authors mentioned within the table.

In conclusion there are four different research approaches for identifying attributes for determining the quality of the environment (see far right of **table 1.1**) that deal with behaviour, meanings and values as well as evaluation. These have basically been categorised into four main paradigms. Firstly, research attempting to measure the physical factors of landscape such as, form, colour and texture (Formal Aesthetics Approach). Secondly, testing attributes of form that may cause levels of arousal such as,

mystery, complexity, prospect, and refuge (Biological Approach). Thirdly, judging places for their symbolic attributes inherent from within the social and cultural structure of a society (Socio-cultural Approach). Finally, dealing with qualities of a place relating to the type of involvement and experience that people have when interacting in that place (Participatory Approach). The four that have been identified are simultaneously described as paradigms dealing with 'Formal Aesthetics', 'Biological', 'Socio-cultural' and finally 'Participatory' based judgements (see **table 1.2**)

Furthermore, the above identify a dual perceptual system, which suggests that personal involvement and interactions within a place (the Experiential paradigm) influences the perceptual processes. This paradigm differs from the others in that it is based upon the individual's experiences within a place. Thus the proposed paradigms seem to act on three levels of experience ranging from a study of similarities to a study of dissimilarities. Therefore, from a biological, cultural and a personal mode of judgement that identifies the similarities and differences among people, this actually confirms Bourassa's tripartite theory.

In conclusion the above discussion highlights the nature of theory and its impact in determining the basis for evaluation. One of the main observations drawn from the above discussion is the apparent existence of a main direction in research models that attempts to come closer to examining more of the observer dimension, rather than expert judgements. These dimensions reach the point of examining the actual interactions of people within their surrounding environment, hence taking a more subjective nature than the earlier models. Research in environmental psychology may however be carried out within a political, economic and a social context. These contexts may differ highly from formal landscape evaluation, to ecological issues to media analysis and psychological studies on human behaviour. As the following discussion will deduce, the research nature of these models in many instances approaches the area of environmental psychology.

It is also important here to highlight the existence of differences between the models and their fragmented nature of research areas, which will be described later. These differences, as earlier mentioned, are in demand of an interdisciplinary approach that attempts to link the social to the behavioural sciences in order to understand the nature

of human-environment relations. The research techniques applied in this field are described below in order to further elaborate upon the nature of research, its limitations and the theoretical basis for individual research approaches set forth. Therefore, four main research areas chosen from the above have been presented: research applied within a Formal aesthetics approach; Biological approach; Socio-cultural approach; and research within a Participatory approach. These approaches shall be described in correlation to related theories that shall also be introduced.

	FORMAL AESTHETICS APPROACH	BIOLOGICAL APPROACH	SOCIO-CULTURAL APPROACH	PARTICIPATORY APPROACH
Theoretical Background	- Expert Model. - Psychophysical Model	- Information Processing Theory. - Evolutionary Theory. - Psychological Paradigm.	- Semiotics. - Symbolism	- Experiential Paradigm
Attributes	- Measuring Physical attributes.	- Genetically inherited.	- Acquired through learning within the lifetime.	- Acquired through human involvement within a place.
Scope of study	- Examines the objective characteristics of the environment (eg. form, size, colour). - Deals with aesthetics in a disengaged fashion	- Examines perceived characteristics of the environment (eg. mystery, complexity, prospect and refuge). - More objective (mostly addresses formal qualities). - Sensory factors. - Searching for similarities - Deals with physical form	- Examines taught social and cultural experiences. - Searches for differences. - Deals with meanings. - Subjective (addresses human factors). - Non-sensory.	- Examines people's interactions with places. - More Subjective (Identifies with the purposes and intentions of people).

Table 1.2: A comparative description of the research approaches with their theoretical background and scopes of study.

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1.4 Research Techniques

The following discussion shall attempt to summarise the four areas of study (far right **table 1.1**) to give insights to each area of study in terms of the method of research and area of application. The aim is to further define an appropriate research approach for later application and to choose a method for investigating how people evaluate places. This is in order to create a model used as a tool in analysing the results of the preliminary stages of the case study that shall later be introduced.

1.4.1 Formal Aesthetics Research

This is one of the earliest research techniques applied on landscape perception, which depends upon quantifying landscape variables for predicting aesthetic quality (Shafer, Hamilton & Schmidt, 1969). It involves the measurement of objects and spaces in actual environments and may use photographs of a particular scene within the landscape (Calvin et al. 1972). Underlying the research is the assumption that a direct relationship exists between objective properties in the environment and perceived aesthetic quality. Most of the scenes are chosen from natural landscapes. This model is usually labelled as being objective, where objective refers to the quantification of environmental variables through a yardstick, and is therefore different to the perceptual and cognitive approaches. Thus the characteristics of the stimulus provided by environment settings are independently defined from the perceiving individuals (Barker 1965; Brunswick 1956; Wohlwill 1973; Fenton et al. 1988). This would suggest that these models have a more objective nature, as the individual's perception is not considered.

Here, researchers aim at investigating factors such as "shape and colours and lines and their patterns" (Carlson, 1977 p.136), in other words, the formal qualities of the landscape. Techniques were used by Zube, Pitt and Anderson (1974) for quantifying physical characteristics of scenes such as; colour, percentage of covering trees and vegetation, mean slope distribution, amount of surface water and sky existing in the scene. Studies have also been applied for measuring physical aspects of the landscape such as the amount of topographic texture obtained by finding the contour line with the greatest number of crenulations, where, "..the number of crenulations are counted and the sum is divided by the area of view (in square miles) to yield a topographic texture measurement" (Zube et al., 1974, p.40). Thus, as a psychophysical model, they attempt

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to "determine mathematical relationships between physical characteristics of the landscape and perceptual judgements of human observers" (Daniel & Vining, 1983, p.56).

In this model, aesthetic judgement is a simple reflex model which is mediated by a simple stimulus-response cycle (Hubbard, 1994). This approach has been criticised for its lack of subjectivity and for its empirical, quantitative nature, as it relies solely on predicting formal qualities. Expert paradigms rely upon the judgements of highly skilled and trained observers "...in art and design, ecology or in resource management fields..." (Zube et al., 1982, p.8).

This perspective namely 'formal aesthetics' has been criticised by Bourassa (1991) for its emphasis on the physical aspects of form and not content. This has been a product of the quantitative techniques used in measuring these formal variables that usually neglect other important dimensions which influence place perception. Studies that relate perceived aesthetic qualities to objective characteristics suffer in the manner used to select the physical attributes and the nature of the criteria chosen (R. Kaplan, 1985). Thus such factors are considered by the researcher as the most common factors of the landscape which affects the nature of peoples' judgements.

It is also important to highlight that, by nature, these factors are amenable to quantification (Fenton et al., 1988). Kroh, D.P. & Gimblett, R.H. (1992) claimed that these analysis and classification techniques do not represent all the elements in the landscape. Such methods research formal qualities at the expense of various other senses experienced in a place (eg. noise, climate and meaning), which influence peoples' perceptions to place.

1.4.2   Biological Approach Research

This approach relates to 'Information processing' variables such as, biological diversity, 'mystery' and 'prospect-refuge' by researchers such as Ulrich (1981). Research in landscape aesthetics has often been referred to in objective or perceptual terms and constructs of the environment (Boulding, 1965; Ittelson, 1976; Klausner, 1971; Wapner, Kaplan, & Cohen, 1973). This is similar to formal aesthetics, as it tests for similarities between people but differs from it, as the biological model is based more upon the

perception of respondents rather than from experts. The perceptual approach asserts that although there is an existence of an objective external environment, it is the individual's perceptions and construct of the environment that determines aesthetic value (Fenton et al. 1988).

Recent research in landscape aesthetics has over emphasised the influence of objective variables derived from the setting, where these variables have become studied in isolation from the perceiving and cognitive individual (Fenton et al., 1988). It becomes evident that researchers using these techniques in order to identify formal variables fall into potential misconceptions, as their research may neglect other external factors that may also influence judgement, to the extent that it disregards the formal variables. This is due to the nature of their choice of technique and presentation of two-dimensional pictures to a group of respondents, a method that eliminates experienced variables. Thus studies that rely on photographs to imitate a multi-dimensional experience, distort judgement (Pocock, 1982). Since judgements are also influenced by variables such as values, beliefs and daily experiences, such methods neither recognise nor test for these factors, therefore their generalised conclusions are unreliable as sole predictors of evaluation.

1.4.3   Research on 'Information Processing Theory'

Psychological models asses landscape aesthetics through testing the public's evaluations of certain criteria put forward by the researcher. Kaplan, S. (1987) mentions that research into environmental aesthetics suggests a biological substrate that underlies people's preferences, which also incorporates an evolutionary theoretical perspective relating to aesthetics. This evolutionary perspective assumes that, "...not all stimuli are equal, that some stimuli that are of functional importance to the organism and will have special affective properties associated with them." (Kaplan 1987, p.5).

Research made by Kaplan et al. (1972) often concluded that natural scenes were preferred than built environment scenes. The natural scenes contained a large range of preferences and thus two kinds of preferred scenes were predicted, which "...either contained a trail that disappeared around a bend or they depicted a brightly lit clearing partially obscured from view by intervening foliage." (Kaplan, 1987, p.8). Both scenes promised more information being gained by moving deeper into the setting and were therefore labelled 'mystery'. Thus this development based on the acquisition of more and new information by going deeper into the field was eventually labelled as 'Information Processing Theory'. This 'information seeking' approach incorporates two cognitive processes, understanding and making sense of the environment, and the further exploration and being attracted towards sources of additional information. This approach was mainly based upon variables previously mentioned such as mystery, complexity, legibility and coherence[14]. Whilst mystery leads people to further explore, legibility deals with being able to predict and keep orientated as one moves within a place (Kaplan, S. 1987), thus maintaining comprehension of a place.

Ulrich (1977) in a study designed to develop a model of visual landscape preference, suggested that mystery becomes inversely related to preference when the viewer judges that acquiring more knowledge will threaten or determine higher risk to the subject. Coherence, like legibility, promotes the understanding of the scene. Complexity is the characteristic that is immediately apparent and, like mystery, encourages further exploration into the scene. Together with water and foliage these landscape factors,

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[14] Ibid.

which are seen as to influence human perception, are named as 'primary qualities'. Empirical studies by the Kaplan and colleagues inferred that coherence and complexity seemed to be positive factors affecting preference. Greater legibility and mystery inherent in a scene gave higher preferences.

1.4.3.A   Information Processing Factors and the Theory of Evolution

Early work also pointed out attributes that seemed to have a special effect on preferences, namely 'primary landscape qualities' such as water and foliage (S. Kaplan, 1987). The accumulation of findings on preferences suggested parallels with environmental circumstances under which humans evolved[15], thus leading research to an evolutionary theory for interpreting preferences towards the environment (S. Kaplan, 1987). Kaplan, S. (1988) pointed out the objectives of an evolutionary analysis as it:

> "...provides a basis for expecting an underlying commonality in preference across individuals: a commonality that has, in fact, been found in research on environmental preference."(p.63)

This suggests that the research is directed towards investigating cross-cultural similarities (see **table 1.1**). Kaplan S. and Kaplan R., (1979) based their theory on the inheritance of experience being passed on through evolution. This suggests that there may be an inherent structure, which "constitutes the basis by which the environment is interpreted" (p.8) and which also generates and influences behaviour. Thus, in their book *Humanscape,* their definition of experience is not that of the individual during his lifetime, but that which suggests a genetic inheritance in the brain structure of human beings. This inheritance is explained as that which is a result from evolving adaptation processes of humans to certain environments that were geared towards survival. Therefore, their basic argument was that environments that facilitate the acquisition of knowledge would be preferred because of their amenability to help in the adaptive processes essential to human survival and evolution.

Another influential source in this area was Jay Appleton's book *The Experience of Landscape* (1975) proposing a biological theory consisting of two main components,

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[15] Environmental indicators specifically favourable to human survival.

'prospect' and 'refuge'. Prospect refers to having a grand view of the landscape, thus referring to vantage points from which one can openly see into the distance. Refuge referring to have a place to hide safely and to see without being seen, thus referring to potential hiding places. Woodcock's (1982) empirical investigation of prospect shows that views from a vantage-point positively relate to preference. On the other hand, refuge being the view from within a hiding place negatively relates to preference. However, Appleton argues that "the ability to see without being seen" is an inherent desire amongst all of us. Prospect and Refuge are congruent with information processing theory that asserts that:

"...human landscape preferences are concerned with information, and more particularly, with the gathering of information on the one hand and the danger of being at an informational disadvantage on the other". (S.Kaplan,1987 p.18)

Appleton's theory of aesthetics heavily relies on Dewey et al.'s (1949) assertion that aesthetic pleasure is derived from satisfying basic drives, which are similar to both man and animals. These drives are basically needed for the purpose of survival, such as safety and protection drives. Appleton's (1975) view was that:

"...aesthetic satisfaction, experienced in the contemplation of landscape, stems from the spontaneous perception of landscape features which, in their shapes, colours, spatial arrangements and other visual attributes, act as sign-stimuli indicative of environmental conditions favourable to survival, whether they really are favourable or not. This proposition we can call habitat theory." (p.69)

Bourassa (1988) asserts that the philosopher John Dewey is not responsible for divorcing aesthetics from the rest of experience and he suggests that aesthetics is a part of everyday experience. What Dewey suggests is the biological basis for aesthetics regarding certain aesthetic responses to natural scenery which people have in common. Dewey describes beauty as an emotional characteristic of aesthetic quality and should not be used as an analytic term for testing the quality of any artistic subject, a role to which the theme of aesthetics has conventionally been assigned.

Bourassa (1991) asserts that Appleton's prospect-refuge described above can not be a sole predictor of environmental preference, it can only explain part of the biological basis for landscape aesthetics. He further asserts that Information processing theory

does not shape the whole of the biological basis influencing aesthetics. Thus biological theory being the sole predictor of people's judgement to environmental aesthetics becomes an unreasonable assumption.

Ulrich (1977) applied a model in order to explore preference data obtained from groups of American and Swedish subjects and suggested that;

> "..much previous work on aesthetic preference for landscapes has overstated the importance of culture, and neglected the role of informational determinants". (p.279)

Ulrich further claims that evolutionary history has left its mark on peoples' perceptions and argues that landscape preference cannot solely be explained in cultural terms. This would point out that whether the researcher comes from a biological or a cultural based research approach, there is a definite agreement among researchers that one or the other cannot solely determine preference. This calls for a more integrative theoretical reasoning, which would embody the various approaches.

1.4.4 Socio-Cultural Approach

Ulrich (1977) claims that there has been emphasis on works in the recent decades directed to culture and learning determinants as determinants of landscape preference. He thus emphasises similarities existing between people rather than differences and further claims that "..similarities across cultures in terms of perception and cognition are much more impressive than the differences" (p.11).

Many researchers have been undermining either the culturally or biologically based research. This has been an evident issue in the 'landscape aesthetics' debate and has shown many idiosyncrasies for applying a theoretical basis for aesthetics.

> "...aesthetic preferences should not be assumed to be either biological or cultural preferences. What distinguishes cultural preferences is the fact that they are transmitted socially; if transmission occurs socially, then preference is culturally-based". (Bourassa, 1991 p.90)

The transmission of culture can be embodied through means of communication such as language, behaviour and group symbolic systems. These, phenomena are shared within a symbolic coding system of a group and aims at preserving group identity. These symbols may be represented in associations with natural forms or through the creation of artefacts. In either case, a commonly reached conclusion in discussions of cultural and social values is that these symbols are representational of meanings associated and shared among a group. Frequently we find that each culture possesses a vocabulary of forms that are preserved in order to stabilise the identity of the culture. It has often been argued in design that the basis for enriching a cultural code is through involving designs with the existing ecological and climatic conditions of a place.

> "If architects are sensitive to climatic and ecological conditions and hidden intentions of people, they can evolve original and radical solutions for architecture and for urban design which are congenial to a culture, and which can even contribute to the creation and enrichment of a new culture." (Nagashima, K. 19 p.98)

Culture is defined by Rapoport, A. (1980), as a way of life representing a group, or as a symbolic system consisting of shared meanings (Bourassa, S. 1991). It can also be defined as "...cognitive schemata transmitted through symbolic codes..." or as "...a set of adaptive strategies for survival related to ecology and resources." (Bourassa, S. 1991, p.9). Furthermore a cultural group will sustain a symbolic landscape for self-preservation where the role of cultural rules is to define the symbolic meanings within the landscape (Bourassa, S.1991).

As a diversity of environments exists, cultural responses to the inherent ecological systems within a certain place may widely vary. This would suggest a behavioural correspondence to biological diversity. Thus resulting in cross-cultural differences in lifestyle, hence, cultural laws and rules. Our concern later on in the thesis is to identify the basic source of cultural differentiation as related to the proposed case study, and in this case it deals with both the adaptive strategies of a group within a certain environment and its resources.

In cross cultural studies, cultural groups can be differentiated in terms of professional / non-professional groups, as studies applied by Kaplan, R. (1973) by comparing

preference ratings between students in architecture and landscape architecture with students in non-design fields. The subjects were asked to rate scenes falling into three categories: (1) natural scenes, (2) buildings within nature, and (3) building complexes. In conclusion there was strong evidence of differences among preferences resultant from differences in areas of interest.

In the professional/non-professional search for differences Groat, L. (1982) showed 24 scenes of buildings ranging from Post-Modern to Modern buildings and testing the responses of 20 architects and 20 accountants. Results showed different sets of criteria and codes for evaluating buildings used by accountants and architects. Hubbard (1996) also investigated differences in architectural interpretations between planners, planning students and public respondents and suggested that;

> "... individual variations in environmental preference do not come about (as is often assumed) because of differences in cognitive competence, but rather because of social regulations which intervene in common (or shared) knowledge structures" (p.90).

Groups may also be differentiated according to nationality, this example has been applied by another study set forth by Yang, B. and Brown, T. (1992). This study was an attempt to compare cross-cultural visual preferences between a Korean group and a Western tourist group to scenes of Korean, Western and Japanese landscapes. The authors concluded;

> "It was found that regardless of cultural differences, both Japanese landscape style and the landscape element water were most preferred by both Korean and Western tourists. For the Koreans, Western landscape style was more preferred than their own Korean landscape style whereas Korean landscape style is more preferred by Western tourists. The results point to both landscape style and landscape elements as the influencing factors on landscape preferences, regardless of cultural differences, and there are both differences and similarities in preferences between Korean and Western groups." (p.471)

From the above example, it is also important to note that familiarity as a dimension may influence peoples' judgements to a place. The above research approach is evidently

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different from the previously evolutionary based paradigm, as it deals with adaptation of a groups lifestyle within a specific environment. Similar studies attempt in identifying the transmission of values and through enculturation (Rapoport, A. 1980).

The general study of socio-cultural aspects of place perception deals with variations between cultural groups unlike the biologically based approach that deals with similarities. Thus it specifies aesthetic judgement to places at a local level within a specific environment. Rapoport, A. (1980) explains how people react to an environment conveying meanings relative to a specific society;

> "When settings provide physical cues, and encode the ideas implicit in the situation, they become a useful mnemonic, they reinforce behaviour by reminding people how to act, how to behave, what is expected of them; they also provide props supportive elements appropriate to the situations" (p.16)

The basic questions asked within this area are: Which built environment/habitats are appropriate and/or inappropriate for certain types of cultures. What considerations should designers of environments take on board from a socio-cultural perspective? Which designed settings are relevant to a specific society, their behaviour, and values? Socio-cultural perspectives in evaluating places mainly target specific environments involving the behaviour of a culture and their interactions with a related spatial organisation.

1.4.5   Participatory Approaches

Canter (1977) proposes a theory of place that would describe and would help in our understanding of "... the nature of conceptual systems of places" (p.157). This theory was meant to identify the constituents that form places thus indicating that places are fully identified only when we know: 1. The behaviour associated with or to be anticipated in a given location, in other words identifying the activities held at a certain place; 2. the physical attributes of the setting; and 3. the conceptions or descriptions that people know of, the behaviour related to the physical environment. The physical attributes of places suggested by Canter are different from those pertaining to 'formal aesthetics' mentioned earlier in this chapter. Canter suggests a study of the relationships between physical attributes and psychological or behavioural processes which facilitate the identification of places.

1.4.5.A   Research Applied within Participatory Approaches

Finally the experiential paradigm attempts to understand interactions of people in the environment which are developed over time (Sancar, 1985). Here, they are a product of transactions that occur and shape social groups, humans, and landscapes (Zube, 1991). It deals with the individual's participation within a place rather than the experience of a cultural group within an environment.

The experiential paradigm suggests "…that the environment is used and experienced rather than simply looked at" (Canter, 1983. p.660). This suggests that people have certain objectives for being in different places, thus the intentions of people affect their judgement and understanding of the related environment. It is therefore important to classify the objectives of people within places. Canter further suggested that we must deal with 'action' and 'place' instead of 'environment' and 'behaviour', since "..actions integrate conscious objectives" (Canter, D. et al. 1988 p.4). This would suggest that a person's action is a result of a particular purpose directed towards a certain goal. He further argues that the individuals' actions are structured through the role in which the individual is part of.

"Places are not only locations. They are categorisations of experience. They are

differentiations made by an individual in relation to possible acts to which that person may aspire" (Canter et al. 1988 p.8).

This would suggest that roles hold certain dominant objectives recognised by the individual. Thus this proposed paradigm, generally attempts to look for the 'rules' that may guide human actions and their objectives. This would imply that there is a need to search for the activities that would take place in a specific context, in addition to the guiding rules that would guide those actions.

Canters' (1984) focus of study was in representing a person/place interaction view that leads to explore transactional processes, where he emphasises the need to understand the qualities that places require for particular activities and goals. Thus, place structure and organisation should be integrated with people's relationships within different places. Canter further argues that person/place studies would recognise both symbolic and representational components that would reflect the actions and role relationships.

Similar to Canters' argument, Zube (1991) mentioned that the experiential paradigm comprises people and landscapes in dynamic transactions and that the paradigm incorporated human behaviour, meanings, values and preferences. Furthermore, Uzzel (1991), in his comparison between theoretical approaches to landscape perception concluded that we need a theory that addresses both "... individual and social action and intention and which see person-environment relations in transactional and goal-directed ways" (p.9).

From the above it is observed that the experiential paradigm goes beyond the level of mere cognition and perception and beyond the search for independent dimensions. It goes further to include both the spatial (physical) and the social factors of a given place (Canter, 1983) and their behavioural consequences (Canter, 1988). Its main suggestion is that environments restrict certain activities, which thus "...require alternative modes of behaviour in order to achieve a satisfactory balance in formation" (Canter et al., 1975. p.162).

1.5 Summary

Table 1.2 earlier attempted to summarise the previously discussed theoretical approaches. Its importance stems from the fact that it draws comparisons between the four basic approaches in order to further our understanding of the various models. The table shows the main streams of research and their theoretical background.

In some cases, and from the previous discussions within the psychological model, it is clear that there are numerous authors that hypothetically speculate and point to 'Biological Laws'. These laws, which are genetically inherited through evolutionary processes, are primarily considered to determine behaviour and act as a backdrop to cultural behaviour. Therefore, the background behind the more biologically based models appeared to suggest a basis for judgement resultant from a human evolution perspective.

The socio-cultural situation of people have, also been considered as part of an overall model for human evaluation. They have been introduced with a more human adaptation backdrop to environmental evaluation by referring to different group interactions within different places. Both the evolutionary and the adaptation explanations have resulted from both the biological and socio-cultural based research.

Furthermore, it is important to highlight the third and final part of the theory basically highlighted by Bourassa (1988) as 'Personal Strategies'. At this level Bourassa's introduced model addresses the individual's personal experiences. These experiences are a result of the individual's personal encounters during his/her lifetime and therefore highlight the importance to note that these personal strategies are uniquely individual.

Zube et al. (1982) surveyed a number of articles being annually published throughout a 16-year period (see **fig 1.2**). The diagram below reflects the overall research trends being made during the years, where it is clear that research being applied from within an experiential approach has comparatively been smaller in number than the 'expert', 'psychophysical', and 'cognitive' paradigms. Although this does not reflect research being made in the past 18 years, but it important to highlight the apparent undermining of the more subjective paradigms during this period. Unfortunately there is not much data on similar studies been applied within the past years.
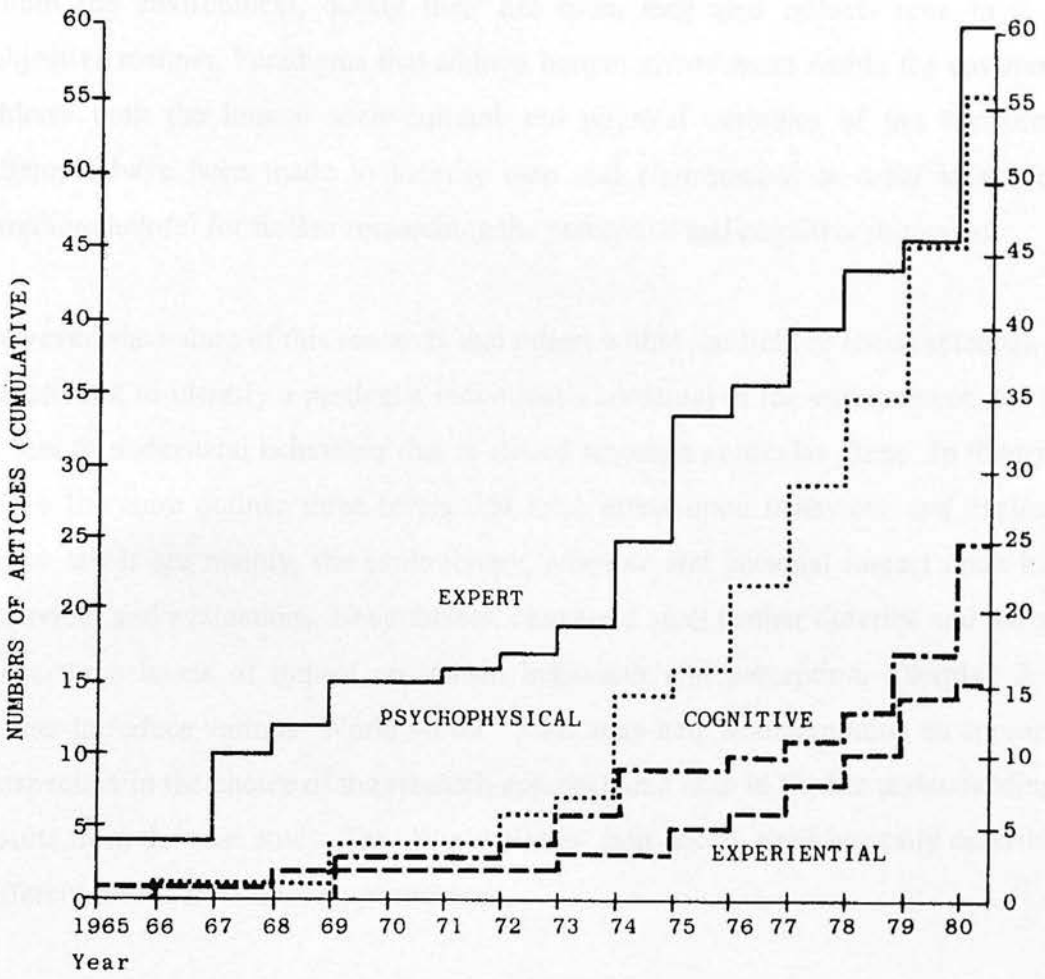
Fig 1.2: Overall research trends during the time period from 1965-1981.

Source: Zube et al. (1982)

Nevertheless, the chart has shown the basic direction that research has undergone during that period. It is initiated by a more physical form orientated view of evaluation, to a more human directed approach. From using expert judgements to the later, more subjective approaches that have attempted to identify evaluations of observers. The experiential/participatory approach finally explores the human dimension in a person in place context, hence acknowledging the influences of people's involvement within places and the perceived participation within places.

As the 'Information Processing Theory' is considered as addressing human evolution, it is apparent here, that the factor of time is at a stage of being addressed within the later paradigms. Socio-cultural paradigms being more subjective take it a step further to acknowledge humans as a learning creature whom behaviourally adapt to the

environment, as well as their biological and genetic adaptations. The experiential/participatory approaches also reflect people's behaviours and interactions within the environment, during their life span, thus also reflects time in a more subjective manner. Paradigms that address human involvement within the environment address both the human socio-cultural and physical variables of the environment. Attempts have been made to identify man and environment in order to achieve a paradigm helpful for further researching the perceptual and cognitive processes.

However, the nature of this research, and others within the field of social sciences, does not attempt to identify a particular individual's construal of the environment, but more or less to understand behaviour that is shared among a particular group. In theory, the above literature defines three levels that have effect upon behaviour and evaluation. These levels are mainly, the evolutionary, adaptive and personal impact upon human behaviour and evaluations. Nevertheless, **chapter 2** shall further describe and introduce those three levels of impact on human behaviour and perception. **Chapter 3** shall further introduce various 'World views'[16], that may help in determining an appropriate perspective in the choice of the research approach and help in further understanding the results from the case study. The 'World Views' introduced, shall basically describe the different means in examining phenomena.

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[16] World views are philosophical approaches to psychological phenomena, and shall be introduced in chapter 3.

CHAPTER 2

CHAPTER 1 — THEORETICAL REVIEW

CHAPTER 2 — THEORETICAL BUILDUP

CHAPTER 3 — MODEL

PART ONE (THEORY)

IDENTIFYING THE RESEARCH APPROACH

CREATING THE MODEL

CHAPTER 4 — INTRODUCTION TO CASE STUDY

CHAPTER 5 — RESEARCH TECHNIQUE

PART TWO (CASE STUDY)

OVERALL RESEARCH METHODOLOGY AND PROCEDURE

CHAPTER 6 — DESCRIPTIVE ANALYSIS — Part One — INTERVIEW ANALYSIS

CHAPTER 7 — CONTEXTUAL ANALYSIS

CHAPTER 8 — ANALYSIS OF HUMAN PERCEPTION — Part Two — QUESTIONNAIRE ANALYSIS

CHAPTER 9 — OVERVIEW OF RESULTS

PART THREE (CONCLUSION)

EXAMINING THE RESEARCH FINDINGS

CHAPTER 10

CHAPTER 11 — CONCLUSION AND RECOMMENDATIONS

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CULTURAL ADAPTATION Vs. EVOLUTIONARY ADAPTATION

2.0   Introduction

As previously mentioned, the theoretical approaches to Landscape Aesthetics mentioned within Bourassa's book *The Aesthetics of Landscape (1991)* seek to identify three distinct levels of aesthetic experience by which he labelled *biological, cultural* and *personal*. The final part of the preceding chapter argued that a biological reasoning underlies the cross-culturally shared evaluations to places. This consequently suggests that socio-cultural approaches to place evaluation result in cross-cultural differences in evaluation. It is further argued within this chapter that these evaluations are products of different cultural adaptations within different contexts. Upon these grounds, this chapter intends to highlight the different theoretical approaches upon which the earlier introduced paradigms are based. These paradigms are described within three theoretical conceptualisations, acting at an evolutionary, socio-cultural and personal level. These conceptualisations act at a rather general level of description from which the research paradigms listed within the previous chapter originated.

This chapter shall attempt to describe the identified approaches into a more general perspective. This would help define the scopes and limitations of those paradigms introduced within **chapter 1** as a means for examining how place construal takes place. The issue of adaptation, introduced in this chapter, has usually underlied the theoretical background to the paradigms of perception to be introduced later.

The theory of adaptation is basically concerned with the level of fitness of man in the environment, and is therefore helpful in adopting a method for examining the research results. Human adaptations to differing environments raise issues relating to change, environment, people and time. Adaptation also acknowledges individuals as having the

ability to choose and learn from others[1]. It also addresses whether individuals change their belief systems and ways of life or change their surrounding environments in order to achieve a higher level of compatibility within a place. These issues shall also be discussed within an adaptation perspective. As adaptation considers change as a major facet influencing human behaviour, the researcher's intention here is to introduce background to the theory of adaptation that may result in changes in human perceptions and behaviours as a result of different and changing environments.

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[1] 'Adaptation' includes learning concepts such as guided variation and biased transmission, which will be described later.

2.1   Adaptation

Adaptation, as far as we are concerned, may be basically described as the process by which humans achieve the best degree of fitness within their environment. In order to start discussing the concept of adaptation, it is necessary to describe the various meanings that the concept contains. Biologically, adaptation has two different connotations. The first is genetically inherited through evolution and the second is more culturally transmitted within the lifetime experiences of the individual. The first of the two basic types of adaptations is concerned with genetic evolution as described by Bennett (1993) as principally dealing with, "… feed backs into the gene pool in response to the environment leading to the persistence or development of traits favourable to the survival of a population." (p.28). The second concept deals with the adaptation of human behaviour, which occurs during the human life span; this mainly operates through cognitive and perceptual processes. In sciences dealing with human behaviour, the latter concept of adaptation is used in order to describe adjustments and changes in modes of social behaviour in relation to the physical environment for the purpose of maintaining or improving one's status.

Adaptation theory has been applied in researching mobility and relocation, crowding and cognitive evaluations, which includes making adjustments in cognitive processes and thus adjusting behaviours to be compatible with perceptions (Tognoli 1987). This assumes that actions and cognitive adjustments are adaptive responses within which individuals engage.

Figure 2.1 shows three main arrows, each representing, time, scale and the rate of change, the first arrow illustrates evolutionary changes that work at a comparatively slow pace and are determined by our evolutionary adaptations. The second shows the rather faster pace of socio-cultural changes that are predetermined by a whole society. Finally, the third arrow represents the impact of the individual's experiences, which are unique to the person and are largely shaped by the individual's life time experiences. This level is subject to more external stimuli that may influence the person's judgements and behaviours. The three theoretical bases derived from the literature review, all work together and influence human behaviour. The objective here is to understand and deduce the more influential approaches that are main determinants of changes in human behaviour.

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Impact of Personal
Experiences

TIME

Socio-Cultural Stage
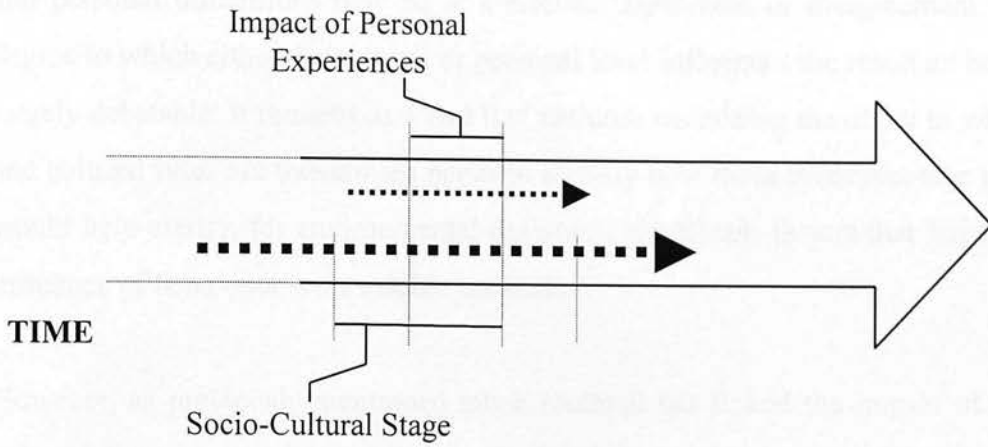
INDIVIDUAL'S LIFE EXPERIENCES (Rapid pace of change)

SOCIO-CULTURAL CHANGES   (Fast pace of change)

EVOLUTIONARY CHANGES   (Slow pace of change)

Figure 2.1: The three main theoretical postulates that influence human behaviour showing the hierarchical impact of the different types of change.

Figure 2.1 also highlights the fact that biological changes are less frequent, as evolutionary processes take place over long periods of time. It is therefore argued here that the impact of cultural changes on peoples' behaviours is greater than that of a biological change, since socio-cultural change occurs at a more rapid pace. Therefore the cultural adaptive changing process would have a greater consequence upon human behaviour and judgement. It is also argued that research applied on social or cultural change is relatively more important, as urban environments are also at times rapidly changing and therefore directly effecting whole societies and their culture. Similarly, and at a personal level, changes in the environment tend to favour the significant influence of people's experiences occurring within the life span of the individual.

It is also the researcher's intention to argue that these lifetime experiences may have a comparatively larger effect upon the individual's behaviour and judgement than do evolutionary and cultural adaptations. However, at a personal level, the effect of these experiences largely depends upon the personality of the individual and the extent to

which this personality is affected by external social forces. That is to say that the social and personal dimensions may be at a relevant agreement or disagreement. Thus, the degree to which either the cultural or personal level influences the resultant behaviour is largely debatable. It remains as a fact that research examining the effect to which social and cultural rules are transmitted needs to identify how these processes take place. This would help clarify, for environmental designers, significant factors that largely link the influence of behaviour with specific contexts.

However, as previously mentioned much research has linked the impact of the socio-cultural dimension in determining personal or individual judgement. Therefore, it could be argued that research could collectively determine human behaviour and judgement as a consequence of both personal and shared experiences within the society. The following shall describe in more detail the theoretical background to the paradigms of environmental evaluation earlier presented within **chapter 1**.

2.1.1 Evolutionary Adaptation

As has previously been illustrated, environmental evaluation studies have detected greater preference to scenes characterised by information processing properties. Other studies discovered responses to environments containing water as demonstrating a high level of preference. Bourrassa (1988) refers to Jay Appleton's book, *The Experience of Landscape* (1975) and Peter Smith's *The Syntax of Cities* as being too simplistic and contributing to the theory of biological aesthetics. Furthermore, evolutionary perspectives reflect evaluative capacities inherent from the process of human evolution in natural environments (Appleton, 1975; Orians, 1980; S. Kaplan and R. Kaplan, 1982; Ulrich, 1983; Woodcock, 1984). At this level change takes place on a species via adaptive mutation and natural selection and its affect results upon all man-kind. (Hartig 1993; Richerson et al. 1992).

Here, adaptation is analogous to the genetic forces of evolution and refers to the physiological and biological changes of humans to their environments through many generations. Within this case, responses to environments result from subconscious evaluation underlying the assumption that they are genetically inherited. Genetic

adaptation is affected by long term changes in the environment and therefore takes a comparatively slow process in comparison to individual learning.

2.1.2   Cultural Adaptation

All organisms adapt to different environments through a long evolving genetic system In contrast to this long process, humans with their 'extra' cultural dimension, used as a means for adaptation, takes place within one's own life-span and the life-spans of their close ancestors. The cultural dimension is passed along through succeeding generations as a matter of gained experiences, experienced through the lifetime of each generation. In comparison to genetic adaptations, cultural adaptations to environments, results from cultural interaction with the environment. In this case responses to environments vary as a function of beliefs and values shaped through personal and cultural experiences (Tuan, 1974; Altman & Chemers, 1980).

> "By modifications in his culture, man has been able to adjust himself to very diverse climates, often without any great change in his heredity" (Dice, L.R. 1955 p.44).

It has previously been pointed out that many researchers approach landscape aesthetics and environmental judgement from a predominant belief that the biological basis for perception is highly important. Those cases suggest that genes act as guiding rules behind people's choices. In comparison, Richerson et al. (1992) point out that 'cultural evolution' may cause a change in biological laws; "A chain of cultural rules will often end in genetically acquired traits of some kind" (p.64). This suggests the interrelation of one mode of adaptation upon the other and that both types of adaptations are not considered as secluded entities. This would also propose the need define a way of understanding psychological processes that acknowledge the coherent interplay of both types of adaptations, in a holistic manner.

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2.2   Changing Environments

As adaptation deals with changes in the human nature at a biological, cultural and personal level, another dimension that is important to acknowledge is the actual environment in which these adaptations take place. As adaptations are considered as processes of change, of man in the environment, it is impossible to distinguish between changes taking place within human behaviour, perception and changes taking place within the related environment. This would suggest that the changes taking place in the human structure and psyche are largely determined by the environment and vice versa.

Changes in the environment may take effect in the form of levels of resources (such as food) to which humans have to adjust. This leads to the suggestion that the term "adaptation" refers to changes in modes of human behaviour designed to improve the state of the individual and the group, where the individual adapts through;

> "...a variety of behavioural modalities, with a variety of needs, objectives and strategies. Group adaptation is simply a state of management of physical resources at any given time..." (Bennett, J. 1993 p.49).

Anthropologists define culture as the differentiation between the lifestyles of different groups in accordance to their varying adaptations to the physical environment Bennett (1993). Each culture may have its own pattern of adaptation to the physical environment, which is classified by Bennett (1993) into "...stages of adaptation based on major subsistence patterns: hunting and gathering, pastoralism, and settled agriculture" (p.46). Adaptation is a process of interrelations between humans and their use of the physical environment. These interrelations affect each other in a complex manner. Further complexity appears as a result from the large amount of variation in the environment and in adaptation processes that underlie human-environment relations.

2.3   Cultural Change

Group adaptations are governed by collective decisions and acceptance to satisfy group needs, demands and welfare. The group's adaptive patterns take definite roles in

determining certain cultural patterns and subsistence systems. Changes in adaptive patterns can be caused by different factors and needs; such as the needs to 'cope', 'innovate', 'improve', 'enhance'. Yet coping does not necessarily cause a change in an adaptive pattern that is if the given behaviour would satisfy relatively important circumstances (Bennett, J. 1993).

Modifications in human culture contain eminent factors of adaptation, such as wearing heavy clothes in cold environments or lighter clothes in warmer environments. Adaptation of societies may include such things such as the kinds of food used and the means by which the food is obtained. It also takes into account the different soils, minerals and natural resources of an area together with the density and distribution of human population. Different adaptations are also a result of the different relations between human societies with plants and animals (Dice, L.R. 1955).

Furthermore, the process of adapting within an environment needs the realisation of certain change in the present state of circumstances;

> "For adaptational theory, the key is the cognitive capacity to visualise changes in contemporary phenomena, that is to conceive of new things and thereby establish new anticipations" (Bennett J., 1993 p.33).

The cultural modifications of a populance are easily seen in cultural patterns, where man can easily adapt to highly diverse environments. Julian Steward (1955) labelled the cultural factor as the "super organic factor", similarly Richerson et al. (1992) termed it as a "superior mode of adaptation" (p.69), which indicates their awareness of 'cultural adaptation' being at a higher level of importance within the field of social sciences.

2.3.1 Level of Fitness between People and the Environment

It is clear that cultural behaviour is usually governed by the physical factors in the environment that are responsible for cultural adaptation within it. As suggested by Dice (1955), climate pervades almost every feature of culture because of its control over dress, shelter and habitation, with its effect on social operations and customs that are practised by the people.

Cultures adapt to varying conditions whether in natural or built environments, where cultures change to achieve a level of fit between themselves and their environments:

> "On a socio-cultural level, changes in institutions, technologies, attitudes, and behaviours may emerge over many generations or within a single generation. On the individual level change may accompany particular life events and also fall within predictable developmental and life-cycle stages" (Hartig, T. 1993. p.22).

Adaptation to a highly vegetated environment will largely be different than that to a desert environment with its characteristic scarcity of water. Therefore, if the type of cultural activity is based on grazing animals in both environments the desert dweller therefore shall have to be moving about through out his territory in order to find grazing areas for his live stock. As for regions with an abundance of water, less emphasis exists on finding grazing areas. Furthermore the desert dwellers will acquire a nomadic life that is derived from an extensive knowledge of the region's scattered grazing spots.

Similarly the culture of the Nuer of the upper Nile, who depend mostly upon the seasonal flooding that provide them with fish and that cultivate their crops, adapts well to the floods, food resources and seasonal changes in their habitat (cited in Dice, L. 1955 pp.145-146). Therefore, the level of cultural fitness between a group of people and their environment is highly necessary to understand, as it may determine changes within the culture itself or their choice of area of habitation. In complex modern living, a society may have to control the form of their surrounding environment in order to achieve the level of fit. This is seen in ever-changing urban environments that may lead to people abandoning their settings or changing their surroundings for their relative convenience. Thus, environment and culture can be considered as two forces, where change in one may determine changes in the other in order to achieve an accepted level of equilibrium.

2.3.2 Social Learning and the Level of Variation within the Environment

Another force that may affect the change within a society is the extent to which social learning takes place. Social learning is described as the imitation of certain modes of behaviour from generation to generation, through cultural transmission. Richerson et al. (1992) argue that cultural adaptation can qualitatively yield different outcomes than those proposed by fitness theory and further highlight that social learning may be favoured. In comparison, individual learning may often be costly in terms of energy and time consumption. He further indicates that there are two types of individuals;

> " ...individual learners who evaluate alternative behaviours and choose the best one and social learners who copy behaviour of randomly chosen individuals from previous generations" (p.70).

Rogers (1989) shows that there is always a mix of two types of individuals: social and individual learners. As social learning allows individuals to avoid the costs associated with learning, individual learning needs more energy and time is more costly and needs a larger brain. It may also subject the individual to a larger level of risk. Social learners may always increase in frequency as it is less costly and "...are virtually certain to acquire the best behaviour without bearing the costs of individual learning" (Richerson et al., 1992, p.70).

2.3.3 Guided Variation

The above discussions consider forces that produce 'fitness-maximising' behaviours, which deal with changes in human lifestyle and behaviour, and the context of the environment. This is different than the processes of acquiring culture through copying the phenotype. Here culture is considered as possessing an 'inheriting' nature.

Culturally acquired information occurs when individuals acquire values and beliefs transmitted through social learning. This happens during the individual's life span, where individuals may modify existing beliefs or adopt completely new ones as a result of particular experiences. Later generations get involved differently leading to different

experiences and learning, thus further change their cultural characteristics. Adaptive change occurs when beliefs are transmitted from one generation to the next through cultural transmission. This change is named as "...the force of guided variation" (Richerson, P. et al. 1992, p.56).

The rate of which 'guided variation' can cause a population to adapt quickly depends upon how difficult it is to evaluate alternative behaviours. Guided variation can rapidly transform a population when it is easy for individuals to learn an alternative behaviour that is more environmentally responsive than the existing behaviour. Whilst, when it is difficult to evaluate the best cultural variant individuals might choose differently, therefore causing the net change to be small. Cultures also accumulate small, learned steps over many generations, leading to large changes, in comparison to changes within an individual generation (Richerson P. et al. 1992).

2.3.4 Biased Transmission

Here, imitation of others can take place individually by picking and choosing whom to imitate. Biased transmission occurs when individuals select the variants to adopt from those that are available. There is no need to create a new behaviour, but only to evaluate the existing alternative behaviours and choose among them. It should be noted that it is also much easier to choose among behaviours, rather than invent an alternative behaviour. In this case the strength of biased transmission will depend upon the amount of variation within the environment "...the greater the environmental variability the lower the frequency of social learning" (Richerson, P. et al. 1992, p.70).

In conditions where a low level of variation exists, the ratio of social against individual learners would increase. However, social learners always increase in numbers, since they are almost certain to acquire the best behaviour without bearing the costs of individual learning. Therefore individual learning becomes less common, and fewer people learn for themselves, which tends to cause an accumulation of errors. In order to reduce the accumulation of errors, social learners are reduced, by increasing the level of variation within the environment.

2.3.5   Level of Variation

The above therefore suggests that the level of variation within the urban environment heightens in importance. As it is easier to choose among different behaviours, individual learning will depend upon the amount of alternatives to choose from. The variety of existing alternatives from which to choose therefore determines the amount of social learning existing. This does not mean to say that social learning should be avoided simply because it accumulates errors, it is valuable in that it supports the persistence of certain modes of behaviours. The downside to social learning appears as certain modes of behaviour may continue to exist but within a different incompatible context, where the behaviour may not be applicable.

As there are constant changes take place within the urban environment, it is therefore important to realise that environments with higher levels of variation reduce the amount of incompatible behaviours occurring within the society. In contrast, built environments with less variation tend to intensify certain learned modes of behaviour, which do not correspond to environments that existed within previous generations, leading to a reduced level of fit between people and the environment. The interdependency between the levels of both variation and social change is therefore highlighted. Reflecting this issue towards urban contexts, the introduction of relatively new environments towards a society may not correspond with the society's usual mode of behaviour corresponding to these new places. It may also contribute to differing interpretations of certain designed places within the urban fabric.

In conclusion, the above issues are described in a simple formula in **figure 2.2**. The figure represents the relationship of a high level of variation in the environment with respect to level of change in behaviour, level of social learning (guided variation), the level of choice (biased transmission). The formula presented here is a hypothetical insight to how the configuration of places may affect variation in behaviours.

The figure shows the proportional relationships between them. The top formula indicates that the level of variation in the environment is directly proportional ($\propto$) to the level of change in behaviour and level of choice within the environment (biased

transmission), yet inversely proportional to social learning (guided variation). The bottom formula is based upon the top formula as it indicates that the more variation in the environment, the more social/behavioural adaptive changes, the more freedom in choosing the desired behaviour and the less social learning will take place.

The main interests derived from the formula individually relate to two parts of the research. The initial interest lies in the fact that greater variation in the environment would promote more changes in human behaviour, and relates to the model introduced. This part of the formula presents a conception of place and behaviour and will be carried on to the following chapter, as it is an essential notion to help in creating a model designed to explore the results of the research. It is important to highlight here that this deduction later leads the research to examine the level of variation existing along the waterfront and within Cairo.

The other interest lies in the practical implications of the research presented within the final chapter of the thesis. This is basically reflected in the fact that more variation offers more freedom in choosing a desired behaviour. This is considered as a positive aspect not only as it decreases restrictions in behaviours but also due to the fact that a more variable environment is by far more interesting and appealing.

$$\text{Level of Variation} \propto \text{Amount of change in Behaviour} \propto \text{Level of choice within the environment (Biased Transmission)} \propto \frac{1}{\text{Level of social learning (Guided Variation)}}$$

$$\text{More Variation} = \text{More change and adaptive behaviour} = \text{More freedom in choosing the desired behaviour} = \text{Less Social Learning}$$
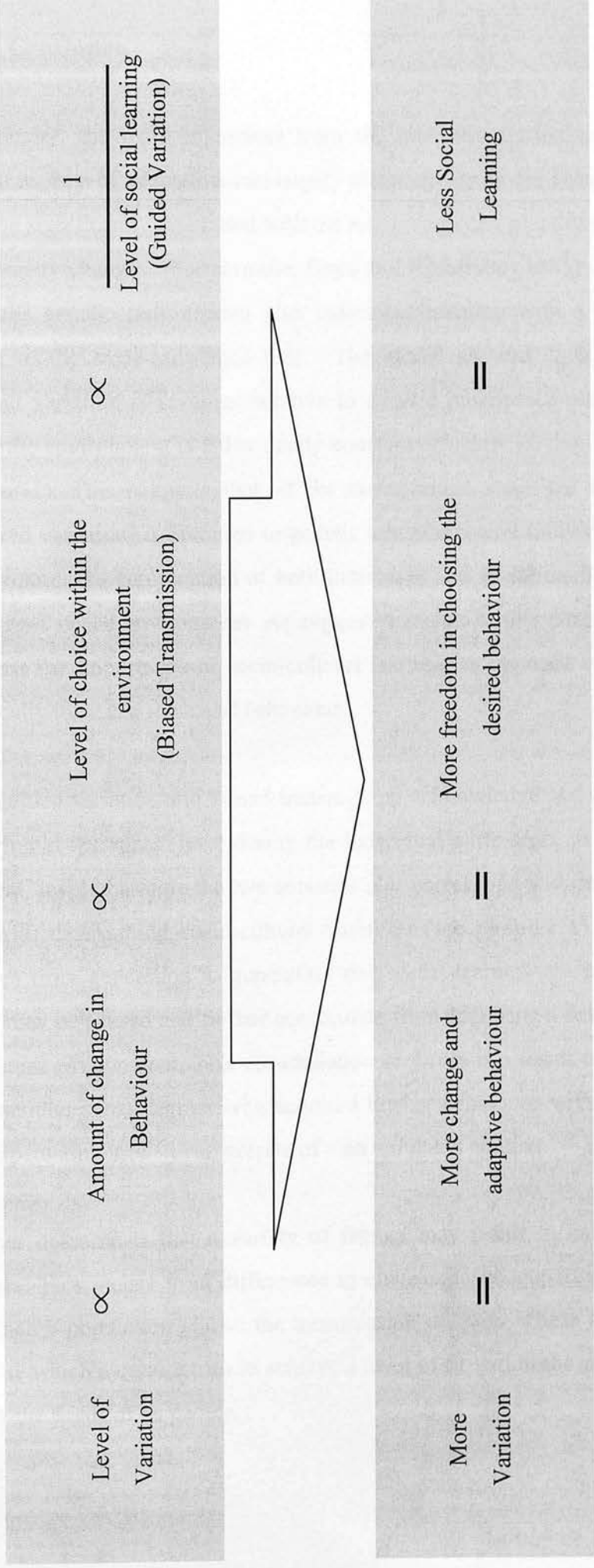
Figure 2.2: Formula explaining the impact of the level of Variation within the environment upon the freedom in choosing a desired behaviour within the environment.

2.4   Conclusion

In summary, the main inferences from the previous discussion suggest that socio-cultural aspects of adaptation can largely affect change in the behaviour of people. This could be significantly associated with the relative rapidity of cultural in comparison with evolutionary changes. Furthermore, Boyd and Richerson (1985) analysed a model that compares genetic transmission plus individual learning with a cultural transmission system to the same substance trait. The model showed "...that the inheritance of acquired variation is favoured relative to genetic inheritance plus individual learning unless the environment is either nearly constant or nearly random" (Richerson, P. et al. 1992 p.71). This suggests that, if the environment stays the same, social learning (acquired variation) is favoured to genetic inheritance and individual learning together. Furthermore, the combination of both individual and social learning provides adaptive advantages in the environment. As suggested earlier in this chapter (see fig. 2.1), this confirms the importance of socio-cultural learning as opposed to a slower process of genetically inherited modes of behaviour.

Both guided variation and biased transmission acknowledge and describe both changes occurring at 'personal' level during the individual's life-span, as well as at a group or 'cultural' level, therefore the two concepts also correspond with research paradigms that deal with determining socio-cultural variables (see chapter 1). As the environment changes from generation to generation and social learners are generally the majority, errors may be caused and further accumulate from acquiring a behaviour learned within a different environment. This accumulation of errors is a result of copying a behaviour from another social learner who acquired his/her behaviour within a different context, yet perpetuating it in – even despite of – an unrelated context.

Another outcome is that a variety of factors may result in catalysing socio-cultural changes. This ranges from differences in environmental conditions to differing means by which a population allows the transmission of traits. These adaptive processes are ways by which a culture tries to achieve a level of fit within the environment in order to satisfy the needs of its people.

Cultural change is a highly complex field of study. Understanding change pre-requires the knowledge of a society's needs and how new generations attempt to learn and modify their behaviour in order to achieve those needs in order to further avoid the accumulation of errors. At a more general level 'adaptation' acknowledges a variety of interrelated issues that are indispensable for understanding human behaviours, judgements, and changes such as;

1. The interaction of people within their environment helps to achieve a level of fit, between people and changing environments. Therefore change within the environment largely influences various human behaviours.
2. The acknowledgement those different modes of learning work together, such as individual and group adaptations through guided variation and biased transmission.
3. The larger effect of social learning on change, in comparison to changes taking place from genetic inheritance.
4. The most critical factor of them all, is the level of variation existing within the environment and its impact upon social learning. This factor acknowledges the effect of the contextual configuration. Here context is not proposed as an isolated entity from humans, but more as a context in which people interact and modify their behaviours.
5. The level of variation could be set as a backdrop to human behaviour with its effect upon individual choice and selection. The more variation that exists within the environment one could argue, the more choice exists for people to choose from and hence adjust their perceptions and modes of behaviour. Environments with high levels of variation limit the amount of imitative learning. This results in the reduction of error accumulated in order to adjust to these environments.

This chapter has introduced aspects of adaptation theory, which at a more general level, attempt to describe the theoretical origins of the paradigms introduced in **chapter 1**. **Chapter 3** goes to a further level of abstraction for the purpose of understanding psychological phenomena. The world-views it introduces will further help in determining the research model.

CHAPTER 3

CHAPTER 1	THEORETICIAL REVIEW		IDENTIFYING THE RESEARCH APPROACH	PART ONE (THEORY)
CHAPTER 2	THEORETICAL BUILDUP	CREATING THE MODEL		
CHAPTER 3	MODEL			
CHAPTER 4	INTRODUCTION TO CASE STUDY			
CHAPTER 5	RESEARCH TECHNIQUE		OVERALL RESEARCH METHODOLOGY AND PROCEDURE	PART TWO (CASE STUDY)
CHAPTER 6	DESCRIPTIVE ANALYSIS	Part One	INTERVIEW ANALYSIS	
CHAPTER 7	CONTEXTUAL ANALYSIS			
CHAPTER 8	ANALYSIS OF HUMAN PERCEPTION	Part Two	QUESTIONNAIRE ANALYSIS	
CHAPTER 9	OVERVIEW OF RESULTS		EXAMINING THE RESEARCH FINDINGS	PART THREE (CONCLUSION)
CHAPTER 10				
CHAPTER 11	CONCLUSION AND RECOMMENDATIONS			

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A TRANSACTIONAL ACCOUNT FOR HUMAN-ENVIRONMENT SYSTEMS

3.0   Introduction

Chapter 1 illustrated the existence of a variety of techniques for testing place judgements. Chapter 2 came to acknowledge both man and environment, where there was an apparent increase in research awareness of the human dimension in the later research paradigms. Zube (1991) also proposes the need for input from the social sciences in to landscape planning. It is also necessary to mention that both the evolutionary and cultural perspectives on preference have usually been independently researched.

The following serves as an explanatory overview to the paradigms of perception mentioned in **chapter 1**. This is to further describe environmental perception through the basic world-views introduced below. It is also intended here to suggest a theoretical framework for addressing and explaining the results of the proposed case study that will be introduced later in the thesis. This chapter is simply set to achieve three main goals:

1. Designing and proposing a general model (presented within the final part of this chapter) for understanding psychological phenomena related to research taking a man-environment approach.

2. The model is designed in order to guide the sequence of the research. The model is later used to examine the results of the research within its proposed framework.

3. Both the case study and the model attempt to clarify each other. That is to say that the results derived from the later analysis is tested against the model. Therefore results from the case study shall attempt to point to the positive and negative aspects of the proposed theoretical framework. This is implemented in order to evaluate this model later within the thesis.

3.1 Four-Fold Classification of World-views

It is the researcher's concern here to address the "Four Fold World View" classification presented by Altman and Rogoff (1987). As these approaches correspond to early and late scientific conceptions, it was therefore found relevant to understand some original approaches created for the pursuit of knowledge. This would help describe how and why the previously mentioned methods of research may have inherited their approaches. This chapter is therefore set out to briefly compare between the various philosophical approaches for understanding psychological phenomena. This is in order to help in understanding the background of the phenomena identified following the analysis of the case study.

Dewey and Bentley (1949) distinguish three approaches to the pursuit of knowledge, Self-action, interaction and transaction. Similarly, Pepper (1967) and Altman and Rogoff (1987) identified these approaches and have been compared in **table 3.1**. These approaches correspond to early or pre-scientific approaches, of the Newtonian and the Einsteinian view of science and are briefly described as follows.

Dewey & Bentley	Pepper	Altman & Rogoff	Definition of Psychology
Self action	Formism	Trait	The study of individual, mind or psychological processes.
Interaction	Mechanism	Interactional	The study of the prediction and control of behaviour and psychological processes.
	Organicism	Organismic	The study of dynamic and holistic psychological systems in which person and environment components exhibit complex reciprocal and mutual relationships and influences
Transaction	Contextual & Selectivism	Transactional	The study of changing relations among psychological and environmental aspects of holistic unities.

Table 3.1: Philosophical Approaches to Psychological Phenomena.

Source: Altman I. & Rogoff, B. (1987)

3.1.1   Self-Action

Self-Action assumes that the functioning of physical and social phenomena is governed by internal essences. These essences can be in the form of self-powers, forces, or intrinsic qualities that are inherent in the *organism* or *phenomenon*. In psychology, early concepts of soul, mind and instinct reflect the self-action perspective. They imply that physical or psychological phenomena are defined and operate more or less independently of the setting and the environment. This view reflects the nature of the earlier paradigms introduced in **chapter 1**, which are typified by a segregation of the settings or environment from psychological processes. Furthermore, these research approaches concentrate on models of perception that separate the subjects from other sensory factors experienced in these places[1]. The nature of Self-action does not place man and environment as a holistic entity, but rather considers them as independent entities.

In Self-Action *temporal aspects* are not usually emphasised other than as manifestations of the essence of a phenomenon. Therefore, the nature of this approach overlooks factors of time and change that may have direct effect on the related phenomena, which would make outcomes related within a present and static state.

3.1.2   Interaction

Interaction adheres to modern science than does 'self action' perspectives. It takes a more Newtonian perspective, where parts are assumed to exist as separate elements that act and react to one another. This approach yields a phenomenon with causally linked and interdependent phenomenon.

This approach assumes that physical and psychological elements exist as separate entities with their own characteristics, although their functioning may be affected by interacting with other elements. Therefore, person-environment systems are divided into

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[1] **Chapter 1** illustrated that researchers had asked people to evaluate places through 2-dimensional pictures (i.e. a purely visual environment) thereby by passing numerous other influential factors such as the individual's sensory input to judgement.

separate entities having certain individual properties. Here, studies focus on the independent and interactive effects that psychological and situational factors have on functioning.

Research outcomes can be used to explain relationships within a set of specified variables. 'Interaction' research is concerned with the impact of discrete environmental variables upon psychological variables, such as emotion or stress. It also tests for impacts from changes at a situational[2], personal and temporal[3] level. *Psychological phenomena* are treated as fundamentally static, although changes in their states occur when elements interact.

Temporal aspects are not viewed as being integral to a phenomenon, since time and the properties of a phenomenon are defined independently to one another, and possess certain intrinsic qualities (Altman & Rogoff 1987). In this case, time is a discrete variable and is used as a means of locating phenomena and identifying a point in which personal and situational variables appear (Hartig 1993). Change results from the interplay between situational and personal variables and is identified from differences in measures of those variables, taken at different points in time (Hartig 1993).

3.1.3 Transaction

The definition of the Transactional perspective is that it studies the changing relations among psychological and environmental aspects of holistic unities. The Transaction approach assumes an inseparability of contexts, temporal factors, physical and psychological phenomena. It treats context, time and processes as aspects of an integrated unity and emphasises activity and process. This is different from Interactional approaches, wherein phenomena are understood to interact with and be influenced by contexts.

A fundamental postulate of the Transactional perspective, is the unity of the organism and the environment, thus refutes the model dealing with separate elements of a system and instead deals with them as a whole. People, processes and environments are

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[2] Here, 'situation' describes the nature of the context.

[3] Here, 'temporal' aspects are only considered in terms of the amount of time spent in a place.

perceived as *aspects* of a whole, not as independent *components* that collectively combine to make up a whole.

Transactional perspectives address ongoing, changing processes within the environment. This issue has been a principal concern in recent research models, as it does not undermine that places, such as cities never stay in a static mode. Within cities, these inherent changes may be embodied in functional transformations within the structure of the city. Spirn (1986) explains that processes of change in urban landscapes requires the "…knowledge of the processes, both natural and social, which shape over time", and would also require the "appreciation of the urban landscape as dynamic and evolving" (p.440).

Altman and Rogoff (1987) build upon work by Pepper (1942, 1967) and Dewey & Bentley (1949), who give a brief characterisation of transactional thought in the field of psychology. Altman and Rogoff identify differences in the unit of analysis in the treatment of person-environment systems and conceptualisation of change. This helped to discriminate between transactionalism and interactionalism.

The transactional perspective, within human-environment systems, claims that various aspects of the system serve to define each other. Transaction draws motive from an ongoing process of differentiation and evaluation of the environment, which is integral to the development of cultures, and has led to the creation of conditions that challenge our biological adaptations (Hartig, T. 1993).

Temporal qualities are considered as inherent aspects of phenomena and embody the flow dynamics of peoples' relations to social and physical settings. Research within this stream of thought draws attention to change, transitions and shifts in life circumstances (Lucca et al. 1992, Yamamoto et al. 1992). Although those articles deal with aspects of time and change, Altman (1992) criticised them for not using temporal issues as the overall framework of study. Therefore, temporal factors can be examined within a variety of issues, with respect to life transitions. The study of transitions helps researchers understand how cultures cope with, adjust to or adapt to certain phenomena, which may enhance our understanding to any examined phenomenon.

Contextualism is rather similar in many respects to the transaction, orientation described by Dewey and Bentley in the assumption that contextual and temporal processes are fundamental aspects of phenomena (see **table 3.1**). Contextualist world hypotheses do not emphasise universal/teleological principles that govern the function of phenomena. Instead a contextual hypothesis attempts to predict change in relationships between variables depending upon the presence or absence of certain situational factors. The contextual theory goes on to explain why the hypothesised cross-situational variations in the target phenomenon occur, whereas non-contextual theories do not attempt to predict or explain cross-situational variations whilst drawing relationships among target variables. It is therefore difficult to identify clear distinctions between these views as cross similarities exist between them. Furthermore, Hartig (1993) points out that the choice of one approach in favour to the other distorts the transactional perspective.

Transactional objectives assume psychological phenomena to take place in terms of: cognition (e.g. perceptual learning); affection (e.g. feeling and emotional, memory, imagining symbolising); and valuation (e.g. processes involving comparison with personal and collective standards such as aesthetic evaluation). These processes are correlated aspects of experience and are generally treated separately in order to simplify analysis even though they simultaneously occur in everyday life.

3.1.4   Transactional Research

Transactional research attempts to holistically cover "surrounding" phenomena that may have an effect upon a certain topic of study. Changes occurring within economic and political movements, geographic and ideological changes and other issues may collectively affect changing processes. As Altman, I., (1992) states;

> "...much research and theorising is being conducted within a perspective that ignores and is detached from these socio-political-geographic events and changes" (p.271)

Therefore transactional research is of a more holistic nature, in attempting to define embedded, complex changing social and physical contexts, which may influence change. If these "contexts" were ignored, the studied phenomena would limit our understanding of the subject of study. As earlier demonstrated, the findings of the

transactional perspectives are shaped by the particular configuration of the observer, participant and setting. Ideally a transactional perspective does not unilaterally impose measures on an event, but it derives them from the event[4]. This would suggest that, in measuring a particular event, standardisation across situations must be avoided, however measures unique to the event are required and perhaps not applied to other situations. Therefore the nature of the context of the event is an essential facet that constitutes part of the transactional perspective. Transactional research acknowledges the fact that it is difficult to predict as numerous dimensions are involved within this holistic worldview.

Attributes of *change* also exist within a transactional perspective. It stresses that it is a necessity to describe the flow of dynamic events (e.g. people's ongoing actions in relation to one another and the environment). Thus the personal qualities or cognitive structures of actors taken alone is of less interest than are dynamic transactions between people and with the environment[5].

Studies made on experimenter bias in the 1960's and 1970's demonstrated that different qualities of researchers affect behaviour within standardised situations. This often resulted in non-replicated findings, which reveals a serious methodological problem. Thus, the transactional perspective attempts to include the observer (experimenter) as an important aspect of the event.

In Trait, Interactional and Organismic orientations, observers are treated as independent from the phenomenon. In contrast the transactional perspectives consider the position and role of the observer to be an aspect of the phenomenon. Different observers may provide varying but equally accurate descriptions of the same phenomenon, depending on their locations, roles, and perspectives. Transactional perspectives advocate the study of how the observers study and interpret the events. This direction, rather than assuming reliability among observers, attempts to indicate closeness to the truth. This may also require an investigation about the characteristics and orientation of the observer.

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[4] As shall later be described, the interviewing technique introduced within Stage II is chosen in order to derive factors from the subjects rather than suggest any factors that may influence the results of the interview.

[5] This interaction as the later results will indicate, is conducted in the form of social class interaction within private contexts (such as sports clubs) versus public space.

Transactional researchers interpret such findings as evidence that the location, attitudes and behaviour of the observer are aspects of the phenomenon. Furthermore, the very process of observation alters the event. Transactional perspectives include the understanding of psychological processes in relation to the context and norms of the setting and its participants.

3.2 Overview of the Transactional Perspectives

Transactional perspectives mainly describe and understand the pattern of relationships among people, places and psychological processes. Altman et al. (1980) mention that *change* is a central feature of the transactional perspective where interaction is treated as a dynamic interplay of openness/closedness to others, and with particular levels of openness and closedness varying from circumstance to circumstance.

For example, within an interactional perspective, privacy can have a direct affect on size of space, but Altman et al. (1980) describe privacy regulation as a holistic multi-mechanismic process in which verbal, non-verbal and environmental (personal, space and territorial behaviour) mechanisms are brought into play in a unified fashion. Consequently, the transactional perspective holistically addresses the holistic view by which it treats psychological processes and environmental contexts as the fundamental units of analysis. Here, persons, processes and contexts mutually define one another and serve as aspects of the whole, not as separate elements.

In conclusion, it is possible to take the example of the study of billiards as a given set of phenomena. From a Self-action stance, attempts will be made in understanding each independent billiard ball as an isolated phenomenon. Therefore the billiard ball or phenomenon is studied from a perspective that deals with its intrinsic qualities devoid from any external forces. This suggestion can only be considered as long as the billiard balls remain in a static position. This reflects the nature of the paradigms of aesthetic judgement that study the landscape form as completely isolated entities.

From an Interactionist approach, attempts are made to understand the impact of one billiard upon another. This suggests that the studied phenomena deal with the interaction between billiard balls where the billiards are further considered as a separate

situation with their own characteristics. Changes in interactions are results of differing situations and circumstances. It takes a more predictive fashion in order to determine the reaction (cause and effect) of one billiard upon the other.

The transactional perspective collectively considers that all the billiards are in constant interaction and movement. The transactional perspective, like the Interactional approach, acknowledges that the billiards have their own characteristics. Here, the interactions between the billiards are not considered as isolated situations, but as the changing situations of various interactions. This therefore does not undermine the interaction (nor the object orientated sefl-action considerations) between them but goes further in attempting to understand the ongoing changes in situations and relations as a result of these interactions. Therefore, the transactional perspective acknowledges that prediction may be a difficult task to achieve as all the billiards are in constant interaction with constantly changing relationships.

The ability to consider a larger variety of aspects configuring the whole picture of an event would thus derive a relatively clear picture of understanding any phenomena. Thus, there are certain strengths to adopting other philosophical approaches in addressing certain aspects within a moment in time, but the transactional perspective can address micro as well as macro temporal aspects of phenomena.

The earlier philosophical perspectives within the table are also unique with intrinsic strengths of study for exploration. Interactionist research, where entities are studied in a causal manner, is helpful in determining certain aspects that a transactional view may not achieve. But in the author's view, the extra understanding inherent in a holistic approach, is that an overall awareness of a multiplicity of phenomena may give a better understanding of factors affecting change. In our case, it is relevant to the understanding of interactions between inherent factors affecting both psychological phenomena and the urban, physical environment and their constant interplay. These factors may either be physical or psychological the fact remains that the transactional perspective would help in understanding both phenomena and their changing relationships.

In conclusion, earlier world-views show apparent differences in examining phenomena than the later ones. It is therefore found valuable to highlight the consistency between world-views and the paradigms mentioned within **chapter 1** that move from an

objective to a more subjective trend. It also indicates that the later paradigms deal more with a 'man in environment' trend that acknowledge human transactions within the environment and its effect upon the perceptual and cognitive processes.

3.3 Integration of the Transactional Perspective with Theories of Adaptation

The previous discussion highlights the transactional perspective, which addresses issues of people, context and change. These issues were used as part of the required model as they aim for a more holistic perspective in order to consider numerous facets that influence human judgement and behaviour. Furthermore, and as has previously been discussed, theories of adaptation are basically concerned with a variety of issues such as cultural change, environmental change and the level of fit of man in the environment. Theories of adaptation give further detailed insights into the differences in the way social and individual learning affects change. The transactional perspective suggests a view to phenomena that is similar to that of adaptation approaches. It is also important to highlight that the transactional perspective, like theories of adaptation, deals with the description of the processes of change within a human in environment perspective.

Therefore, to a better understand the results of the case study, it is attempted to extract attributes from the configuration of the context. This is similar to the contextual approach that attempts to identify plausible contextual moderators of environment-behaviour relationships in a more predictive fashion. Similarly theories of adaptation consider context as a major facet that influences human behaviour. This would suggest that the theory of adaptation study's changes in human behaviour, which alternatively tend to influence judgement. Wapner (1981) set forth the principles for the transactional orientation as follows:

> " 1. The person-in-environment system as the unit to be analysed; 2. The person-in-environment system operates in dynamic equilibrium directed toward long and short-term goals; 3. Disturbance in one part of the person in environment system affects other parts in the transactional system as a whole" (p.244).

Wapner's description of the transactional orientation suggests cross similarities with the adaptation perspective as it also addresses man in environment, because theories of adaptation have a goal-directed nature for the purpose of achieving the best degree of fit, where one part of the system has effect upon the other. Both research in adaptation and the transactional perspective, attempt to explore how change occurs and its cause.

It was clear from previous discussions that the transactional perspective emphasised the importance of understanding the processes of change, though little attention has been drawn to determining the manner by which change occurs. As has been earlier discussed, social learning highly affects the net result of change and depends upon the degree of variation within the environment. This would suggest the importance of understanding all the aspects that may influence a particular phenomenon in order to understand change within the phenomenon. The following attempts to summarise the suggested theoretical approach for understanding the level of similarity between research on adaptation and the transactional perspective. The following attempts to consider independent elements from both perspectives in order to highlight some of the existing similarities and differences between them.

3.3.1 People

As has earlier been discussed, the transactional perspective treats people's transactions within the environment as holistic entities. Research on adaptation focuses on the way the individual and the group adapt to environments which is similar to the transactional perspectives, as they deal with human adaptations to the environment in an integrated manner. Thus, both look at people in terms of their behaviour and as actors within the environment rather than devoid of the environmental context.

3.3.2 Context

Transactional perspectives attempt to determine situational and contextual variables uniquely derived from an event, crucial for understanding a form of occurrence. Similarly, research on cultural adaptation determines factors from within the population and the environment at hand. Taking the natural environment as an example, these factors may be embodied in the bio-diversity existing within this environment, where different peoples adapt and adjust their modes of behaviour and life styles. Therefore both approaches acknowledge the configuration of the context as a vital determinant of human behaviour or a particular phenomena.

3.3.3 Holistic Unities

Research applied on cultural adaptation describes adaptation as being an attempt to achieve a level of fitness between man and the environment. One of the main objectives of transactional perspectives is to treat man – and – environment as the unit of analysis, meaning that any person should not be looked at as a passive observer, but as an aspect of an integrated unity of other social, temporal and environmental aspects. Theories of adaptation also address holistic unities, but in a rather indirect manner where the overall picture of events underlies the processes of adaptation. This can particularly be seen when adaptation is drawn from an ecological perspective, which draws attention to a global system where one part of the system influences another.

3.3.4 Time

It has previously been highlighted that the transactional view deals with the factor of time as an inherent aspect of phenomena. Similarly, evolutionary and cultural adaptations also indicate that the factor of time is an intrinsic element within the various processes of adaptation.

3.3.5 Change

In seeking to understanding the historic dynamic flow of socio-cultural and spatial change leading to the existing situation and how to expect the events of change, the transactional perspective focuses on the study of changing relations among psychological and environmental aspects of holistic unities. Similarly, adaptation approaches further attempt to determine changes in behaviour as a result of a particular change in environment. Research on adaptation goes into further detail to determine how the transmission of traits may cause change to occur[6].

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[6] This particular issue shall be traced by reviewing certain historic accounts of Cairo and its society within **chapter 10**.

3.3.6 Determining Change

Although the transactional perspective attempts to study the processes and flow of change, research on adaptation further aims to determine factors causing change, and the factors affecting the frequency of change, such as;

a. Identifying prototypical (determinant) aspects of behaviour and belief that may be passed on from earlier generations acquired through 'Guided Variation'.

b. Identifying the level of variation within the environment that may limit or enhance the level of social and individual learning, which may cause changes in behaviour and beliefs acquired through 'Biased Transmission'.
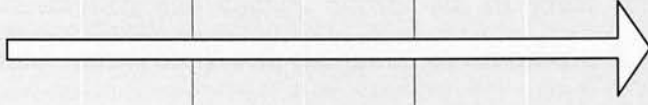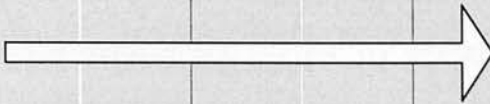
	ADAPTATION	TRANSACTION
PEOPLE: Looking at humans in terms of their behaviour and as actors in the environment rather than devoid of the environmental context.		
CONTEXT: Determining situational and contextual variables unique to the situation that are crucial for understanding a form of occurrence.		
HOLISTIC UNITIES: Approaching people and environments in terms of person-environment fit. The person-in-environment system as the unit to be analysed.		
TIME: Acknowledging that time is an essential property of holistic phenomena.		
CHANGE: Understanding the historic dynamic flow of socio-cultural and spatial change leading to the existing situation and how to predict change.		
LEVEL OF VARIATION: Understanding how and what causes change, and the factors affecting the frequency of change. In ever-changing environments, the need prevails in order to determine how much variation exists within a given context, which may prohibit or promote change.		

Table 3.2: The similarities and differences between the Transactional and Adaptation perspectives.

3.4   Model and Objectives

Table 3.2 shows that the transactional perspective attempts to determine how change may occur. It also illustrates that theory and research on adaptation is largely similar to that of the transactional perspective, therefore input from adaptation theories can help contribute to the development of the transactional perspective. In this case, details of how behaviour is transmitted and change occurs are of great importance to our understanding of human transactions with the urban environment. It is also suggested here that as cultural adaptation deal with investigating how and why changes occur, transactional research can make use of a large body of research in adaptation.

The required model is derived from **fig 2.2 (chapter 2)** and **table 3.2** and relates to the various descriptions within the table. It suggests that determining the level of variation within a specific context would help to determine the variables affecting the transmission of modes of behaviour and concepts through different generations (social learning). Determining the level of variation would give insights into understanding not only the rate at which the transmission of concepts occurs (amount of adaptive changes), but would further determine level of choice existing within the environment (see **fig 2.2**). As higher levels of variation facilitate adaptation to the environment, it would increase our understanding to whether or not the waterfront area is compatible with Cairenes' behaviours and perceptions of place. This raises the main goals of this research from which the model is designed to satisfy. The main intention is to examine the configuration of the context[7] and thus how people construe the waterfront area in Cairo, and are listed as follows:

1. From a socio-cultural perspective, it is important to determine current dominant factors that effect how Cairenes construe the waterfront area in Cairo, which is the specific context required to study. These factors help view how the place is evaluated[8].

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[7] The context in this case relates to the waterfront area and its surrounding region within Cairo.

[8] See Stage III **chapter 9**.

2. Relating to the context, it is required to determine main aspects from the present setting, which influence how the Cairenes construe the place, therefore suggesting an inquiry to identify the level of variation within the studied area in Cairo[9].

3. By identifying both the above issues it shall be helpful in determining the problems inherit in the incompatibilities between the context and perception of place. It would further help in deducting the type changes needed from both entities in order to increase the compatibility between Cairenes' perceptions and behaviour within places at a specific moment in time.

The objective from all the above three points is to determine how Cairenes construe the waterfront area in Cairo in a specific moment in time. They also attempt to determine whether or not the setting corresponds to how the Cairenes construe the place. This reflects the conception mentioned within **fig 2.2** (see **chapter 2**), which suggests that the higher the level of variation, the more freedom is granted to individuated choices. This further suggests that more variation would facilitate the ability for people from diverse backgrounds to adapt to a particular environment. **Fig 3.1** attempts to present the chosen model, with its inherent dimensions yet to be explored. The model shows aspects of perception, place and change. In order to avoid generalisation, these aspects are further defined within the vision of the model and its goals are further briefly described within the above three points.

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[9] See **chapter 8**.
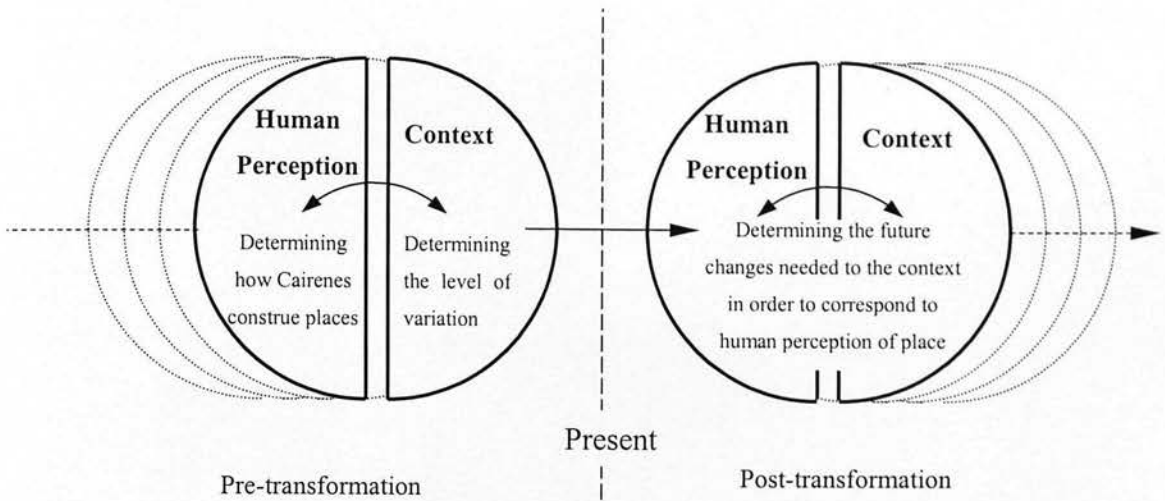
Figure 3.1: Model derived from the theoretical background showing the areas of inquiry.

Fig 3.1 further illustrates the factors relating to place (in particular the chosen area within Cairo) that may affect how Cairenes construe place. It is designed to determine the level of compatibility of Carienes' conceptualisations of place, which may or may not be compatible with the existing setting or with future modifications to the existing urban settings. Therefore, to acknowledge a particular moment in time and to attempt to determine the configuration of place and how people construe place, is the main objective of this model. The functions of the above model are to:

1. Suggest certain recommendations for further application within the waterfront area in Cairo, which is undergoing plenty of transformation. As the waterfront area is one of the most dominant aspects of Cairo's urban form, the required findings shall help in identifying how the places are perceived and used by the public[10]; and

2. Guide the research and therefore deal with a preliminary analysis of the *Context* within **chapters 7** and **8**. It further establishes the research sequence by applying particular analyses on *Human perception* of place within **chapter 9**.

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[10] The reason for the choice of the area of study is explained in more detail in **chapter 4**.

PART TWO

CHAPTER 4

PART ONE
(THEORY)

PART TWO
(CASE STUDY)

PART THREE
(CONCLUSION)

CHAPTER 1 — THEORETCIAL REVIEW

CHAPTER 2 — THEORETICAL BUILDUP — IDENTIFYING THE RESEARCH APPROACH

CHAPTER 3 — MODEL — CREATING THE MODEL

CHAPTER 4 — INTRODUCTION TO CASE STUDY

CHAPTER 5 — RESEARCH TECHNIQUE — OVERALL RESEARCH METHODOLOGY AND PROCEDURE

CHAPTER 6 — DESCRIPTIVE ANALYSIS — Part One — INTERVIEW ANALYSIS

CHAPTER 7 — CONTEXTUAL ANALYSIS

CHAPTER 8 — ANALYSIS OF HUMAN PERCEPTION — Part Two — QUESTIONNAIRE ANALYSIS

CHAPTER 9 — OVERVIEW OF RESULTS — EXAMINING THE RESEARCH FINDINGS

CHAPTER 10 — CONCLUSION AND RECOMMENDATIONS

CHAPTER 11

4.0   Introduction

As previously stated, one of the objectives of this research is to illustrate various issues in relation to perception and the physical configuration of Cairo's urban waterfront. Furthermore, it is important to further identify how both place and perception have undergone change. The designed model attempts to determine aspects that arise from within a context and which further relate to changes in the urban environment. This chapter describes the nature of the physical configuration of the waterfront and therefore serves as an introduction to Part Two of the research. This chapter is therefore divided into two parts.

The first part is a brief historical review of major changes affecting the basic urban structure of Cairo. It also intends to express various contrasts in the configuration of the urban structure from within a historical account and explain, through historical events, the various developments that Cairo has undergone. It primarily asserts the contrasting differences in urban form between the old and new settlements existing in Cairo to this present day. The reason for illustrating the differences in urban character shall later be described and related to the results of the analysis of the case study. At this point it is therefore found important to introduce the reader to the nature of the physical form of Cairo as it may also give background insights to the overall physical nature of the city and its inhabitants.

The historical review of Cairo sheds light upon the various periods of foreign occupation where various settlements have been constructed. This part sheds light on the evolutionary changes in the urban structure of Cairo that has undergone within certain stages in history initiated from the post Islamic period to the situation today. This is because this period

witnessed the initial development of the physical structure of the city, inhabited until the present day. These developments have a large bearing upon the physical form of the city and its social structure. As Cairo has undergone many transformations it is intended here to highlight various transactions between people and their environment, which may have large impacts upon the perceptions and attitudes of present day Cairenes.

The second part describes the nature of the waterfront area and serves as an introduction to the case study. This helps the reader to identify him/herself with Cairo and the nature of the chosen area of study. It describes, from basic observation, the surrounding area of the waterfront within Cairo. This part helps the reader to view certain elements of the waterfront, how it is configured and how it is currently used within its present state. Both social and physical aspects of the waterfront area, unique to the place shall also be clarified. In summary, this chapter explains the physical form of Cairo, as a description of its physical structure, throughout the past. It further helps one to understand the nature of the waterfront area at its present state, an understanding that is vital for a greater understanding to the results of the statistical analysis later introduced within the thesis.

4.1 Background to Cairo

The following describes various rules, decisions and eras of occupation as a background introduction to the context of Cairo. This sheds light upon various constructions and demographic and ethnic changes that the city has witnessed. This description covers the medieval, and later modern events that has shaped the central parts of the city as it is today.

It must be noted that the historic and physical descriptions presented within this chapter and **chapter 10,** has been largely derived from Abu-Lughod's book, *Cairo: 1001 Years of the City Victorious* (1971), considered one of the most significant and extremely detailed accounts of Cairo. Her writings link both the historic accounts for the city with the changes in the physical form. Other accounts later described within the era of the British colonial rule heavily relied upon Tignor's book, *Modernization and British Colonial Rule in Egypt, 1882-1914* (1966). These books have helped shed light upon the issues that deal with the existence of differences and contrasts in the physical form of Cairo and the various ethnic origins of its inhabitants and rulers.

4.1.1 Medieval Cairo

Al-Fustat[1] was the first Arab settlement in Egypt, and was established by Amr Ibn El-As and built the first mosque in Egypt, which established Al-Fustat, by that time Cairo was still a young city by Near-Eastern standards. During the Umayyad Caliphate[2] (661-750), not much building took place as the Umayyad monuments were built in Syria, Trans-Jordan and Palestine. Later the Abbassids put an end to the Ummayads in Syria and succeeded the Caliphate. During the Abbassids and Tulunids (750-935), governors appointed by Baghdad had ruled Egypt. Ahmad Ibn Tulun who founded his city became independent from Baghdad and founded his own dynasty (870-935). Three monuments date from this period, the Nilo-meter, Mosque of Ibn Tulun and the Aqueduct of Ibn Tulun. The Fatimids (969-

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[1] Al-Fustat means "the camp".

[2] After the assassination of Othman the Umayyads who were Othman's relatives took over rule in order to take the succession of leadership from the Rashidun Caliph's.

1171) who came from Tunisia founded Al-Qahirah[3] (Cairo), which became the Fatimid capital by 973 A.D. This became the nucleus of the medieval city until the western expansions in the 19th century. During this period and under the fifth Caliph Abu Mansour al-Aziz (975-996) the Fatimid Empire reached its peak, with the building of mosques, bridges and palaces. This period witnessed numerous monuments, the most important being the Azhar mosque, the sanctuary of al-Guyushi in the Muqqattam hills, and three city gates, Bab al-Futuh, Bab al-Nasr and Bab Zuwayla (Parker, B. & Sabin, R. 1974).

For over 550 years, Cairo had been ruled by extensive Fatimid, Ayyubid and Mamluk Empires, at which Cairo had been an unrivalled commercial centre of the world. At this time Cairo had been the largest city of the Middle East and Europe, a model of culture for the Islamic world. During the 15th century, despite political disorders and declining agricultural trade, Venetian trades brought prosperity to the Mamluk's empire. Venetians routed their commercial exchanges through Egypt, by which the Mamluks levied high fees at each of the several ports.

Vasco da Gamma's successful circumnavigation around Africa and his arrival in India in 1498 later, broke Cairo's economy and role in the world. This discovery had been the most important discovery within the 15th century, which withdrew the trade route from Egypt. The Portuguese imposed a virtual monopoly on the trade and gained access to the Persian Gulf and the Red Sea. This discovery had a great impact upon the Mamluks, which were later unable to stand up against the Turks, whom diverted their attention from Europe and Persia, towards the Mamluk's Empire.

After passing into Turkish hands, Cairo became a provincial capital subordinate to Constantinople, leading to the loss of its independence and power. Two generations later, the old Mamluks regained their former power from the Ottomans. By then, Constantinople had attracted the intellectual and artistic talents, which had formerly been concentrated in Cairo. Particularly through the seventeenth and eighteenth century the conditions of Cairo had deteriorated. The Mamluks had their say in accepting or rejecting Turkish figurehead

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[3] Al-Qahirah, meaning "The Conqueror" , was a name assigned by the Fatimid's to their newly founded city. This name for Cairo remains the same to this present day.

governors (Pashas), who had little say and were completely dependent upon the Mamluk Bays[4] for their power.

During the last quarter of the 18th century, taxation on farmers had increased, forcing them to desert their crops and villages. Famine left the public granaries of Bulaq empty, furthermore a plague imported from Constantinople in 1783 in the same year as with an inadequate Nile flood, lead to further decline in the population. This was followed by a Turkish re-occupation of Egypt in 1786-1787, which led to a chaotic state in the city streets.

Before the time of the Turks, few foreigners lived in Cairo, except for few Venetian merchants who were involved in the spice trade from India. The French, who were competing with their earlier rivals, the Venetians and the English, in furnishing European goods, largely dominated the foreign community after the Turkish reoccupation. Insecurities among foreign traders later heightened due to the Ottoman's restrictive policies and hostility on behalf of the inhabitants. This harassment of the foreign French merchants was used as Napoleon's excuse to legitimise his later invasion of Egypt in 1798, and to further strike against the British. Napoleon not only wasted his troops by bringing them to a land of deprivation, but he attracted the British fleet. The French occupation lasted three years and ended in the destruction of the French sea power at Abukir bay at the hands of Lord Nelson.

The deterioration of the city during the rule of the Turks and Mamluks by the end of the sixteenth century was largely noticeable. The prosperous years of Cairo were soon forgotten, not only at the hands of its rulers, but also largely for the changes in world trade and commercial routes. Cairo was a reflection of the decline in the Turkish Empire and the whole of the Mediterranean.

In comparison to the Mediterranean decline, Europe had undergone pronounced improvements during the sixteenth, seventeenth and eighteenth century. By the 18th century, European cities were seeing relative improvements in comparison while Cairo had

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[4] Higher rank Mamluks.

undergone an accelerated decline during the Ottoman Empire. Public works and maintenance was neglected and lands were out of cultivation, which caused a large decrease in population.

In 1847 Europe and Egypt were being acquainted through transportation links and the number of residents within the city of Cairo, including Misr al-Qadimah and Bulaq, had not yet exceeded 300,000 inhabitants. At that time, although the expansion of the existing Greek community and the steady but little growth, of Italian and French, the overall population of Europeans was still not significant. During that time Egypt was still semi-autonomous from the Ottoman Empire and had been controlled by Easterners, Westerners had remained an unrecognised minority with little attention paid to their requirements.

It was only until 1897 that a British representative governed Egypt despite it being within the Ottoman fold. European nationalities monopolised the important government posts and enjoyed exemptions, privileges and a lifestyle that their countrymen back home would envy. By that time the economies and destinies of both Europe and Egypt became highly dependent upon each other. Egypt during the later half of the nineteenth century witnessed a demographic and agricultural revolution within the country and was embodied in the expansion of Cairo beyond the western limits of the city and reaching the edge of the Nile.

4.1.2 Modern Cairo

During Muhammad Ali's[5] era, the country had been inward looking, in comparison with Abbas Pasha[6], the latter being involved in the construction of the railroad between Alexandria and Cairo. Muhammad Ali was also involved in founding a small military city in the desert outpost, which was named after him "Abbassaiyah"[7]. This railroad had drastically altered the link between Cairo and the world, as it usually took days to reach Cairo from Alexandria, now it was only a matter of hours. The location of the terminal at Bab al-Hadid would later have major effects upon the development of the surrounding area and encouraged both European and native immigrants to the area.

Muhammad Ali's youngest son, Muhammad Said was Abbas' successor, and soon Ferdinand de Lesseps contacted Muhammed Said and congratulated him for his accession. In turn de Lesseps received an invitation to Egypt then proposed to Said the "Canal de Suez" project that would later be one of the most important projects which would later heighten Egypt's strategic role in the world. Said agreed upon his proposal but it took almost twelve years of negotiations for the Sultan's agreement.

By 1859, de Lesseps raised the capital he needed and started construction of the Canal. The completion of the canal was finalised after Said's death. As the Canal's importance became clearer, this had large bearing upon the increasing importance of Cairo that had never witnessed such a position since the 15th century. Unfortunately this drew large attention from the Europeans and eventually ended in the British occupation.

During the American Civil War, American cotton supplies had been withdrawn from the international market, which therefore provided leeway for Egypt's later imminent cotton-

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[5] Muhammad Ali was originally a Turkish ranking officer and ruled of Egypt.

[6] Abbas Pasha was the nephew of Muhammad Ali and later the successor to Ibrahim Pasha, who was Muhammed Ali's son. Ibrahim Pasha was recognised in 1848 and confined as Pasha, but later that year he deceased, and Abbas Pasha took his place.

[7] Abbassaiyah is currently a well-populated area of Cairo.

boom. Both this and Ismail's inherited interest from his father Ibrahim in urban enhancement catalysed Egypt to an accelerated pace of growth and increased foreign intervention in the form of contractors and financiers.

Ismail further constructed the Ismailiyah Canal from which new quarters within Cairo were created "Ismailiyah" and "Fajjalah". By 1866 the Ismailiyah Canal had been completed and thus siphoned the Nile water from the south of Bulaq and created new and permanent land within the city. Once the embankments of this land (Rawd al-Faraj and Sahil) had stabilised, the new land later served as the northern extension of the river Port of Bulaq.

Later in 1865 Cairo established both the Cairo Water Company and the Cairo Gas Company which provided gas to Cairo and the suburbs of Bulaq and Misr al-Qadimah. By 1867, Cairo was prepared for a new era of building that had been stimulated after Ismail Pasha's visit to the 'Exposition Universelle' held in Paris. The exposition demonstrated to its visitors how the city's transformation had undergone by Baron Haussman's plans from which he proposed peripheral zones, a formal park and broad boulevards. The *Universal Exposition* displayed those accomplishments to the world. This exposition deeply impressed Ismail from which he had observed the transformation of Paris since the time he had earlier visited as a young man attending the military academy of Saint Cyr in 1854. Therefore his second observation of the renewed capital must have renewed his inspiration and motivation.

Straight after this, Ismail was promoted in Turkey, from Pasha to Khedive, he returned to Cairo that had been in contrasting 'lack of beauty' in comparison to Paris (see **fig 4.1**). By then he had plans for making his own exhibition and celebration of the grand opening of the Suez Canal, and therefore Cairo had to be cleaned and 'polished' in order to impress his visitors. There was not much time to make those major improvements before the opening of the Canal, therefore the western edge of the city had to be enough and visitors were to be confined to the new facade of Cairo. This led to increased neglect of the eastern and older side of Cairo.

It was important that these improvements were finished on time and Ismail appointed Ali Pasha Mubarak as Minister of Public Works. This was in order to supervise the execution

for the Ismailiyah quarter, redeveloping the older and vacant lands at the periphery of Azbakiyah and drawing up a master plan for the whole city congruent with the style of Paris.

During the following two years, between 1867-1869, Cairo witnessed one of the earliest and major municipal improvements. Before the trip to Paris, Ismail had the idea to build additional areas to the north, via a road to Bulaq and on the west via a road to Misr al-Qadimah (today Shari al Qasr al-Ayni). In order to speed up development, Ismail offered lands without charge to the wealthy merchants and princes, in order to build villas surrounded by gardens. Streets and utilities could only be created by royal approval and the private demand could not be satisfied. Ismail's reign resulted in the building of 200 houses and palaces within the western part of the city extending from Shobra down to Ismailiyah. The British later built their colonial city within the existing lines of the French styled district.

Azbakiyah had undergone evident changes during the two years before the opening with new streets and apartment houses to the north of Azbakiyah Gardens. Roads had been built to serve the area between Bab Al-Hadid and Azbakiyah and the old bed of the canal which past the north and east of the gardens. A new thoroughfare was set out from al-Atabah al-Khadra at the Southeast corner of Azbakiyah and followed a diagonal course to the Palace of Abdin. Furthermore the Azbakiyah garden was redesigned by an imported French Landscape architect who designed the gardens in French style. A German architect was further assigned to design Ismail's Palace on the Jazirah (Island of Zamalek) which was intended to be the temporary residence of Empress Eugine, his most distinguished visitor. The Palace had been planned to integrate with a formal park designed by Barillet Deschamps that would cover the whole of the Jazirah[8].

It was important that the Royal guests would have access to the pyramids, one of the wonders of the world and the existing access was by donkey back and was an uncomfortable ride as it passed a series of dykes. Therefore an elevated road was constructed that would allow carriages to pass and directly led to the base of the pyramids.

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[8] Jazirah meaning, "island" is currently the island of Zamalek.

Another palace was built at Jizah on the western bank, where ferries and small wind propelled boats were the only means of crossing from one side to the other. This led to a growing need to construct bridges in order to connect east and west and to allow Empress Eugene access to her apartment at the palace in Jezirah. The French firm Fines-Lilles was assigned to construct a swing bridge at Kasr el-Nil in order to connect the Eastern Shore with the southern tip of the Jazirah. To complete the connection from the other side of the Jazirah to the western shore across the narrow span of the Blind Nile, another smaller bridge (Kubri al-Jala') was also constructed and was completed by 1871 and the swing bridge was completed the following year. Thus the connection of both the eastern and western banks had been finished. This later helped the city to expand to the western bank.

Ali Mubarak's plans was directed to solve the problem of increasing traffic by breaking through the medieval city and was initially implemented by the opening of the first section of Rue Nueve (al-Sikkah al-Jadidah, see **fig 4.2**). This road was then further extended to the eastern desert and the plan contemplated future longitudinal and latitudinal thoroughfares that were not meant to be.

The western part of the intended squares and streets was found easier to implement, as the squares (mayadin) where easier to locate within to a pre-existing birkah (lake) at Abdin. Bab al-Hadid also required no clearance and Muhammad Ali square only required peripheral land requisition and was accomplished at the period between 1873-1875. The three mayadins at the borders of Azbakiyah gardens, Khazindar, Opera and al-Atabah al-Khadra were also completed with little difficulty, as they were located in vacant land sites.

The medieval city revealed its lack of attention without any parks or street trees. Transport in the older city was usually conducted by animal back or on foot, while the new city was entered by railroad or horse drawn carriages. In contrast the French formal garden strips with flowerbeds and geometrically shaped trees, lay in display as a presentation of foreign aesthetics. Despite the physical adjacency of both areas, socially and technologically they were miles apart. Fig's **4.1** and **4.2** show how the intended grid plan of Ismail that had juxtaposed the older quarters in grey.
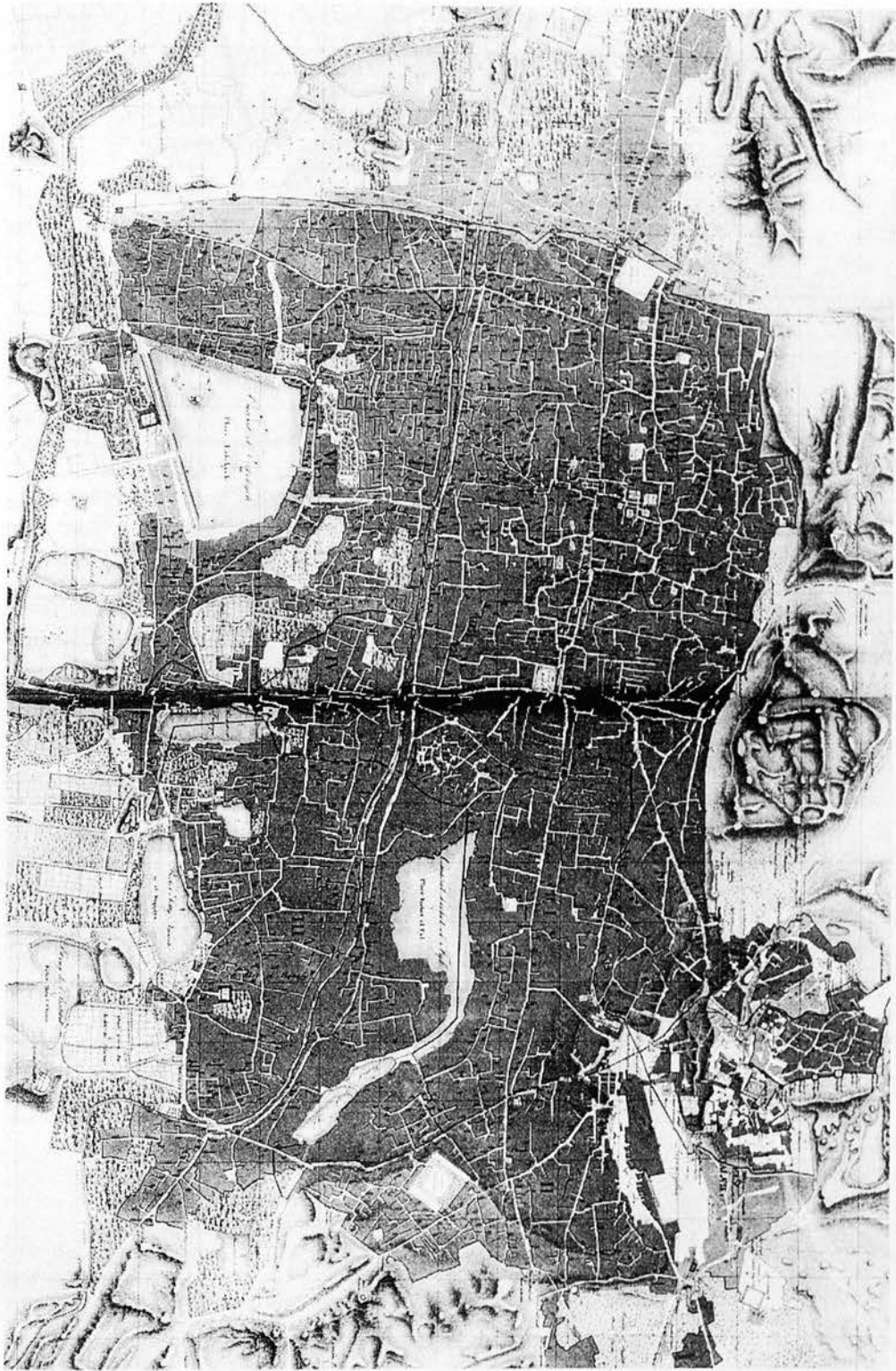
Fig 4.1: The street pattern of the old city of Cairo during the French expedition.

Source: Abu-Lughod, J. (1971)
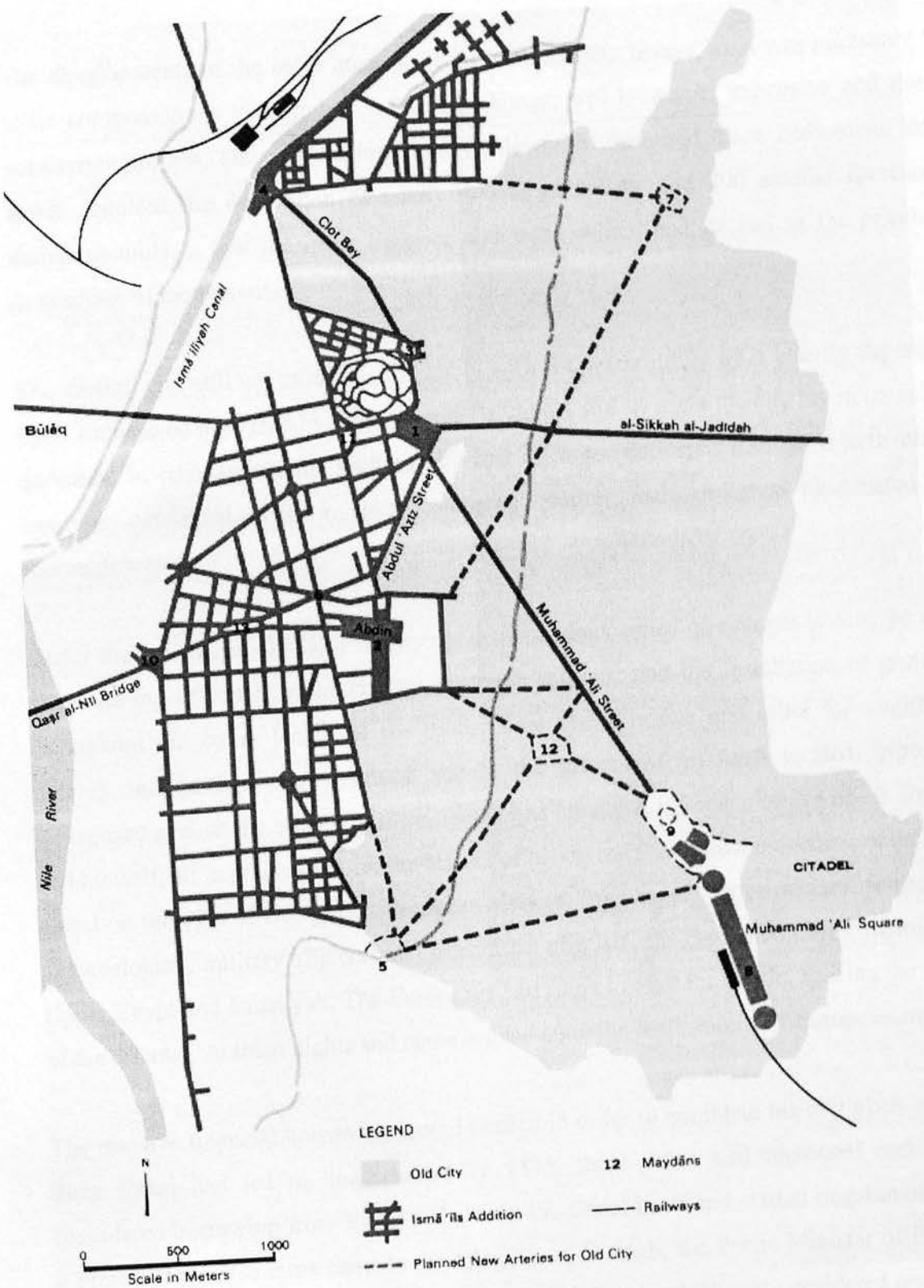
Fig 4.2: The proposed development plan of Cairo during Ismail's reign

Source: Abu-Lughod, J. (1971).

The developments of the older areas suffered from lengthy delays, as it was necessary to settle compensations to demolish existing buildings, which was an expensive and time-consuming process. The construction of the Boulevard Muhammad Ali, a 2-kilometer long street, required the demolition of nearly 400 large houses and 300 smaller dwellings including mills, a few mosques, bakeries and baths which had its toll in the priceless destruction of monuments.

The eastern city still contrasted considerably with the western city as it heavily depended upon water to be delivered by itinerant water peddlers and by night the city lay in complete darkness. In comparison, the western city had its water delivered through a network of conduits connected with a steam pumping station and gaslights illuminated its thoroughfares.

Under the era of Ismail, Cairo underwent a tremendous series of changes within the city. The building of canals, railroads and telegraph stations, and the installation of gaslights throughout the entire length of the roads, Kasr el-Nil bridge and other thoroughfares, palaces and gardens were planned and in the idioms of an ideal western type city juxtaposed against the older city form. Ismail had created a European image of his country and himself, all in preparation for the climax of his career, the dramatic opening of the Suez Canal on the 17th of November. European visitors, from royalty to physicians, journalists, archaeologists, military officers and government officials, etc., swarmed Cairo, Alexandria, Upper Egypt and Ismailyah. The Europeans had came to visit the exotic, seeking the world of the oriental, Arabian nights and came instead upon the realisation of a European city.

The massive financial borrowing Ismail needed in order to complete his city plans and the Suez Canal had led to huge debts. By 1875, these debts had increased and Ismail considered borrowing from Egypt's shares in the Canal itself and started negotiations with a French firm. This issue came to the attention of Disraeli, the Prime Minister of England who at that time bought all of Egypt's shares in the Canal, which was considered one of the most significant financial coups of history. The result of this bargain later led to the English financial management of Egypt and the further English military occupation of the country. This occupation came after Ismail had had enough of foreign control and later dismissed his

foreign, English, Minister of Finance and French Minister of Public Works. This led the French and English to pressurise the Turkish Sultan to dispose of Khedieve Ismail. Cairo had begun a new phase of history where Lord Cromer, who later ruled Egypt, inherited the country at the verge of a revolution under Colonel Urabi.

During the occupation, Britain focused upon re-organising the agricultural land in order to increase productivity, and mainly focused upon the production of cotton. This brought the rural economy to a much closer inter-dependant relationship with the urban economy (Tignor R., 1966). They improved the barrage at Qanatir that had been neglected since Muhammed Ali and by 1891 the barrage was in operation.

Between 1882 and 1897 Egypt had massively increased in population as had Cairo, in the form of migration from the rural areas which shaped the bulk of the population swell. Similarly, Greeks had come in search of commercial opportunities and there were many Italians linked in with the machine shops and small industries. Adventurers were attracted from France, Switzerland, Belgium, Sweden and England in search for opportunities, as they were granted immunities, which they exploited. Furthermore, minority Armenians, Jews and Syrian Christians also increased in numbers and power. English people from the military and administrators were also sent under the occupation (Abu-Lughod J. 1971).

The spaces that accommodated the increasing numbers of foreign migrants were adjacent to the city that had been planned during Ismail's rule, but were not sufficient to withstand those large numbers. The Azbakiyah Gardens had been provided with taller, tightly spaced buildings, apartment blocks and commercial and financial buildings around the older villas and smaller apartment buildings. Jewish and Greek merchants occupied the major commercial areas at the Muski area which was just to the east of the Azbakiyah Gardens and extending to Maydan el-Opera (Opera square). These merchants provided western goods to the indigenous population.

Government buildings were located within a parallel strip to Kasr el-Ayni street and further south of Bab al-Luq, which originally contained the Ministry of Public Works at the time of Ismail. The location of those administration buildings required a great demand for housing those civil servants in close vicinity to this area. This led to building large white Victorian

mansions, mainly for the foreign "advisers", which were constructed along the western edge of the city together with apartment buildings for higher-ranking Egyptian officials.

Thus the new city had developed and were based upon Ismail's planned city and by 1896 the modern city filled in the spaces of Ismail's earlier plans. The population of Cairo by then approached 600,000 inhabitants. The old city had been left in its original condition, where the abandoned areas had been reconstructed in its old pattern to accommodate for the large numbers of rural migrants.

Apartment buildings were built to the north of the existing city which extended the old Coptic area to the Fajallah districts, to release the overcrowding existing at the Coptic quarter. Wealthy Christian merchants and European migrants created the middle class zone and existed in the zone of Shari Clot-Bay and Shari Nubar Pasha, which was directly connected to the new business district near Azbakiyah.

The following attempts to follows on from this historical account by presenting the present day physical state of the city and in particular the Nile waterfront area. It stresses upon illustrating the choice of the Nile waterfront area, describing the physical and social attributes, and the importance of the place within the city.

4.2   Choice of Case Study Area

It should be noted that at this point that the reader might speculate on the intention of choosing this area for studying, whether the choice was made for theoretical development of place construal or for the purpose of examining the proposed area of study. It was therefore found necessary to highlight that the waterfront area has not only been used as a tool for exploring how Cairenes construe public areas. It was also intended to explore the potential significance of the waterfront, as public space needed for future regeneration and development of the city itself. This is found essential for devising a framework for better understanding how Cairenes use and perceive the waterfront area and other public areas within the city.

While, the exploration of place judgements was the prime direction of the thesis, however, further exploration of the character and urban configuration of the waterfront as a place well used by the public, was found extremely important for understanding how Cairenes construe place. It suggests that the research be also directed towards exploring aspects of the Cairene waterfront setting and how it affects the Cairenes use and perception of the place.

As the research explores both the theoretical model and the Cairene waterfront, the above discussion simply reflects the nature of the proposed model that guides the research. This is due to the fact that the model also suggests that perception, behaviour, and context, are all collectively considered in a holistic manner. Such an approach further indicates that aspects of place construal and the context of the waterfront area are both considered as one phenomenon. It would consequently confirm that both the context and people's perceptions are accounted as mutually defining each other. The proposed model therefore deals with people's perceptions and behaviours that are tested against the nature of the context and vice versa. Theoretically speaking, results of this research would inevitably appear embodied within the nature of the physical context and within people's judgements and behaviours, thus relating to *human* nature and the *context* at hand.

The following part is mainly introduced in order to describe *Why* the Nile waterfront in Cairo has been chosen and *How* Cairenes' use this place. It consists of a basic illustration of the main features along the waterfront area within Cairo. Physical aspects

of the place and some behavioural aspects are introduced in a generalised manner, and serve to describe the studied area. However, the main aspects of the waterfront area that are of major concern to the thesis, are later introduced after the analysis of the case study. It is therefore necessary to stress again that this chapter is merely a descriptive introduction to the chosen area of study. The main objective was to purposively choose an area of high importance within the urban fabric of Cairo, which is largely in use by the Cairene public. The chosen area is well known to the Cairene public as it penetrates within Cairo in a north-south direction and exists in a central location within densely populated and central areas of the city.

Therefore the following endeavours to partly describe the geographical location of the city within the Egyptian landscape, the importance of the physical location of the Nile waterfront within the city and the physical form of the city and the water-edges. It is also important to highlight the dominant role of waterfronts within the Egyptian society and various locations within Egypt.

4.2.1 Geographical Location of the Cairene Waterfront

The Egyptian landscape is unique in its character, having cities and towns inhabiting areas closely situated to the River Nile. Within the Cairo region the landscape can generally be classified from centre outwards into three main categories. The built urban environment adjacent to the Nile River at the centre, the agricultural lands at the outer boundaries of the city, and finally the contrasting nature and colour of the desert lands (see **fig 4.3**). Thus these desert areas extending beyond the Nile Valley are of comparatively less interest to the population and are usually not visited other than by highways for the sole purpose of moving from one part of the city to another. Currently the desert lands on either side of the highways are being sold by the government in a campaign to transform these areas into potential agricultural land through irrigation.

The nature of the landscape character has always been the cause for people being attracted to places that are central to the Nile Valley and Cairo. This increases the significance of River Nile to the people, as it becomes a prominent feature of the physical form of Cairo. This dominant feature that exists at the centre of Cairo, intensifies the relationship between the people and the Nile, which in turn increases the population's familiarity with the Nile waterfront. Though, waterfronts within Egypt are

major attraction points for almost all of its cities, this is not the sole reason for people being attracted to the Nile. With respect to Cairo, visiting the Nile may also be a result of the milder climatic conditions and the lack of alternative public space within the city. This is due to its location and size, since it constitutes to one of the scarce numbers of 'breathing' spaces in contrast to the densely built city.
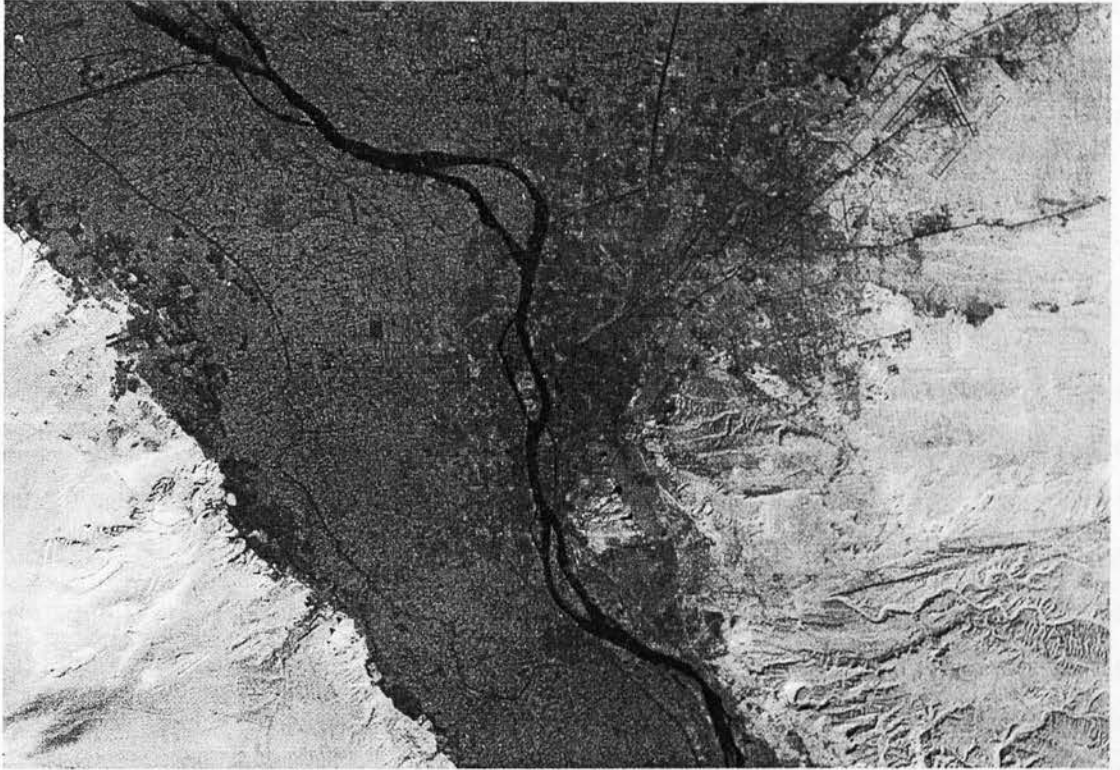
Figure 4.3: Simulated natural-colour Landsat TM image of Cairo. Width of the image is 70km.

Source: Drury S.A. (1990)

The River Nile taking a South-North course extends through the heart of Cairo. Cairenes come to the Nile front as an escape from the over-crowded city life. This is similar to the European desire of escaping to vegetated natural environments valued for their inherent contrasting qualities in comparison to city life, as it offers contact with open green spaces, water, escape from crowds and a healthier and fresher environment. In Egypt, this behaviour is mainly observed during the evenings, particularly after a hot summer's day. Cairo is surrounded by the natural places (i.e. with little human influence) in the form of desert lands. The only green areas that presently surround Cairo are limited to agricultural use, thus leaving no space for visitors other than the roads that function as service routes to these lands. Cairenes are therefore left with little

choice for places to 'escape', unless they manage to afford chalets in recreational resorts along the coasts the nearest being some 150 km. away.

Easy access to open spaces and healthier places in the urban environment is limited to long strips of green areas situated within central embankments along major traffic routes, originally made for vehicular access to and from the city centre. A city of up to 12-13 million inhabitants and graded as being the most air polluted after Los Angeles, greatly lacks open space. Difficulty in commuting to remote parks makes the Nile waterfront the final frontier for the residents to temporarily escape the hubbub of urban life.

4.2.2 Planning Policy

Due to the large numbers of migrants from the rural areas to the city seeking better opportunities, there was an increased demand for residence. In the 1980's the landowners of vacant land or villas realised that the value of their properties would increase. This, together with the increase in demand for apartments to support the growing Cairene population, led to the development of many high rise apartment buildings in central areas of Cairo, reaching up to 30 stories high. Demand for apartment flats with views upon the River Nile caused further increases, both in property values and in building heights. This lead owners of apartment buildings located in heavily built areas deep within the city to increase the heights of their properties in order to sell higher priced flats having better views and at times a "view" to the River Nile.

The planning policy in Egypt, though currently concentrating on carrying out its proposed regulations on high rise buildings, has neglected the implementation and supervision of its laws in the 1970's and through the 1980's. This has led to a vast number of buildings in Cairo exceeding the height regulations. Lack of professional feedback and in-awareness in the 1980's on behalf of the government resulted in large-scale land selling along the Nile frontier to developers with no prohibition on the type of land use in such places. The prevailing characteristic along the urban waterfront is that of high rise hotels and apartment and office buildings. The skyline along these banks, subscribing to no significant architectural order, have not been subject to much law enforcement, and laws have been broken to suit the profit interests of the owners. This

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has led to the blockage of views and vistas leading to the waterfront. In turn this has generated poor air quality in the heart of the crowded and polluted city of Cairo.

Regulations in Egypt do exist, nonetheless, and have been enforced particularly within the last decade with an increase in the awareness of such problems. Planning development in Egypt mainly stresses upon larger scale development schemes for building new towns such as 'Sadat City', '6th of October City' and the later investment oriented projects, 'El-Rehab' and 'Dream land'. This has led to the usual neglect of the smaller scale developments and urban renewal projects. Meanwhile, it must be noted that there is no landscape architecture profession currently in existence in Egypt and architects and urban designers have little influence upon outdoor spaces in the urban environment, since such developments are in the hands of governmental technocrats. Nevertheless, this may also be a factor in the neglect and lack of awareness on behalf of the public and the policy makers in order to direct their attention to smaller scale development projects.

Now high rise hotels, apartment and office buildings dominate the current skyline of Cairo's waterfronts which, as earlier mentioned, leads to views being blocked, poor air quality, and limits the number of open spaces for public use (see **figs. 4.4, 4.5 and 4.6**). Even public water edges have been transformed into privately owned restaurants, small plant nurseries that effectively deny valuable space that could allow public access to the water-edges. These plant nurseries may have been located in order to allow for so called 'green areas' to exist within an air polluted city. However, it is clear that these spaces have become isolated areas that at times prevent views to the Nile from the walkways (see **fig 4.7, 4.8**). In other instances, views are blocked and public's access are denied to spaces along the waterfront due to the presence of mobile and stationary boat restaurants along banks. At times the boats do not block views, however it is the occupied spaces leading to these boats that deny the existence of a sequence of 'un-broken' walkways and spaces to be situated along the waterfront (see **fig 4.9 and 4.10**). All of the above issues position the walkways as a 'secondary' space in contrast to the privately owned spaces.

Figure 4.4: High-rise apartment buildings on the waterfront strip at Giza.

Figure 4.5: High-rise apartment buildings on the northern waterfront.

Figure 4.6: Hotels and office buildings occupying central areas of the Cairene waterfront.

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Figure 4.7: Water edges occupied by
plant nurseries, with walkways to the
back.

Figure 4.8: In many cases, restaurants or cafeterias
along the river occupy the water-edges, blocking views
from the pedestrians.
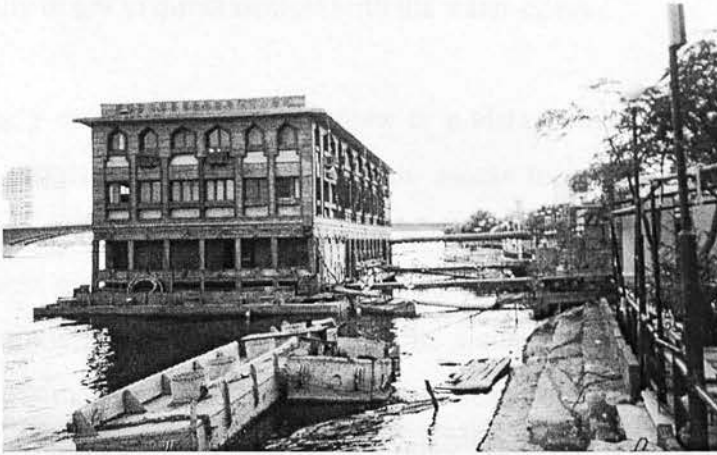
Figure 4.9: Example of a non-mobile floating restaurant, located at the water edges.
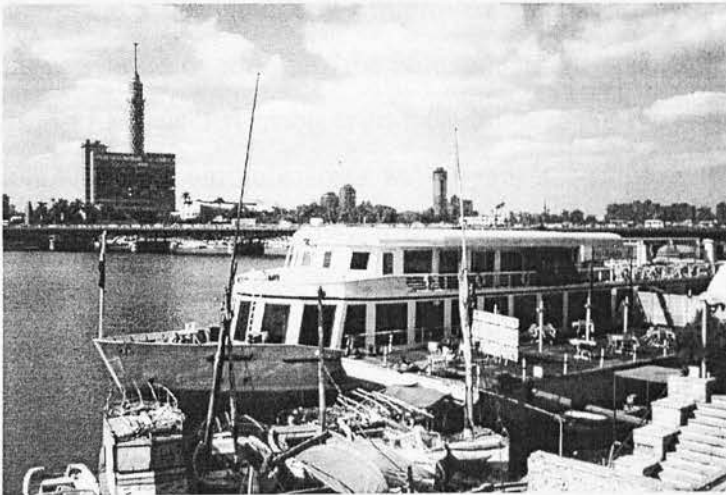
Figure 4.10: Example of a cruising restaurant boat surrounded by falookas (sail boats), both used for recreational purposes.

Fig's 4.11, 4.12, 4.13 also illustrate how other spaces are occupied by certain restaurants and cafeterias that tend to reach far out as close as possible to the water edges. In many cases these cafeterias deny people the opportunity of using the water-edges as they are forced to pass from behind these places. This also inevitably denies the public to get in direct contact with the water-edges.

Seemingly every place having a view or a vista to the Nile becomes a focal point for private properties, thus denying public access to spaces along the Nile. The current walkways also deny the connection between various areas along the waterfront, as restaurants and cafeterias, which lie in direct contact with the water, frequently cause interruptions along their lengths. All the water edges are mostly treated in the same manner, with long interrupted and functionless walkways parallel to the Nile from one side, and busy traffic roads from the other. These walkways are separated from direct contact with the water edge due to their treatment with brick breakwaters and walkways along the top (see **fig 4.14, 4.15**).

Lately there have been moderate improvements along parts of the water edges by allocating new areas overlooking the Nile, which are open to the public. The first stage of the project has selected space, within central areas of the waterfront, namely the Kasr el-Nil area. As soon as these areas were open, it was clear that large numbers of the residents visited and further crowded these areas, particularly during national holidays and religious celebrations (see **fig 4.16**). It was also clear that the designated areas for further development were already in actual use, on behalf of the visitors and the boats for hire that occupied them before the completion date (see **fig 4.17 and 4.18**). These busy places attract many small snack cubicles, and serve the visitors of these places during the evening hours. People walking and eating outdoors and further hiring boats are activities that mainly represent typical Cairene behaviour along the waterfront.

The existing water edges to the north and south of central areas are usually dark places at night without much illumination in contrast with the buildings and restaurants located along the central area of the waterfront, thus giving little alternative for people to choose from. Therefore, lack of other public open places increases the attraction of people to the Nile banks within central areas of Cairo.

Figure 4.11: Example of a hotel restaurant occupying the water edges.

Figure 4.12: Cafeteria located at Kasr el-Nil area.

Figure 10.13: Example of a private cafeteria located at the Manial waterfront.

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Figure 4.14: Example of walkways along breakwaters on the northern waterfront.

Figure 4.15: Water-edge of Zamalek with breakwater and random vegetation.

Figure 4.16: Newly designed pedestrian areas at Kasr el-Nil have been heavily used ever since the public opening.
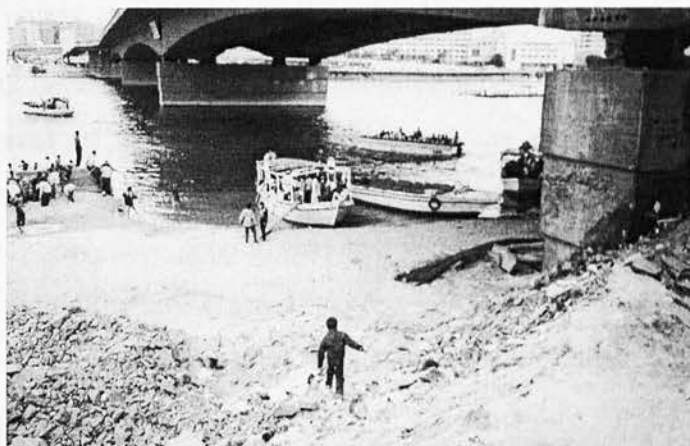
Figures 4.17 and 4.18 show the construction site in preparation for locating more spaces along the water-edges. The public and the boats for hire have used these areas during their periods of construction.

Figure 4.17

Figure 4.18

4.2.3 Cairene Behaviour along the Waterfront

When identifying places and the functional use of these places, there is a need to understand the different populations and groups inhabiting Cairo, as well as their behavioural patterns and their intentions when visiting that place. The central residential areas of Cairo live in the districts of Zamalek, City centre, Mohandiseen, Dokki, urban Giza, Manial, Bulaq Abo el-Ela and Kasr el-Einy, and shape the majority of residents living within central areas along the waterfront. Zamalek and Manial are two existing populated islands along the Nile, where the former island, exists north of the latter. Along the edges of these islands the Nile becomes narrower, giving shorter views from one riverbank to the other. These parts mainly lie in complete darkness during the night, thereby deterring visitors. To the south is the populated district of Maadi, and to the north exists the areas of Shobra, Shobra El-Kheima and Imbaba.

During the daytime working hours, there always seems to be a rush around in a rather fast pace within central areas of the waterfront. People in the streets are usually searching for some means of transport, to take them to their required destinations. During the hot hours of the day, few people visit the water edges for recreational purposes. The water edges within the city accommodates several water bus stations but these are not heavily used by Cairenes. This is due to the small number of stations, slow pace of the water-buses and the fact that their destinations are limited to the Nile route, which only covers a North-South direction within the city. **Figures 4.19, 4.20, and 4.21** show the variety of boats used along the waterfront, which vary from water-buses to cruising restaurants, and other recreational boats mainly hired by groups.

Figure 4.19: Tour boats.

Figure 4.20: Cruising restaurant.

Figure 4.21: Nile water-bus

Existing trees which have overgrown, have done much to partly shade the walkways, at the cost of blocking views to the river. Furthermore, the paved walkways have scarce seating areas and these tend to be located adjacent to fumes and noise of major traffic routes. Those water edges at lower levels (i.e. closer to the water) are not well equipped for the use of people. In summer the daytime behaviour of the Cairenes contrasts with that of evening hours. During summer days, the heat does not encourage many to visit the water edges outside the shaded areas. However, during the holidays and weekends Cairenes from the suburbs come to the waterfront, where people buy tickets for the water-buses and other boats, not only for transportation but also for recreation.

The '6th of October' overpass and other bridges[1] attract people as they all cross the River Nile. This behaviour is popular as the bridges afford the only open views within the city and the experience of the fresher cooler breezes that sweep along the Nile River (see **figures 4.22** and **4.23**). This behaviour is frequently observed, as the water edges have usually lacked spaces for public use. The number of people gathering on the bridges is only exacerbated by the lack of shaded spaces for public use along the waterfront. The hot daytime hours are mainly avoided, in contrast with the later evening hours, which see a slower and more relaxed pace of life. People are seen to go out mainly in order to escape the built-up heat in their concrete buildings, accumulated during the daytime hours. At the end of day, it becomes evident that the attraction of the people to the Nile is most commonly seen on these bridges as they face the cooler evening breezes.

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[1] This overpass and other bridges initially function as express-ways across the Nile connecting places in an East-West direction.

Not only does this little waterfront include attractive uses for relaxation purposes, but the little ferry from the western bank onto there also existing with the densely built...

Figure 4.22: Kasr el-Nil Bridge, heavily used by pedestrians, leads to the newly designed pedestrian areas along the waterfront.

Figure 4.23: 6th of October Overpass, frequented by pedestrians.

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Not only does the Nile waterfront become an attractive area for climatic purposes, but the open views from the bridges that cross the river also contrast with the densely built form of Cairo and the lack of open spaces. It seems that these bridges remain the only places left for Cairenes to seek refuge from the heat and comfort in the cool breezes and enjoy open views across the River Nile, due to the unavailability of other inviting places along the Nile banks.

Figures 4.24 and **4.25** show certain central areas that are hardly used by the public and are usually dark at night. **Figures 4.26** and **4.27** show certain water edges along the northern and southern waterfront of Cairo that have been used as plant nurseries and which are not considered to be attractive areas by day or night. Other areas are well maintained in order to keep green areas existing, but people have been denied the possibility of using these places. The result is that people are forced to stand on either side of the bridges. It is also evident that during the dark hours of the evening, the only brightly-lit places are those with boats, cafeterias and floating restaurants. The remaining parts of the water edges are inaccessible to the public and may at times be left in complete darkness.

Figure 4.24: Example of Narrower parts of the Nile that are often left dark by night as few activities take place there. (Facing North - island of Zamalek on the right-hand side of the picture).

Figure 4.25: Example of another of neglected waterfront area, with pipeline bridges over the water (Facing North, island of Manial on the left-hand side of the picture).

Figure 4.26: Part of the waterfront to the South used as plant nurseries.

Figure 4.27: Waterfront further South facing agricultural lands.

4.2.4   The 'Corniche' Phenomenon and Egyptian Culture

The water edges or waterfront within Egyptian dialect is labelled as 'El-Corniche' where people go out for evening strolls with friends or family. Bodies of water in most of the Egyptian cities dominate the behavioural patterns of the locals. This example is seen in the city of Alexandria, the second most populated city of Egypt after Cairo, as it extends linearly along the coast of the Mediterranean. The waterfront area is considered as a dominant aspect of Alexandria defining whole length of the city. It is well known that Alexandria becomes overcrowded with Cairenes on vacation during the summer, and again the Corniche becomes the attraction point. This Corniche, mainly used for evening strolls, is accessible from nearly all the residential areas in Alexandria. The residents of district of El-Mokatam built on a hill within Cairo, also use the label 'El-Corniche' towards to represent the edge of hill particularly at places looking down to Cairo. Residents and non-residents of El-Mokatam frequent this place during the evenings for its views and fresher air. Similarly, Cairo's Corniche extending along the River Nile, allows for many residential areas to use their closest water edges. In this case the difference lies in the fact that this waterfront does not 'supply' the Cairene extensions to the East and West. Other cities along the Mediterranean and the Red Sea also contain at least one Corniche, which indicates the inevitable influence of waterfronts within Egyptian society. The term 'El-Corniche' furthermore, has become generally used to label public areas, particularly edges that contain convenient walking space, food cubicles and wide views, a unique example of Egypt's urban outdoor, public life.

'El-Corniche' as a phenomenon can largely be related to the Italian plazas, as it similarly reflects a gathering place, where activities are witnessed. As is later demonstrated,[2] particular physical qualities of the waterfront manifest the potential quality of the waterfront for attracting people. It is for this reason that the Egyptian waterfront may be a prominent aspect of Egyptian cities that urban planners should consider as public open spaces such as the example of the plaza. Furthermore, 'El-Corniche' may have appeared along numerous edges within the cities as a result of the lack of public space within the city resulting in redirecting outdoor interests to particular

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[2] See **chapter 7** and **chapter 8**.

city, or town edges. This is particularly the case in Cairo, where there exists a considerable lack of public inner spaces, 'El-Corniche' seems to find its way within the city as a natural place for providing and further improving public life.

Therefore improving the neglected waterfront and further understanding how and why these places are used can help improve and further provide public space along these edges and other areas within the city. Although there are current schemes undergoing in order to improve certain waterfronts, it is the researcher's aim to identify the configuration and function of the Cairene waterfront amongst the Cairene society. This can be used as an effort to help urban designers and planners to understand the nature of Egyptian waterfront areas and to specifically identify various aspects that affect the way the Cairene waterfront is used and perceived.

4.3   Conclusion

Cairo is a heavily built city, with traffic, crowds and pollution, all which in effect cause the population to seek daily refuge within its available public inner spaces. It is therefore suggested here that the waterfront might signify the one and only prominent public open place for an entire city. Therefore its improvement and regeneration is vital to the requirements and needs of the city's inhabitants. This is evident from extensive use by the populace. Another reason for the popularity of the place may be due to its existence in a central location and due to the lack of alternative open spaces with open views within city. As mentioned earlier, the reason for this may lay in its micro-climatic condition and location within the heavily built city. This suggests that the waterfront is of great significance for further inquiry into Cairene perception and behaviour within any outdoor space and the waterfront.

The following chapter initiates the research approach as a means to determine Cairenes' construal of their Nile waterfront area. The overall objective is to determine aspects of place and of the way Cairenes perceive the place. Therefore the research makes use of two techniques, the first using an interviewing technique and the second by designing a questionnaire, which is deduced from the interview responses. Thus the following chapter opens with a description of the interview methodology.

CHAPTER 5

PART ONE
(THEORY)

PART TWO
(CASE STUDY)

PART THREE
(CONCLUSION)

THEORETCIAL REVIEW

THEORETICAL BUILDUP — IDENTIFYING THE RESEARCH APPROACH

MODEL — CREATING THE MODEL

INTRODUCTION TO CASE STUDY

RESEARCH TECHNIQUE — OVERALL RESEARCH METHODOLOGY AND PROCEDURE

DESCRIPTIVE ANALYSIS — Part One — INTERVIEW ANALYSIS

CONTEXTUAL ANALYSIS

ANALYSIS OF HUMAN PERCEPTION — Part Two — QUESTIONNAIRE ANALYSIS

OVERVIEW OF RESULTS

EXAMINING THE RESEARCH FINDINGS

CONCLUSION AND RECOMMENDATIONS

CHAPTER 1

CHAPTER 2

CHAPTER 3

CHAPTER 4

CHAPTER 5

CHAPTER 6

CHAPTER 7

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CHAPTER 10

CHAPTER 11

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5.0   Introduction

This chapter describes the chosen method used in order to identify the issues that affect Cairenes' construal of place and the nature of the waterfront area in Cairo. It describes the procedure taken for the analysis of the survey and is divided into two main parts, using different types of analyses. Part One is applied on a sample of 24 subjects using an interview technique that shall later be described. Part Two is applied on 130 subjects using a questionnaire. Part One is further divided into two main stages that separate the different types of analyses applied. Stage I includes the descriptive statistics and is considered as a preliminary analysis of the 24 subjects. Stage II follows by using the Flexigrid software, which is a computer based analysis, applied on the 24-subject group using the variables derived from the interviews. Part Two contains Stages III and IV, and also uses computer-based analyses using the SPSS software package but is applied on the 130-subject sample with the use of a questionnaire. Parts One and Two are further described in more detail below. **Fig 5.1** shows the overall progression of the designed researched stages and the various techniques of analysis included. This table shall be used within the thesis in order to each individual stage.

OVERALL PROGRESSION OF THE ANALYSES

Part One

-Qualitative Analysis
-In-depth Interviews
(24 Subjects)

STAGE I
Descriptive Statistics

Deducing the variables
(constructs)
Non-computer based

STAGE II
Contextual Analysis

Computer Based Analysis
using Flexigrid software

Part Two

-Quantitative Analysis
-Questionnaire
(130 Subjects)
-Computer-Based
Analysis using SPSS
software.

STAGE III
Contextual Analysis

Cross-checking STAGE II
Spearman Correlation
Test

STAGE IV
Analysis of Human Perception

Factor Analysis
and Chi-Square Tests
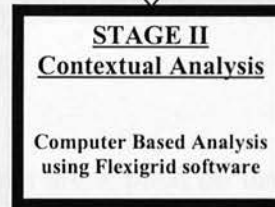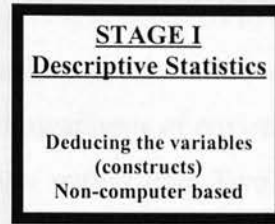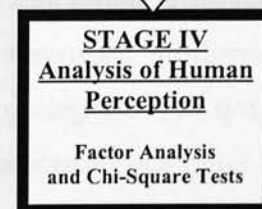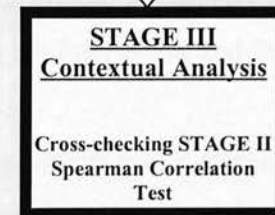
Fig 5.0: The three stages included in the overall progression of the designed research analyses.

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Part One is divided into two stages and includes a qualitative approach, which was been attained by interviewing 24 subjects in order to derive certain variables (constructs). These variables basically determine issues that relate to the waterfront area. Stage I of the analysis attempts to identify the variables from within the context of the case study and from the subjects that are familiar with the context, therefore following the guidelines of the model[1]. Stage I is considered to be a descriptive analysis of the issues raised by the interviewees. Furthermore the achieved variables (constructs) are categorised in relation to the theoretical paradigms of environmental evaluation, and further used for designing the questionnaire within Part Two of the survey analysis. Stage II follows the descriptive analysis and attempts to examine the results of the interviews, which are further examined through 'Flexigrid' software and then reported. Through various analyses, this stage highlights main points relating to the nature of the waterfront area, thus relating to the *context*.

Part Two also consists of two stages, which are applied on the 130-subject sample by using a questionnaire and is therefore a relatively more quantitative approach. Within this Stage III Spearman correlation test is conducted and applied on the 130-subject sample. This stage also relates to identifying aspects of the *context*, as its main goal is to cross-check with the previous tests applied on the 24-subject sample. This is done in order to show relative consistency between the interviews and the questionnaire.

Stage IV relates to *human perception* and contains two different tests for analysing the results. These tests are used in order to classify and narrow down the main criteria that may have large influence upon Cairenes' construal of the Nile waterfront. The Factor Analysis test is therefore applied on the overall questionnaire, in order to determine the salient factors resulting from the subjects' responses. Furthermore, Chi-square tests are conducted and highlight the differences existing between groups. Specific differences between groups are further reported by separately applying Factor analysis on each group. This is then presented in order to give insights to what and how Cairenes' perceive the waterfront area.

Both Part One and Part Two are complementary to each other, as consistency is

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[1] See Model objectives, **chapter 3**.

illustrated through the correlation test applied in Stage III. Furthermore, the included stages individually highlight different results, where Stages II and III underline the physical aspects of the waterfront area. Stage IV demonstrates how the subjects construe the waterfront area thus addressing both the *contextual* and the *human* related aspects of the survey. This further shows that the designed research follows the model proposed in **chapter 3**. It is also important to mention that Part Two sequentially follows on from Part One as the variables determined from Part One are used for designing the questionnaire.

This chapter shall describe the approach used in determining prominent aspects of place from the individuals' perception by using Personal Construct Psychology (P.C.P). Psychologists as a means of extracting concepts from people use this method in order to understand the world around them. As the use of P.C.P is considered as the initial basis from which the variables are extracted, it was therefore found important to start by describing, in more detail, Personal Construct Theory (P.C.T) and the interviewing technique used for extracting the variables. Thus the various stages of the designed research (see **fig. 5.0**) therefore follows the introduction of P.C.T.

5.1   Approaching Place Construal through Personal Construct Theory (P.C.T)

Explaining and classifying personality differences has always fascinated psychologists. George Kelly, a psychologist and clinician, had to understand people's views and classify them. Kelly's theory of personality evolved from the basic notion of man-as-scientist and sought to make predictions in a rigorous way about individual people. According to Kelly, whatever the world may actually be, people can come to grips with it only by placing their own interpretations upon what they see. Kelly suggested that people have mental filters, which he calls constructs, through which they perceive and construe the world. In this way, people build for themselves a representational model of the world, which enables them to plan a course of behaviour (Kelly 1955).

The introduced technique of "Repertory Grid" is based upon George Kelly's "Personal Construct Theory" (Kelly 1955). It is mainly an interviewing technique that avoids giving the interviewee pre-structured answers to choose from. The technique allows for the classification of the subjects' responses regarding their assessment of various aspects of the environment. Therefore the structure and classification of responses, which Kelly calls 'constructs', result from asking the subjects to identify differences between places. The objective here is to identify the variables used by people and which help them describe places. The results in this section are then analysed and examined through a manual classification with the use of computer software, which is elaborated on later in this chapter. The use of Personal Construct Theory (P.C.T.) was to identify the underpinning attributes and dimensions of people's perceptions towards the suggested area of the Nile Corniche. The following shall describe the theoretical connotations underlying Personal Construct Psychology and it's use.

Personal Construct Psychology deals with the structure rather than the substance of the individual's personality. Here situations are made sense of by imposing a certain structure (Aspinall 1992) that helps the person add meaning to his/her experiences. This technique allows the interviewer to obtain a 'mental map' of how the interviewee views the world[2], and to further write this 'map' with a minimum of observer bias. Kelly described this system of hypotheses as a pair of spectacles through which you receive

information and which also conditions what people see and how they see it. He named this system as the 'construct system', because 'construct' is a word that carries both the sense of having been constructed and developed from experience and also the sense of construing and interpreting the world. It is a method made to understand how the situation is likely to mean to the individual or group and might share constructs about common problems (Stewart V. et al. 1981).

Kelly invented the 'Repertory Grid' technique as a way of getting people to exhibit their construct systems for further understanding these systems and predict how they behave in certain situations. Repertory Grid was chosen for its "...ability to elicit peoples perceptions in a value-free and incremental fashion" (Stewart V. et al. 1981. p.10). Furthermore, construct elicitation is the first stage of any Grid interview.

5.2 Pilot Survey

The intention of the pilot studies was to examine the questioning technique, testing for the required timing and for further observing the sequence of the questions. Pilot studies were conducted on five people to measure the effectiveness of the proposed technique. Due to their time-consuming nature, preliminary tests were avoided at an initial stage. The five interviews were conducted on volunteers from different nationalities, who were interviewed on various areas that they had previously experienced and knew well.

5.3 Sampling and Sample Characteristics

The Repertory Grid technique is a qualitative research technique for in-depth studies (e.g. see Coolican 1990). In this kind of interview technique the number of subjects need not be as large as in quantitative techniques. The length and time of the interviews at times reached 4 hours. Due to the length of these interviews the researcher decided to settle with 24 interviewees, which was considered sufficient enough, as this method derived plenty of variables. It should also be stressed that this part of the research is not the main part of the case study. It is mainly designed as an investigation stage for identifying the effective issues that construct a basis for judgement. A 'split plot' design

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[2] **Chapter 7, fig 7.1** shows the output of a mental image using the Flexigrid software.

was used in which to identify four groups of six subjects each (a total of 24 subjects) mainly volunteers (see **table 5.1**) as follows:

1. The sample was split into two according to professionals (architects and planners) and laymen.
2. The same sample was further split according to age, under the age of 30 and over 30 years old.
3. The interviewees were volunteers and lived in different areas of Cairo but had to be already familiar with the Nile waterfront.
4. The chosen sample of subjects was considerably random, as they inhabited different locations. This was helpful in obtaining a wide representation of views and attitudes towards the waterfront.

	Male	Female	Total
Professionals	6	6	12
Laymen	6	6	12
Total	12	12	24

Table 5.1: Table shows the 4x4 sample of chosen subjects.

Each subject was individually interviewed for 2-4 hours, depending upon the number of constructs that were elicited from the individual. This sample was chosen initially to identify the differences in variable elicitation between professionals and laymen[3].

5.4   Interviewing Technique

In clinical psychology, Kelly selected elements as examples from the field of study for studying interpersonal relationships. The elements for any particular situation can be used as long as two factors are kept in mind. Firstly, the elements should be within the range of convenience of constructs used, which will require the subject to say whether the element is relevant, to all constructs. Secondly, the elements must be representative

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[3] The initial intention of choosing the professional/layman sample of subjects was to investigate differences between both groups in evaluating places. However, these two sample groups were not later investigated within the questionnaire, as the researcher attained similar responses from both groups. Therefore the basis for separating the sample of subjects on an occupational basis was later dropped.

of the general pool from which they are drawn (Fransella, F. et al., 1977).

5.4.1 Element Elicitation

In order to obtain elements, there are two main approaches. The researcher can provide the interviewee with a set of elements devised by the researcher for their research strategy, or the set of elements can be extracted from the interviewee or established during the discussion. The latter of those methods has been chosen for the case study. With the help of a given map, the initial objective was to identify eight places (elements) experienced by each subject, which had to be located along the Nile waterfront.

The subjects were also asked to list four other places from their personal experience that were not located along the Nile waterfront, and could be anywhere around the world. This was done by asking the subject a sequence of questions, and their answers were into a similar chart to **table 5.2** and the name of each place was separately written down on a card. A total of 12 places were identified: four liked places; four disliked places; one typical place; one atypical place; and two significant places along the Nile Corniche were identified.

Furthermore two liked and two disliked places were identified, but not necessarily in Egypt or Cairo but anywhere else and left to the subject to suggest. This helped to identify other constructs drawn from places from outside the context of the study at hand that would not necessarily relate to the Cairene waterfront (see **table 5.2**). The reason for this is in order identify constructs from the interviewee that would help determining where and how the waterfront in Cairo might relate to these other places. It is important to note here that within the 'liked' and ' other' category, the interviewees usually selected places that they had visited for vacational purposes and that were usually located outside Cairo and/or Egypt. The interviewee was further asked to identify the most 'ideal', 'typical' and 'worst' places from the 12 self-chosen places. The purpose for this is as the computer software used, makes use of these three places in its data analysis, which shall be further elaborated within **chapter 7**.

It must also be noted here that the initial and sole purpose for asking for the liked,

disliked, typical and atypical places was in order to make it easier for the researcher to determine more and differing places from the interviewee. Coincidentally, the liked and disliked places were found helpful in understanding the nature of the waterfront area and shall later be described.

Place	No.	Elements	No.	Elements
	1	Liked place	2	Disliked place
NILE	3	Liked place	4	Disliked place
	5	Typical place	6	Atypical place
	7	Significant place	8	Significant place
Other	9	Liked place	10	Disliked place
	11	Liked place	12	Disliked place

Table 5.2: Table used in filling in the list of places (elements) derived from the interviewees.

Many studies have involved the use of photographs for assessment, rather than searching for the way people experience places (Russell & Mehrabian, 1974). Those studies attempt at identifying preferences based on two-dimensional photographs. The researcher found this method to be rather problematic, as it avoids place judgements resulting from the person's interactions within place. This would suggest that this method would not allow the investigation of particular place evaluations that result from participation thus denying a further examination of participatory approaches[4].

Results as such would prove invalid for the neglect of the wider range of multi-modal experiences such as sound, tactile sensation and smell (Ulrich, R.S. 1983). Kroh and Gimblett (1992) studied the differences in preference responses of subjects who were taken along a trail in southern Indiana and then repeated the study in a laboratory using slides. The results suggested that "...the use of traditional analysis and classification techniques used in visual assessment may not adequately represent all the elements experienced in the landscape" (p.67). Furthermore, on both the qualitative and quantitative analysis, it was found that "...the data based on laboratory simulations are less accurate and less easily analysed than those collected in the field" (p.67). Therefore

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[4] See **chapter 1** for the paradigms of environmental evaluation.

the use of photographs of the studied area was abandoned at an early stage as they deny the observer's influence in the choice of the pictures and to further avoid elements within the picture that might distract the examined subject.

In order to reduce observer bias the derived places were entirely chosen by the subject within the specified area. In this case the subjects only depended upon his/her own knowledge of the place from their own life experience. It also helps in identifying the constructs based upon the individual's interaction within his/her suggested settings, which is not necessarily the case in choosing a pre-determined set of places.

The interviewer, within a highlighted area presented in a map, restricted the interviewee's selection of places to the waterfront area within the city. This area stretches North-South of Cairo and is restricted to the water edges taking the River Nile's natural course through Cairo. The importance of allowing the subjects to identify four other areas outside the Nile area was to increase the possibility of people revealing as much information as possible about their interpretation of their own environment.

The actual importance of the suggested area of study was not solely for the importance of the waterfront as an important open space (as discussed earlier). Nevertheless, the places (elements) identified from the subject's individuals experience are also considered as "triggers" for thinking about the environment (Bannister et al. 1986).

5.4.2 Construct Elicitation

Constructs are bipolar by nature, in a sense that you can only understand what someone means by 'good' by knowing what that person means by 'bad'. These are not necessarily semantic dictionary opposites but are considered as contrasts. Therefore constructs should be identified as pairs of descriptors, but not as a descriptor and its negation or dictionary opposite. As these opposites uniquely relate to each individual, they are derived from the interviewees, rather than determined by the interviewer.

In a sense, construct elicitation is a way to examine the individuals' vocabulary within a particular interest. Groups from different backgrounds are expected to construe things differently, where a layman's construal of an urban context would differ from that of an

architect or planner. An individual's vocabulary can be considered as a limitation to this technique, but it can also highlight the individual's descriptive ability towards the proposed question. For this reason constructs do not necessarily have a very good fit in reality where, for a person to improve this fit, he or she needs to increase his repertory of constructs. This would be achieved either by altering them to provide a better fit or by replacements. (Kelly, 1963).

After writing down the names of the places on twelve cards, two cards were picked at a time and the subject was then asked to describe the differences between two places according to the interviewee's judgement[5]. This was achieved by asking a standard question – "In what way are those two places similar and/or different to each other?"

5.4.3   Laddering

Hinkle (1965) first described the laddering procedure. Its cause was to establish a hierarchy of constructs, with some constructs closer to the person, in essence, and others more peripheral. Here the construct system is described "...as a series of interlocking ladders, getting smaller in number and stronger in influence/strength as one reaches the top." (Stewart V. et al. 1981. p.22). This is achieved by asking a series of "how" and "why" questions.

Constructs were elicited from the entire element set or until a maximum range of 25 constructs were elicited from the individual. Some cases only gave rise to a small amount of constructs. The contrasts inherit in each of the construct needed to be, identified by the interviewee to better describe the construct.

After achieving a reasonable number of constructs and their contrasts, the subjects were asked to rank the elements by constructs on a 7-point scale, i.e. how much the constructs describe each place (elements). Here the construct and its contrast are shown as shown in the example below. The interviewee was led to elicit around 25 constructs, in some cases hardly half the table shown below was filled, in other cases more than 25

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[5] The researcher found it appropriate to avoid the triad method, which involved the use of three chosen places by identifying a similarity or difference within two places that is different than the third place. This was because the interviewer realised from the pilot studies that the interviewees found the request rather confusing, and therefore led to more time being consumed to achieve the required number of constructs.

constructs were elicited. According to the degree of importance of the constructs, the interviewer neglected the extra constructs elicited.

Construct ←------------------||----------------------→ Contrast

1   2   3   4   5   6   7
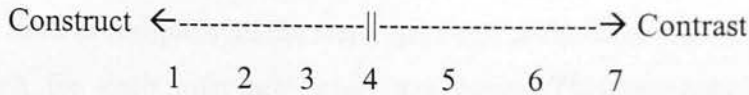
The List of elements and constructs was filled in a table as shown below by the interviewer during the interview, then the 7 point scale was left for the interviewee to fill it in for himself according to his/her judgement (see **table 5.3**).

Elements/Constructs	ELEMENTS											
	1	2	3	4	5	6	7	8	9	10	11	12
CONSTRUCTS Construct/Contrast												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												

Table 5.3: Table used by the interviewee to value his/her constructs and relate them to the elements (places) on a 7-point scale.

5.5   Disadvantages of the Interviewing Technique

This technique is rather prolonged as it consists of several stages and it usually takes quite some time to complete all the steps and parts of the interview. The average time in this research for each interview was three hours. This prevents the possibility to interview larger numbers of subjects. The second difficulty is that because of its repetitive nature of similar questions, the interviewee may see the individual steps as being rather tedious as, at times, further questioning does not produce further constructs. This frequently becomes quite obvious, in particular when some of the subjects are of less educated backgrounds, where the constant questioning derive fewer constructs in comparison to the more educated interviewees. This highlights that the construct elicitations of the subjects from a less educated background are reasonably fewer in comparison to those of the subjects that have undergone a higher level of education.

5.6   Advantages of Personal Construct Psychology upon the Interviews

1. The researcher's influence on the subjects is minimised using this technique, especially when compared with pre-structured questionnaire techniques. This is due to the fact that the interviews extract the constructs from the interviewees without the interviewer having to pre-suggest any self-extracted factors. This intends to reduce interviewer bias. Furthermore, the use of photographs for eliciting constructs was ignored at the early stages of the pilot studies. As previously described in **chapter 1**, photographs may affect the interviewee's judgement as it may be influenced by other elements appearing within the photograph.

2. No pre-structured questions existed, which gives the interviewees a greater opportunity to express themselves more easily. The extraction of place names from the interviewee's memory was highly dependent upon his/her own personal experiences and involvement with those identified places. Furthermore, in comparison to showing photographs to the interviewees, the process of identifying places from the subjects would allow a higher level of liberty in identifying intricate differences between his/her chosen places. Thus the interviewee's statements are, therefore, more expressive of his/her real perception or views from their own personal experiences. Overall, the technique focuses purely upon the interviewee's

personal mental image from within his/her personal lifetime experiences. This would relate to the previously mentioned participatory approaches that have previously been mentioned in **chapters 1**.

3. The technique does not attempt to identify differences between places, but to identify other deep reasons which may underlie how people differentiate between places. If a subject expresses that he/she prefers a place for the existence of vegetation there, this result may be an outcome of a long series of responses to subject has made, from which a number of constructs are derived from the interviewee. The technique allows for further generating expressions that have more subjective concepts, which may concern the person at a deeper level, as he or she is led by the interviewer to describe the reasons for places being similar or different. The technique therefore has a particularly important advantage, and has been found to be one of the most useful techniques, in examining the rather complicated and complex network of subjective concepts and issues to be found in research related to environmental perception.

The obtained information in this research was then analysed within Part one of the research design, which is divided into two stages. Stage I, presents particular frequencies of the derived constructs and is therefore considered as descriptive statistics. A later classification of the constructs that were elicited from the subjects shall be presented in the following chapter. This was in order to describe the percentages of responses with relevance to the paradigms of evaluation mentioned in **chapter 1**.

CHAPTER 6
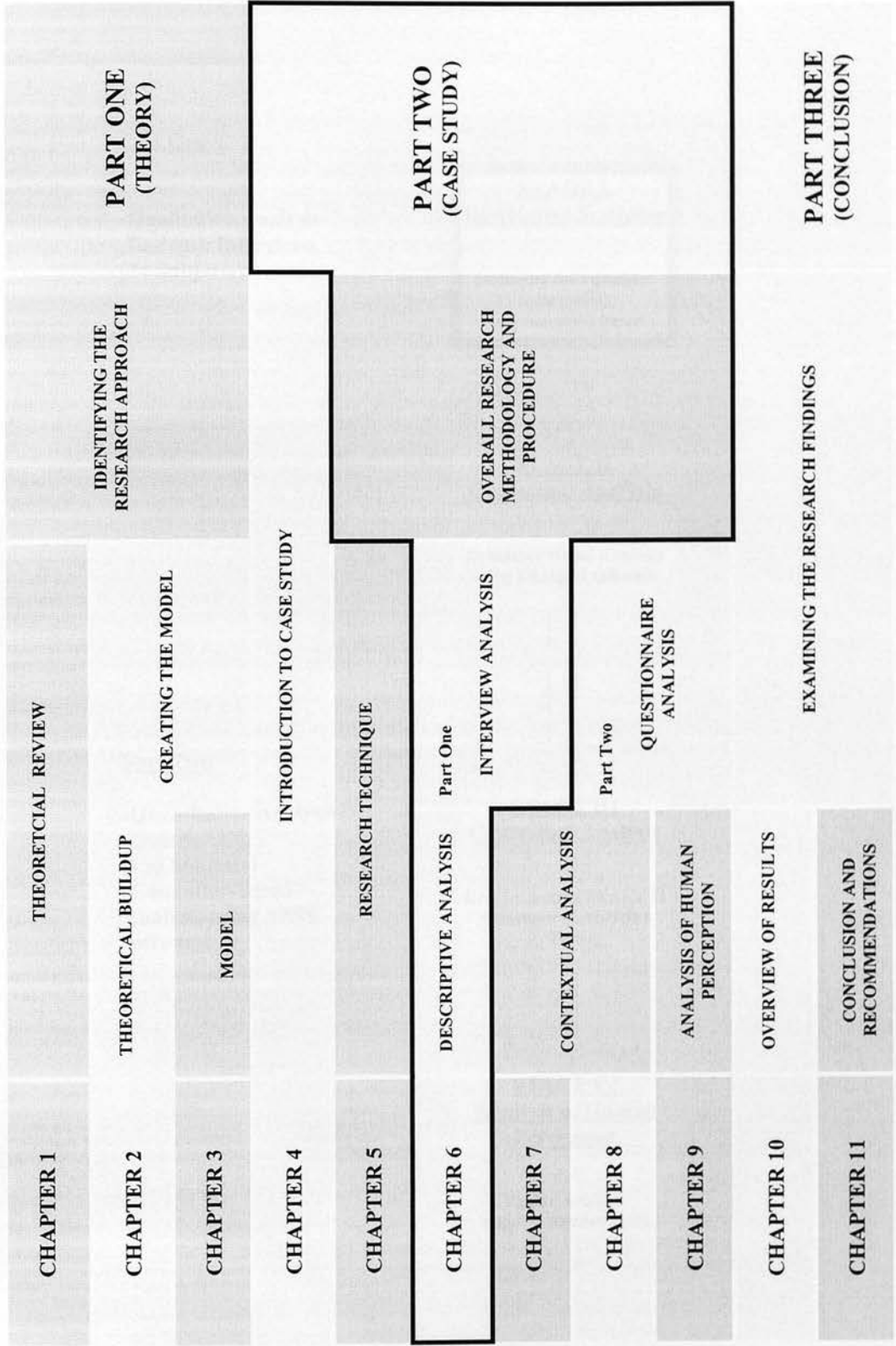
OVERALL PROGRESSION OF THE ANALYSES

PART ONE
(THEORY)

PART TWO
(CASE STUDY)

PART THREE
(CONCLUSION)

CHAPTER 1   THEORETCIAL REVIEW

CHAPTER 2   THEORETICAL BUILDUP   IDENTIFYING THE RESEARCH APPROACH

CHAPTER 3   MODEL   CREATING THE MODEL

CHAPTER 4   INTRODUCTION TO CASE STUDY

CHAPTER 5   RESEARCH TECHNIQUE   OVERALL RESEARCH METHODOLOGY AND PROCEDURE

CHAPTER 6   DESCRIPTIVE ANALYSIS   Part One   INTERVIEW ANALYSIS

CHAPTER 7   CONTEXTUAL ANALYSIS

CHAPTER 8   Part Two   QUESTIONNAIRE ANALYSIS

CHAPTER 9   ANALYSIS OF HUMAN PERCEPTION

CHAPTER 10   OVERVIEW OF RESULTS   EXAMINING THE RESEARCH FINDINGS

CHAPTER 11   CONCLUSION AND RECOMMENDATIONS

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OVERALL PROGRESSION OF THE ANALYSES

Part One

-Qualitative Analysis
-In-depth Interviews
(24 Subjects)

STAGE I
Descriptive Statistics

Deducing the variables
(constructs)
Non-computer based

STAGE II
Contextual Analysis

Computer Based Analysis
using Flexigrid software

Part Two

-Quantitative Analysis
-Questionnaire
(130 Subjects)
-Computer-Based
Analysis using SPSS
software.

STAGE III
Contextual Analysis

Cross-checking STAGE II
Spearman Correlation
Test

STAGE IV
Analysis of Human Perception

Factor Analysis
and Chi-Square Tests

IDENTIFYING ATTRIBUTES OF PLACE
(DESCRIPTIVE STATISTICS)

6.0   Introduction

The following tables are the initial outcome of the interviewing sessions based upon the P.C.P technique mentioned in the previous chapter. The objective of this chapter is to list the determined constructs relating to the waterfront area in order to illustrate how Cairenes' construe this place. The constructs here mainly describe the perceived attributes of place derived within the interviewing sessions. As previously explained, the interviewee's use of the constructs is in order to differentiate between various places along the Nile waterfront. It also briefly describes why people mention those attributes in relation to the context of Cairo, particularly the waterfront area. This part simply endeavours to answer two basic questions on a basic level; what are the prominent attributes of the waterfront area that Cairenes perceive? Why are they prominent? At this stage, these answers are briefly answered from the researcher's opinion, since the exploration is considered in its initial stages. The determined issues are later presented through the use of descriptive statistics showing the response frequencies by the aid of charts. Furthermore, simple attempts to draw relations between the results presented here and the various paradigms mentioned within **chapter 1** shall be highlighted.

Identifying those results are considered as background to a better understanding of Cairo, which would further help in understanding the nature of the existing physical environment in Cairo. Thus this chapter attempts to define aspects of the chosen area that are helpful in uncovering and illuminating numerous issues, helpful to a reader foreign to the waterfront context and Cairenes. Furthermore, the results within this chapter will be later be helpful in determining the constructs/variables used for the design of the questionnaire that is analysed within the following chapters.

The following contains a descriptive classification, which derived a total of 21 groups and sub-groups of variables and constructs. The groups contained a total of 477 constructs derived from the interviews, and have been classified by the researcher into tables[1]. Each table contains a label and a list of columns divided by four groups represented within the columns; Professionals[2] over 30, Professionals under 30, Laymen under 30 and Laymen over 30. The frequency that each construct has been mentioned is also indicated and listed under 'Sub-total'[3]. It contains the interviewees' judgements towards the issues raised (constructs) and their level of importance on a 3-point scale (A, B and C)[4].

---

[1] **Table explanation:**
The title of each table (top left corner of each table in **bold)** represents the suggested label for each set of categorised constructs.
The title column includes the list of constructs within that category.
The overall number of constructs in each table is highlighted at the bottom end from the column containing the title, and is listed under the total number of A, B and C's.
The total number of constructs that each group of people mentioned is represented at the bottom end of the groups' column. Similarly, the frequency that the constructs have been mentioned within each construct and by each group (e.g. professionals or laymen) is individually shown to the right hand side of the six cells. The larger box highlights the total number of subjects mentioning the specified construct.
The Letter ® when shown on the left-hand side of a row indicates that the identified construct is repeated in another table. Hence, some constructs may cross a number of groupings.
[2] Professionals here are a group of Planners and Architects
[3] Sub-total: This column indicates the total amount of subjects (from the four groups/columns) mentioning the indicated construct and the number of A's, B's and C's indicating the level of importance.
[4] A = Highly important, B = Moderately important, C = Not important, Empty box = not mentioned by the individual subject.

6.1 Revealed Constructs

The following contains the list of constructs that have been grouped into 21 groups with some of the groups containing subgroups. The choice of the group in which the constructs fall depends upon the researcher's view and moreso upon each separate interview[5]. Only the first 17 of the 21 categories are listed below are mentioned here, as the other groups were not found to be important as they hardly related to the area of inquiry. Groups 18-21 are listed in **appendix 1**.

1	Functional Use	12	Planning and Design Related Issues
2	Place Efficiency		
3	Traffic	13	Maintenance
4	Sensory	14	Night Lighting
5	People	15	Location
6	Type of Participation	16	Cost Factors
7	Building Form	17	Safety
8	Scale	18	Emotional
9	Nature Orientated	19	Historic Significance
10	Views	20	Other Physical Descriptors
11	Nile	21	Other

The results attempt to explain each derived group of constructs that have frequently been mentioned by the subjects. Whenever necessary, the constructs and their relationship towards certain dimensions relating to the existing settings of Cairo and its waterfront are explained. It should be clear at this stage that the constructs were not necessarily derived from cross comparing between places along the waterfront. As previously explained, in some cases, cross comparisons between local and foreign places where of great value as they increased the opportunity to derive more and different constructs.

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[5] In this case the categorisation of the groups were highly dependent upon each interviewing session. Therefore the use of other referees were excluded, as they had not attended any of the interviewing sessions.

6.1.1 Functional Use

Table 6.1 has been grouped to represent the subjects' classifications of the places in terms of the functional descriptions of the place. The table indicates that a higher number of subjects classified places by whether or not it was residential or touristic. The table also indicates that a large number of subjects labelled places as being touristic, due to the high incidence of such places either along the Nile or within other places suggested by the subjects. It must be highlighted that 'seeyahee', the Arabic word meaning 'touristic', within the Cairene culture, usually refers to places where tourists usually visit, but also labels places that are categorised by the society as high-class residential areas, which may at times surround five star hotels. Such areas are located in central parts of Cairo along the Nile River where there are restaurants, public areas and five star hotels, thus usually referring to the area of Kasr el-Nil. This mixed labelling could be due to the fact that the mixed-use places predominantly shape many central areas of Cairo.

FUNCTIONAL USE	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
® Family/Non family place	A		1							A		1	2
Tourist/Non tourist Attraction Place			1	C	C	4			2			1	8
	C			B	C		C	B			B		
Industrial /Non Industrial											B	2	2
											A		
Commercial / Non commercial place						1					B	2	3
					B						B		
Archaeological / Non archaeological				C		1					B	1	2
Social/Non-social place									1				1
							C						
Cultural/Non cultural												1	1
										A			
Residential /Non residential	C		2	A		1	A		1	B	A	3	7
	C										C		
7A+9B+10C **Overall Total = 26**	1A+3C Sub-total = 4			1A+2B+4C Sub-total = 7			1A+1B+2C Sub-total = 4			4A+6B+1C Sub-total =11			

Table 6.1: Functional Use

The constructs in this group deal with what the individual can do in a place and the type of involvement within the place. This relates to Uzzel's (1991) classification of research where evaluation takes place from a functional standpoint, namely 'Functional Use'. Research made from a 'Functional Use' perspective may analyse landscapes as a social setting with the preconception that, when people describe places, they usually refer to the activities that occur in that place (Uzzel, 1991). Canter (1984) also emphasises the need to understand the qualities that places require for particular activities and goals, which may further reflect their actions and role relationships[6].

6.1.2 Place Efficiency

The constructs in **table 6.2** reflect the subjects' description of places in terms of how efficient the place is or how well it works. This is rather different from the way a place is used (as mentioned above) since it deals with the efficiency of use (whether it works well or not).

Constructs mentioned by the subjects in this table usually relate to the presence of services, such as parking, transport, shopping areas and so on which may indicate place description through a certain demand or need. The frequently mentioned constructs within this category are issues such as, 'access' and 'well or badly used places'.

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[6] See **chapter 1** for discussion relating to the Functional Use approach and its Experiential and Participatory approaches, presented within **table 1.1**.

PLACE EFFICIENCY	Professionals Over 30	Professionals Under 30	Laymen Under 30	Laymen Over 30	Sub-total
Residential spaces suitable/unsuitable	B — 1				1
Presence/absence of utilities	A — 1				1
Presence/absence of restaurants				B — 1	1
Presence/absence of shopping services			B — 1	B — 1	2
Good use or bad use of the Nile		B — 1			1
Adequate/inadequate number of streets		C — 1			1
Bldgs. Preventing/Not preventing aeration				A — 1	1
Place has/has no seating areas	C — 1		A — 1		2
Pedestrians have/not freedom of movement	B — 1				1
Access to Place	B — 1	B A / A — 3	A — 1	A C — 2	7
Access to the Nile	B — 1				1
Presence/absence of shaded areas	A — 1		B — 1		2
Presence/absence of transportation				A — 1	1
Presence/absence of parking areas	A — 1		A A — 2		3
Easy/not easy to visit			B — 1		1
Important for Transportation/not			C — 1		1
Place well/badly used	B B A — 3	B B / A B — 4	B A — 2	B — 1	10
Presence/absence of services	A — 1	A B — 2		C — 1	4
18A + 21B + 5C	5A+6B+1C	5A+6B+1C	5A+5B+1C	3A+4B+2C	
Overall Total = 44	Sub-total =12	Sub-total =12	Sub-total =11	Sub-total = 9	

Table 6.2: Place Efficiency

6.1.2.A   Access

Here issues relate to the ease of access to places whether be it on the Nile or otherwise. As was stressed in **chapter 4**, access to the waterfront may at many times be denied as many cafeterias and private clubs occupy the water edges. Issues like these may arise in Cairo due to the difficulty to reach places, either due to the existence of congested traffic in central parts, or the remoteness of the place itself from convenient transport facilities. An indication of poor access could also result from the difficulty to reach

closer to the Nile water due to the existence of restaurants on the water banks, which effectively block these places off. Similarly access to the waterfront can be denied to non-members of certain clubs existing along the waterfront.

6.1.2.B   Well or Badly used Places

The way the place is used is a frequently mentioned construct, since places in Cairo are usually either neglected or inappropriately used. In certain cases, the function of the place may not be suitable for the place. Places that are labelled as 'badly used places' referred to areas that were either over-vegetated thus denying views to the Nile, or to poorly maintained places. As a result of these areas being unsuitable for visiting (such as having no seating areas or appropriate walkways), they are less frequently visited by the public. On the other hand, well-used places are usually referred to central, well-maintained and organised places.

6.1.3   Traffic

Traffic congestion within central parts of Cairo is considered to be a major problem affecting how the place works. The efficiency of traffic would facilitate or inhibit the ability to reach certain places. The organisation and amount of traffic would affect how the place is used and the how efficient the flow of traffic is. Town planners, engineers and road builders have had intensive periods of construction within central parts of Cairo. In the 80's huge flyovers were indiscriminately built within the central parts of the city. Pye-Smith (1986), a traveller who visited Cairo in the 70's and then again in the 80's, highlighted his astonishment to the rapid changes that occurred in the levels of crowding, traffic and the physical form of Cairo, from his earlier visit.

> "...you come across great pillars awaiting yet another overhead road. They are sprouting like weeds. And more roads will breed more cars, and with more cars will come more noise and more fumes." (Pye-Smith, 1986, p.65).

Traffic organisation seems to be as one of the predominant concerns of the municipalities and the general public. Where one is going to and how one intends to get there seem to coalesce into a daily compulsive task that Cairenes have to deal with. Many attempts have targeted solving Cairo's traffic problems but, whether solved or

not, the subjects' opinion about this issue seemed prominent as they considered it as an important matter (see **table 6.3**).

TRAFFIC	Professionals Over 30	Professionals Under 30	Laymen Under 30	Laymen Over 30	Sub-total
Fast/slow traffic		1 B		1 C	2
Heavy/light traffic	A A 2	1 A	A A 2	A C 3 A	8
Organisation of traffic	B 1 C	A 2	1 B	C 1	5
Dependence upon car use	A 1				1
9A+3B+4C Overall Total = 16	3A+1B Sub-total = 4	2A+1B+1C Sub-total = 4	2A+1B Sub-total = 3	2A+3C Sub-total = 5	

Table 6.3: Traffic

6.1.4 Sensory

As previously mentioned, much literature on aesthetic evaluation has focused on the visual aspects of perception, where the other senses have been excluded. This exclusion refutes the fact that researching the quality of the urban environment has been conducted through two-dimensional presentations[7]. This may be because the visual criteria are easily controlled through design and the use of illustrations and models. The following factors are mostly sensory factors such as sound, smell and climate, which have been grouped in the table below together with other factors such as cleanliness and pollution. The label 'Sensory' was considered to be appropriate to describe that group as it addresses the various external conditions in the environment that may be picked up by the human senses.

6.1.4.A   Air Breeze

Places having air breeze were associated with places at the Nile water edges or on top of bridges. During the interview 'air breeze' as a construct resulted from cross comparing between places on the Nile and other places far from the Nile. This indicated the lack of public open spaces within Cairo's urban fabric, It is further suspected here that Cairenes largely visit the Nile Corniche for its milder climatic condition. Altman (1986) in his proposed framework of culture/environment relations, suggested that climatic factors

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[7] See **chapter 1**.

play an important role in cultural practices and attitudes, which may result in alterations to the environment. This highlights the effect of the Cairene waterfront upon climatic conditions upon out-door cultural practices of Cairenes.

6.1.4.B   Pollution

In this case pollution usually related to air pollution caused by motor vehicles. Furthermore, Cairo is yearly attacked by the *Khamasin* winds (meaning fifty, the number of days the storm is suggested to blow each spring - not a reality). This storm brings dust from the desert that literally rolls over Cairo to the south. The strong dust winds with a yellow to reddish colour yearly engulf the city. Without the intervention of the *Khamasin* storm and on a normal hot summer's day, the colour of air at a distance spreading around high-rise apartment buildings appears at times appears as a greyish yellow mist. Indeed Cairo has every right to be considered in the top five most polluted cities in the world. This is not only a result from engine exhaust for the hot weather, together with the lack of open areas existing between high-rise buildings, greatly reduces the possibility for aeration.

6.1.4.C   Sound Pollution

Cairo is a heavily populated city (of some 15 million people) with residents concentrated in central parts; therefore the subjects raised the issue of sound pollution created by dense traffic. Planners have used roads, fly-overs and tunnels, in an effort to solve the traffic congestion. Yet the roaring car engines and horns of the passing traffic are major contributors to the high sound levels which exist, especially in the absence of any law implementation that attempts to prohibit the use of the car horns. It seems that honking the horn is a means of communication between cars, at each and every movement. As was referred to by many of the interviewees during the sessions, the more roads and cars there are, the people must put up with more sound pollution and air pollution.

SENSORY	Professionals Over 30		Professionals Under 30		Laymen Under 30		Laymen Over 30		Sub-total
Smell	A	1	A	1			A	1	3
Temperature High/Low	C	1							1
Air Breeze			B	1	A A	2	A	1	4
Bldgs. Prevent aeration/Not							A	1	1
Sound Pollution (noisy/quiet)	A A B / A	3	A B A / A A	5	B A	2	A / A A A	4	14
Pollution	A	1	C C / A A A	5	A A / A	3	A / A A A	4	13
29A+4B+3C **Overall Total = 36**	**4A+1B+1C** **Sub-total = 6**		**8A+2B+2C** **Sub-total =12**		**6A+1B** **Sub-total = 7**		**11A** **Sub-total =11**		

Table 6.4: Sensory

6.1.5   People

This group deals with issues relating to people, whether people are witnessed in a place or heavily use places leading to crowding. They represent the subjects' awareness of the amount of people in a place (see **table 6.5a**). This group also relates to how the subjects see other people's behaviours in a place and their social class level and are therefore included into a group which is labelled as 'Type of People' (see **table 6.5b**). The 'People' group therefore contains a sub-group namely 'Type of People' and was identified due to the belief that much discrimination between places occurs in relation to the social class and behaviour of people existing in a place. This factor shall further be explored within chapter 9, which would later indicate the importance of this group amongst Cairenes.

6.1.5.A   Amount of People

Cairo, having a large population would therefore defeat an argument against the existence of a crowding problem. As previously mentioned, the waterfront area is centrally located in Cairo. At times of festivals the whole of the waterfront area is crowded and also heavily used during the evenings and weekend nights.

Early empirical work on crowding was carried out by sociologists who were strongly influenced by determinist theories of city life. Schmid (1960a, 1960b) found high crime

rates within high population densities in central city areas of Minneapolis and Seattle and lower crime rates in the less heavily populated suburbs of these cities. Schmitt (1957) found that population density was highly correlated with juvenile delinquency and adult crime. Similarly experiments on illness, mental disorders, death and disease correspond with population densities. Early research focused upon how the whole society was affected by crowding. Altman et al. (1984) states that sociological studies on crowding emphasise three issues;

> "...(1) differentiated analysis of density, with more attention given to the interpersonal, "micro" level of density, (2) interpersonal social processes that occur in high-density conditions rather than broad social outcomes alone, and (3) control of underlying variables that might account for density/pathology relations" (Altman et al. 1984, p.247).

It is the second issue that is of our interest, which relates to interpersonal interactions between people as an effect of crowding. According to Hall E. (1966), continued pressures from the surrounding deserts of Arab cities pressured them to culturally adapt themselves to high-density situations. He describes this affect on Arab behaviour in their close contact with others and their preference for being with others. Therefore, consistent evidence from the literature indicates that, within crowded situations, people may develop mechanisms in order to regulate interactions and withdrawal from others.

6.1.5.B Type of People

Rapoport (1977) described the cognitive classification of places or social groups as being at the heart of identifying the self, or social groups, to names, a process in which the discrimination between categories takes place. Therefore cultural rules produce "...distinctive cognitive categories and styles whereby groups understand and shape the environment" (Rapoport, A. 1977 p.111).

This is similar to Abu-Lughod's (1971) investigation of Cairo, where she describes the existence of thirteen major 'sub-cities' subdivided by distinctively different lifestyle zones. She suggested that the Cairene population and characteristics paralleled the differences in physical appearance of the quarters, in terms of the housing types, the available shopping facilities and the dominant dress of the inhabitants.

Within **table 6.5b**, it appears that there exists a probable use of social group discrimination in the process of describing places. This is evident in describing places by using the social class and the behaviour of people. According to the above description, the cognitive classification of 'Type of Person' was found to be an appropriate label for labelling this category. It mainly deals with the classification of people according to their social strata, lifestyle and behaviour.

6.1.5.B.i   Social Class

Table 6.5b indicates that 'social class'[8] is one of the factors that the majority of the subjects mentioned and therefore scores highest. During the subjects' description of the places, it was evident that they were well aware of the social class of the people associated within a particular area. This may indicate the existence of a social grouping system that relates evaluation of places in accordance with the social class of people within the nearest residential areas.

The majority of the subjects used this construct in order to differentiate between places. Research has frequently mentioned social and group issues within the context of territoriality. This type of research was conducted in order to study social regulation and viability to social systems such as gang graffiti in urban settings (Ley & Cybriwsky 1974), the demarcation of neighbourhoods in Ireland (Boal 1969), and the establishment of boundaries and walls around communities and cities (Saalman 1968). Research of this type basically describes territoriality in regulating social systems. Other cross-group comparative studies by Orleans (1973) between upper-class whites, Spanish-speaking people from downtown areas, and blacks from the Watts section of Los Angeles area which suggested that the upper and middle class whites had a more elaborate cognitive representation of the city as a whole (Altman, 1984).

The above studies suggest a need for further exploration into the social class system and its impacts on social behaviours and the physical structure of Cairo. Social class being a

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[8] Social Class is an outcome of major significance that is later derived from the second part of the analysis that investigates the questionnaire.

distinguished factor in differentiating between places raises two questions; does the class system affect people's perceptions and behaviour patterns in terms of places to visit? If so, then in what way? Does the physical environment in Cairo correspond to this behaviour? It is therefore further required to explore in more detail these questions by the use of the questionnaire.

6.1.5.B.ii   People's Behaviour

At this instance, it is postulated that people's behaviour is associated with factors such as the educational level and social class of people. These factors were commonly raised by the subjects and associated with non-central places, dirty areas, lower class residential zones, or how the people use the place. These associations were explored during the interviewing sessions by using the 'laddering' questions that have been previously described[9].

AMOUNT OF PEOPLE	Professionals Over 30				Professionals Under 30				Laymen Under 30				Laymen Over 30				Sub-total
Heavily /lightly used place															1	1	1
													B				
Crowded/busy Place	B	B	B	5	B		C	5	B	A	A	6		B	C	5	21
	A		B		B	B	A		C	A	A		A	B	C		
Lively/lifeless		A		1	B			1				1				1	4
									C					C			
Residential Density					A			2	A			1	A			2	5
						A								C			
Can/can't see people		B		1													1
Public/private place				1							B	2				1	4
	A									A				C			
® Family place/not		A		1									A			1	2
Pedestrians exist for company/not					B			1									1
Fast/ slow tempo of life										B		1					1
16A+16B+8C **Overall Total = 40**	4A+5B Sub-total = 9				3A+5B+1C Sub-total = 9				6A+3B+2C Sub-total =11				3A+3B+5C Sub-total =11			

Table 6.5a: Amount of People

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[9] See **chapter 5**.

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TYPE OF PEOPLE	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Social class of people	B	B	2	B A B		3	B A / A B		4	B C / B A B		5	14
Educational level of people					B	1				C / B		2	3
® High/low standard of living							A		1				1
Good/ bad behaviour of people	B	B	2	B A / A		3	A A		2	A		1	8

10A+14B+2C Overall Total = 26	4B Sub-total = 4	3A+4B Sub-total = 7	5A+2B Sub-total = 7	2A+4B+2C Sub-total = 8	
26A+30B+10C Both Totals = 66	4A+9B Sub-total =13	6A+9B+1C Sub-total =16	11A+5B+2C Sub-total =18	5A+7B+7C Sub-total =19	

Table 6.5b: Type of People

6.1.6 Type of Participation

Table 6.6 shows that the subjects differentiated between places through what they might do there, the variety of things that can be done and the ability to do something there or not. The majority of constructs here relate to whether or not the place had recreational activities. In Cairo, the existing recreational activities usually take place in a number of sports clubs[10], together with open areas and public walkways along the Nile and a few public gardens.

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[10] These sports clubs shall later be investigated within the questionnaire included in Part Two of the analysis.

TYPE OF PARTICIPATION	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Place to visit/not				C		1				C		1	2
Like to sit there/Not	A		1										1
Passive/active activity	A		1										1
Can/can't meet people there							B		1				1
Recreational/non recreational place	A B	C	3	C		1	C C		2	C B		2	8
Variation in activities				C A C		2			1				3
Multiple/ Single Use Of Place	B		1										1
Can/Can't do a certain activity	A B A		3				B B		2	B		1	6
6A+8B+9C Overall Total = 23	5A+3B+1C Sub-total = 9			1A+3C Sub-total = 4			3B+3C Sub-total = 6			2B+2C Sub-total = 4			

Table 6.6: Type of Participation.

6.1.7   Building Form

Table 6.7 lists the constructs that deal with building form and is the largest of all groups. This may not only indicate the interviewees' perceptions of the dominance of buildings within Cairo, but also suggests the existence of a detailed recognition of buildings. It is seen here that the professionals over 30 have a larger and more detailed ability to describe buildings in comparison to the other subject groups. It is has been well documented in the literature that there exist differences in judgement between professionals and lay-people (Groat, 1982; Devlin, 1990). This fact may be due to the existence of differences between professionals and lay-people in their expressions of ideas and manner of description that has been built up throughout years of academic training and through social transmission (Hubbard, 1996). Differences in descriptions may therefore appear within the more detailed level of terminology expressed among the professionals.

The high number of responses concerning buildings may be due to socio-economic issues, such as apartment value (i.e. the ability to find affordable accommodation). It may also be due to the visual dominance of the scale of buildings and its wide-spread presence within the physical environment in contrast to less frequently observed open areas.

6.1.7.A   Building Heights

Buildings in the central parts of Cairo are the most dominant features of the urban structure, and tend to dominate the skyline. Apartment buildings, together with hotels at some areas along the Nile, exceed 40 storeys and have been criticised as they cause an increase in the demand for car-parking spaces. The heights of buildings within the central parts of the waterfront and the whole city are in direct contrast to the non-central areas.

6.1.7.B   Buildings and Regulations

Owners of those large high-rise concrete buildings have recently extended their buildings and exceeded the height regulations for the purpose of maximising profit. This issue has largely been debated within the press during the past 15 years in a campaign to develop stricter regulations.

6.1.7.C   Building Style

The existence of a variety of building styles were also mentioned by the subjects where in certain cases they realised that places have no identifiable building style. As was earlier described, Cairo is a diverse city with various zones that have accumulated throughout the history of the city. A description of this diversity is highlighted in Abu-Lughod (1971).

> " Cairo combines the passing traditionalism and the agrarianism of an Egypt that has existed for centuries with the industrial modernism of an Egypt yet-to-be. Reflecting this, her population consists of diverse groups, some barely emerged from village life, some still immersed in the small worlds of traditional neighbourhoods, some cut off from both village and neighbourhood and adrift in the demimonde, some striving for mastery over the mechanical paraphernalia of the modern world, others seeking the harder mastery over its ideas and ideals, and a few, the most sophisticated, engaged in the challenging task of synthesising the old and the new, the indigenous and the 'imported'." (p.182)

It is therefore possible for the casual visitor to realise the diversity existing within the city, with various characteristics distinguishing between different areas. Many places within Cairo contain juxtaposing building styles and is therefore a common result mentioned within the interviews.

6.1.7.D   Building Condition

There are vast differences in the conditions of certain buildings, where buildings in bad condition where usually referred to the low status areas and slums. A high number of building failures located within these areas occurred, particularly as a result of the recent earthquake that hit Cairo. Nonetheless, the deteriorated slums in Cairo has existed for some time, but as a result of this earthquake, increased attention to building conditions has lately become a genuine issue.

6.1.7.E   Nature and Built Form

This construct has been classified within the 'Built Form' group and the 'Nature' group as the construct combines dimensions dealing with both the natural and the built environment. This construct indicates the varying environments existing along the Nile edges, particularly from the city centre, where the environment is heavily built along the Nile waterfront area of Cairo outwards to less urban stretches. Thus, further North and South of the waterfront the agricultural lands exist and are considered as 'natural places'. Nature in this case represent places vegetated areas ranging from agricultural lands to vegetated areas located within the city.

It is well documented within research applied on human perception that the 'natural' is usually considered in contrast to the 'man-made' (Ulrich, R. 1986). Many studies using multivariate procedures such as multi-dimensional scaling represent visual landscapes on a natural versus built grouping of scenes (see Kaplan et al., 1972; Ulrich, J. and Ulrich, M. 1976; Ward, 1997). Wohlwill (1983) argues that individuals readily discriminate nature from man-made environments because of the characteristic nature of the environments such as the curvilinear contours and the gradations of shape and colour. Others suggest an evolutionary heritage as being responsible for the different reactions to natural and man-made material (Ulrich, 1983). The results have therefore indicated the subjects' clear discrimination between natural and urban areas.

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Table 6.7: Building Form

BUILDING FORM	Professionals Over 30		Professionals Under 30		Laymen Under 30		Laymen Over 30		Sub-total
® Building maintenance	A	1			B	1			2
Building condition	A C / B A	4	B	1					5
Building standard (level)	A	1							1A / 1
® Building size	B	1							1B / 1
® Buildings heights (high/low)	B / C	2	A C	2	B / B	2	B / A A C	4	10
Organised/ disorganised bldgs.			B	1	A / B	2	A	1	4
Bldgs. in harmony/not with surroundings	A / A	2	A	1	B	1			3A / 4
Ordered skyline/not	B	1	B / A	2	B	1			4
Bldgs. close/Far from each other							B	1	1B / 1
Old/new style	B	1	B	1	C	1	A A	2	5
Buildings with/without style	C B	2	B / B	2	A A	2			6
Place with/without different styles	A	1			C	1			2
Local/foreign Style	C	1							1
Old/new bldgs.	C	1			B	1	B	1	3
Safe/unsafe bldg. Structure			A	1					1
® Natural/built	B / C	2	A / B	2	B B / A A	4	A / A	2	10
Bldg./ property abide regulations/not	B	1	C	1			B	1	3
Buildings well/badly placed			A	1					1
Building form visually relaxing/not	A	1							1
® Luxurious/cheap materials used	C	1							1
Good / monotonous style							B	1	1
Bldgs. prevent/allow aeration							A	1	1
Buildings far/close to Nile							B	1	1
27A-29B-11C **Overall Total = 67**	**8A-8B-7C Sub-total =23**		**6A-7B-2C Sub-total =15**		**5A-9B-2C Sub-total =16**		**8A-6B-1C Sub-total =15**		

Table 6.7: Building Form

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6.1.8   Scale

The following constructs have been grouped according to differences in size and scale of certain features within a place. It heavily refers to the subjects' discrimination between places according to spatial qualities. Here larger and more spacious places, streets, walkways and whole neighbourhoods are considered to be more preferential than less spacious areas. This strongly indicates that preferences towards spacious areas are due to the neglect and deterioration of the narrower streets, usually inhabited by the lower classes. This preference could also be a result of high levels of crowding in highly populated residential areas. The municipalities regularly maintain modern areas with larger and wider streets. Issues of size and space may also reflect the air quality of a place, where spacious areas are easily aerated than the usual highly populated residential areas.

As Cairo is a highly populated zone containing small housing units, it is therefore not hard to predict preference for more spacious areas. Hall (1966) particularly highlights this as he describes how Arabs value interior spaces of their apartments;

> "Enclosed space must meet at least three requirements that I know of if it is to satisfy Arabs: there must be plenty of unobstructed space in which to move around (possibly as much as a thousand square feet); very high ceilings – so high in fact that they do not normally impinge on the visual field; and, in addition, there must be an unobstructed view." (p.151)

Indeed, Cairenes usually speak about spaciousness with reference to accommodation; this may be a result of Arabs inhabiting cities that are considered as 'population sinks' through long periods of time. The over-built environment may be a reason for that, but it is also suggested that it could also be for climatic satisfaction, which is reflected in their preference for rooms with high ceilings. Unobstructed views also become curtailed within the context of Cairo due to the limited amount of open space.

SCALE	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Human scale/ no human scale	B		2										2
	A												
Wide/narrow streets			2	A		1	A	B	2		C	2	7
	B	B								C			
Wide/narrow pedestrian				A		1							1
Large/small place Wide/narrow space	B C	B	3	A		2	B		1	B		1	7
				B									
® Building size	B		1										1
® Building heights	B		2	A	C	2		B	2		B	4	10
	C							B		A A	C		
Open/closed place			2			2							4
	A	C		B	B								

9A-16B-7C | 2A-7B-3C | 4A-3B-1C | 1A-4B | 2A-2B-3C
Overall Total = 32 | Sub-total =12 | Sub-total = 8 | Sub-total = 5 | Sub-total = 7

Table 6.8: Scale

6.1.9 Nature

From an evolutionary perspective (**chapter 2**), places that reflect the capacity for human evolution in natural environments are usually preferred (Appleton 1975; Orians 1980; Kaplan, S. and Kaplan, R. 1982; Ulrich 1983; Woodcock 1984). Studies made on American groups have categorised 'natural' if the landscape predominantly contains vegetation and/or water, and if there is an absence or inconspicuous amount of man-made features. Furthermore, studies that have examined aesthetic preferences for urban scenes with and without vegetation and have found consistent evidence indicating the presence of vegetation, particularly trees, have positive effects on preference (Ulrich, R. 1986).

6.1.9.A   The Presence of Vegetation

The majority of responses fall into the category, which determines whether or not vegetation exists in a place. From within the interviewing sessions, the Laddering technique was found helpful in discovering preferences for places containing vegetation. This coincides with a large body of research which indicates that most city dwellers attach considerable importance to urban forests and parks, where views to trees, grass and open spaces are judged to be important environmental amenities (R.Kaplan, 1983).

NATURE	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Harmony with Nature	A												1
® Natural/Built	B		2	A		2	B	B	4	A		2	10
		C		B			A	A		A			
Attracted to Nature/ Attracted to Building			1										1
	C												
Presence of vegetation/not	B	A	A	5	A	A	4	B	A	B	6	A	A	C	5	20
	A	A			A	A		A	A	A		B	A			
Natural/Ugly										B		1	1

21A-9B-3C	5A-2B-2C	5A-1B	6A-4B	5A-2B-1C
Overall Total = 33	Sub-total = 9	Sub-total = 6	Sub-total =10	Sub-total = 8

Table 6.9: Nature

6.1.10 Views

As was earlier mentioned, there are many restaurants located on the water edges, which block the views to the Nile from pedestrians. This occurs as a consequence of the existing walls with overgrown vegetation that bound those restaurants. High-rise apartment buildings also obstruct views from buildings further located from the waterfront.

6.1.10.A   Width of Views

This construct reflects what was earlier discussed concerning the size of spaces, where people indicate that they prefer more spacious areas affording wider and non-restricted views. Limited public areas in Cairo with wide views may be an important factor for the subjects' perceptions of places.

6.1.10.B   Views to the Nile

The Nile waterfront area is considered as a privileged zone, where apartments having views to the river are rather expensive. As was earlier discussed, studies applied on landscape quality often discovered that scenes having an object of water were highly preferred. This may reflect the evolutionary perspective, in that it supports the view that places, which can afford the ability for human evolution, are highly preferred. This

indicates that both social and instinctive responses act together in heightening the significance of having views to the Nile.

VIEWS	Professionals Over 30	Professionals Under 30	Laymen Under 30	Laymen Over 30	Sub-total
Can/can't see hotels & restaurants		C 1			1
Can/can't see Nile-fountain		C 1	C C 2		3
Can/can't see water	A 1		A	1	2
Wide/narrow views	B C / B 3	C / A 2			5
Good/bad views	A 1				1
Can/can't see sky		1 / B			1
® See a large/small part of the Nile			C 1		1
® Views to the Nile		A 3 / C B		1 / A	4
6A-4B-8C Overall Total = 18	2A-2B-1C Sub-total = 5	2A-2B-4C Sub-total = 8	1A-3C Sub-total = 4	1A Sub-total = 1	

Table 6.10: Views

6.1.11 Nile

All the subjects were requested to identify 8 of the 12 places to be located along the waterfront area in Cairo. **Table 6.11** lists the constructs elicited from their responses. They describe the physical configuration of the River Nile (i.e. mainly dealing with the width of the river and how much of the river is viewed from particular places). This category also describes the level of contact with the river (i.e. whether or not they are in close contact).

6.1.11.A Width of the Nile

Seven of the variables deal with the discrimination between wide and narrow parts of the River Nile. The wider parts of the river were usually more appreciated by the subjects, as they contained a larger surface area of water. The wider parts of the Nile may have been more interesting as falookas (sail boats), motor boats and ship restaurants are usually located within these parts of the Nile, whereas the narrower parts are usually dull, over-vegetated and lack maintenance and activities.

6.1.11.B   Vicinity to the Nile

The vicinity to the body of water is a construct that was frequently mentioned. Being close to the Nile may also be a privilege similar to viewing the Nile, perhaps due to the fact that the waterfront has more appealing climatic, recreational and spatial qualities that is not matched within any other area of the city. Furthermore, high-class apartment buildings are usually closely located closer to the river.

NILE	Professionals Over 30		Professionals Under 30		Laymen Under 30		Laymen Over 30		Sub-total
® Near/far from water	B	1	C	1			A	1	3
® Distance to and from the river			C / B	2			C	1	3
® See large/small part of the Nile					C	1			1
Surrounded/not surrounded by water							B	1	1
Wide/narrow part of river	B B	2	B	1	A C / C	3	C	1	7
Moving/still water					A	1			1
® Views to the Nile			A / C B	3			A	1	4
5A-7B-8C Overall Total = 20	3B Sub-total = 3		1A-3B-3C Sub-total = 7		2A-3C Sub-total = 5		2A-1B-2C Sub-total = 5		

Table 6.11: Nile

6.1.12 Design and Planning Issues

Table 6.12 shows that this dimension is mostly mentioned by the professional group. Here, the professionals mentioned 16 constructs in this category as opposed to 9 constructs mentioned by the lay people. The table shows a high level of awareness of the planned/organised areas and the unplanned/unorganised areas. It gives indications to the contrasting conditions of areas in Cairo. As earlier mentioned, the deteriorated and neglected zones usually refer to highly populated areas and slums that lack any appropriate infrastructure.

DESIGN & PLANNING ISSUES	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Planned/not planned well/badly planned	A		1	A / A	A	3	A		1				5
Organised/unorganised place	A	A	2	A / A	A	3	A	B	2	B / A		2	9
Designed/no designed	A / A	B	3	B		1	A / A	A	3				7
Dynamic/static Place	C		1										1
Easy/difficult to develop		B	1										1
Improved/not improved		B	1							A		1	2
® Luxurious/cheap materials used	C		1										1
Needs/does not need more streets				C		1							1
Well/badly designed place	B		1										1
18A-7B-3C Overall Total = 28	5A-4B-2C Sub-total =11			6A-1B-1C Sub-total = 8			5A-1B Sub-total = 6			2A-1B Sub-total = 3			

Table 6.12: Design and Planning Issues

6.1.13 Maintenance

Similar to the existence of areas that lack planning, the same areas usually referred to poorly maintained, and less managed areas. This issue reflects a majority of the older residential areas within Cairo. Improving the infrastructure of many zones is a usual public demand by which the municipalities attempt to satisfy. Some of those areas are less aesthetically pleasing, were therefore mentioned by the majority of the subjects in **table 6.13** and consequently highlights the significance of this issue.

6.1.13.A   Cleanliness

Again this reflects an issue of the maintenance of particular areas. It expresses the contrast to regularly cleaned areas, which usually exist along central places along the Nile banks and the more modern residential areas within the city. From the interviews, it was realised that there was a relationship between the level of cleanliness and the level of maintenance within a place. This is particularly witnessed within central areas and which lie in contrast with the neglected areas.

MAINTENANCE	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Well maintained archaeological site		A	1										1
Maintained-managed /neglected place	B	A	4		B	3	A	A	5	A B C		4	16
	C	A		A B			A A A			A			
Cleanliness	A A		5	A A A		4	B	A	5	A A C		4	18
	A A A			A			A A A			A			
® Building maintenance			1				B	1					2
		A											
Clear/dirty water							A	1					1
29A-6B-3C Overall Total = 38	9A-1B-1C Sub-total =11			5A-2B Sub-total = 7			10A-2B Sub-total =12			5A-1B-2C Sub-total = 8			

Table 6.13: Maintenance

6.1.14 Night Lighting

As previously mentioned people usually go out for walk during late evenings particularly after sunset where the climate is relatively cooler. However, the central areas along the Nile waterfront are the only ones, which are lit by night. This is in contrast to the northern and southern Corniche of the Nile as they are usually left with little light and few and are hardly visited. Some negative responses also reflected that the lack of night light along the opposite banks, as those particular locations were not interesting because there was nothing to see. Therefore places that were attractive are usually restricted to central places where night lighting exists on either sides of the banks with people to meet and activities to participate in (see **table 6.14**).

NIGHT LIGHTING	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Existence of Night lighting		A	3	B B		3			2			2	10
	C	B		A			C B			C A			
Night light fits/does not fit surroundings		A	1										1
4A-4B-3C Overall Total = 11	2A-1B-1C Sub-total = 4			1A-2B Sub-total = 3			1B-1C Sub-total = 2			1A-1C Sub-total = 2			

Table 6.14: Night Lighting

6.1.15 Location

To better describe the variables listed in **table 6.15**, it is necessary to separate between where the place is located with respect to the subject's home, and how close the place is with respect to waterfront. The following therefore attempts to distinguish this.

6.1.15.A   Place Location

The constructs mentioned here may relate to the convenience in reaching places. The subjects here related central areas to central transport areas where more convenient methods for transportation are facilitated, such as bus stations and the underground tube. Places where further identified by their vicinity to home, which may also describe the convenience or inconvenience for reaching the mentioned places.

6.1.15.B   Location within a Place

The table also includes the direct location to the Nile water, this may indicate that the closeness to water is a basis for discrimination between places along the Nile. This further indicates the preference to be closer to the water at the Nile Corniche. Descriptions of places that involve the actual position of a place with respect to the Nile are commonly observed within the subjects' descriptions of places. As previously mentioned, higher priced properties are located close to the river together with high class residential areas, thus it becomes evident that high prestige is linked with the waterfront.

LOCATION	Professionals Over 30	Professionals Under 30	Laymen Under 30	Laymen Over 30	Sub-total
Far from/near to Home		A 1	1 B	B 1	3
Central/not				C 3 / A C	3
® Near/far from water	B 1	1 / C		1 / A	3
® Distance to the the Nile		C 2 / B		1 / C	3
3A-4B-5C Overall Total = 12	1B Sub-total = 1	1A-1B-2C Sub-total = 4	1B Sub-total = 1	2A-1B-3C Sub-total = 6	

Table 6.15: Location

6.1.16 Cost Factors

The following constructs represent issues of affordability and investment. It appears here that the affordability of the place is an important factor in describing it. Whether restaurants or private clubs exist, the fact remains that there are places along the Nile where paying is a pre-requisite to access. The lack of public space in close vicinity of the studied area also contributes to the importance of this issue.

Furthermore, many people in Cairo nowadays look at places in terms of their monetary value. Therefore, place descriptions relate to the cost of living in an area or by describing places by property value. These issues reflect a current situation in Cairo, which arises due to the lack of convenient and affordable areas to visit or even to live in. It may also reflect the tendency for Cairenes to speculate on property prices for probable future investment (see **table 6.16**).

COST FACTORS	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Dear/Cheap place to Visit										A	A	2	2
Dear/Cheap place to Live				A		1							1
Economic cost of place	A		1										1
Investing area/not				B		1							1
® high/low Standard of living				A		1	A		1				1
Expensive/Cheap Land Value				B		1							2
6A+2B	1A			2A+2B			1A			2A			
Overall Total = 8	Sub-total = 1			Sub-total = 4			Sub-total = 1			Sub-total = 2			

Table 6.16: Cost Factors

6.1.17 Safety

Table 6.17 shows that 6 out of the 12 professionals differentiate between places on the basis of safety, whereas the laymen do not mention this issue. As previously suggested, this may reflect the educational background of the professionals as opposed to the laymen. It is suggested here that issues of safety maybe a result of a more Western influenced education, which usually attempts to determine levels of crime within cities

(particularly within U.S. cities). This does not completely negate the common recognition of un-safe areas, but it is realised from the interviews that the professionals relate safety to places with traffic, and with places having scarce human involvement. The interviews further infer that safety is related to places to some lower status residential areas. However, the fact remains that the lay public did not mention safety, and it is suggested that this is as a result of different educational background between professionals and lay people.

SAFETY	Professionals Over 30			Professionals Under 30			Laymen Under 30			Laymen Over 30			Sub-total
Safe/Unsafe	A	A	3		A	3							6
	A			A		B							
Safe/Unsafe bldg. structure					A	1							1
6A-1B Overall Total = 7	3A Sub-total = 3			3A-1B Sub-total = 4			Sub-total = 0			Sub-total = 0			

Table 6.17: Safety

6.2 Overall Descriptive Analysis

As was earlier mentioned, the Laddering technique helped to identify how the constructs[13] relate to the previously listed categorisations. At this point it is intended to further categorise the constructs by the aid of the theoretical approaches mentioned in **chapter 1**. It is therefore intended to list all the variables elicited from the interviewed subjects in relation to the frequency by which they were mentioned. The preliminary examination of the constructs revealed that the subjects could be classified into 21 groups. Since the previous section dealt with identifying the variables associated with the proposed case study, it was therefore initially required to individually examine these variables. It should be clear that, from a transactional and holistic perspective, the deduced results are inseparable in reality. However, for the time being, the constructs are to be separately examined. The revealed results shall therefore be later discussed in a more holistic manner in order to examine how places were construed.

The most frequently mentioned constructs are highlighted in **table 6.18** and **fig. 6.1**[14], and at an initial stage, uncover the salient perceived variables. The table demonstrates that the majority of the subjects mentioned the construct that deals with levels of crowd. The variable following in line reflects the awareness of a lack of vegetation within the central areas of the city in contrast to the peripheral areas. The level of cleanliness and maintenance are also listed in the top half of the list, indicating that a high number of subjects discriminate between places on the basis of these conditions.

On a three-point scale (not important-important-very important) the table also represents the subjects' group judgements and the level of importance of each construct, which was calculated by using the median. **Fig 6.2**[15] presents a bar chart containing the importance of each category. The subjects evaluated issues dealing with Planning, Design, Cost,

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[13] As this stage deals with the categorisation of the constructs, it is important to highlight here that the constructs are treated as variables that relate to the subject of study. Therefore the use of the label 'variables' intends to refer to the 'constructs' that have previously been mentioned. The word 'construct' denotes what Kelly (1955) refers to the concepts that people hold about a certain phenomena.

[14] **Fig 6.1** is derived from **table 6.18**.

[15] **Fig 6.2** was derived by computing the median and has been applied on each of the 20 categories previously listed within tables.

Sensory, Maintenance, Nature and Safety, as the most important of all groups. The chart also shows the overall percentages of the derived variables, where the median has been calculated on the overall evaluation of constructs in order to represent the level of importance of each category. The table lists 20 important categories of constructs out of the 25 that represent 477 different constructs.

Table 6.18, **fig. 6.1**, and **fig. 6.2** also highlight other issues that shall later be found to be important, such as 'Social class of people', where 14 out of the 24 subjects mentioned this variable. 'Level of cleanliness' and the 'level of maintenance' were also mentioned by many subjects and reflect the awareness of the need to upkeep particular areas.

Construct	No. of subjects mentioned this construct out of 24.	Level of importance
The existence of crowding	21	moderately important
The existence of vegetation	20	very important
Level of cleanliness	18	very important
Level of maintenance	16	very important
Sound pollution	14	very important
Social class of people	14	moderately important
Pollution	13	very important
Natural/Built	10	very imp. / mod. imp.
Well/badly used place	10	moderately important
Existence of night light	10	moderately important
Heights of buildings	10	moderately important
Width of streets	10	moderately important
Large/small place	10	moderately important

Table 6.18: Highlights the constructs mentioned by not less than 10 subjects
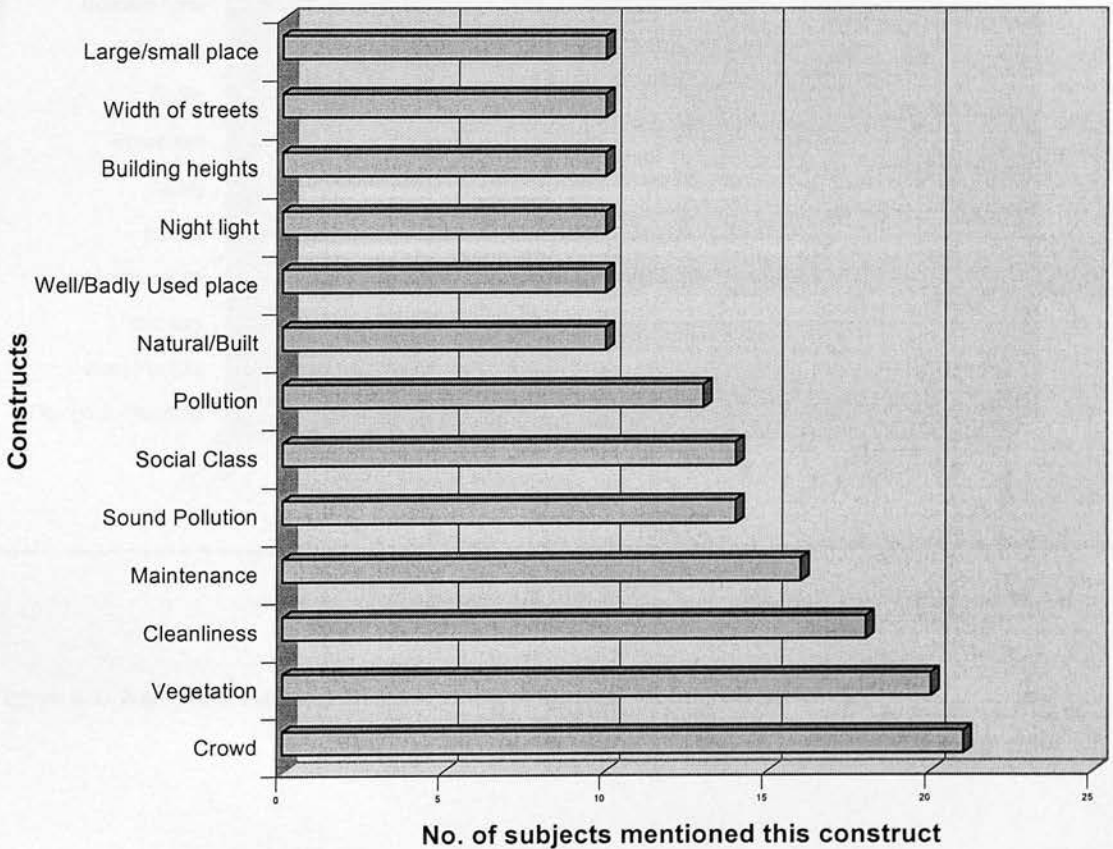
Figure 6.1: Bar chart representation of table 6.18.
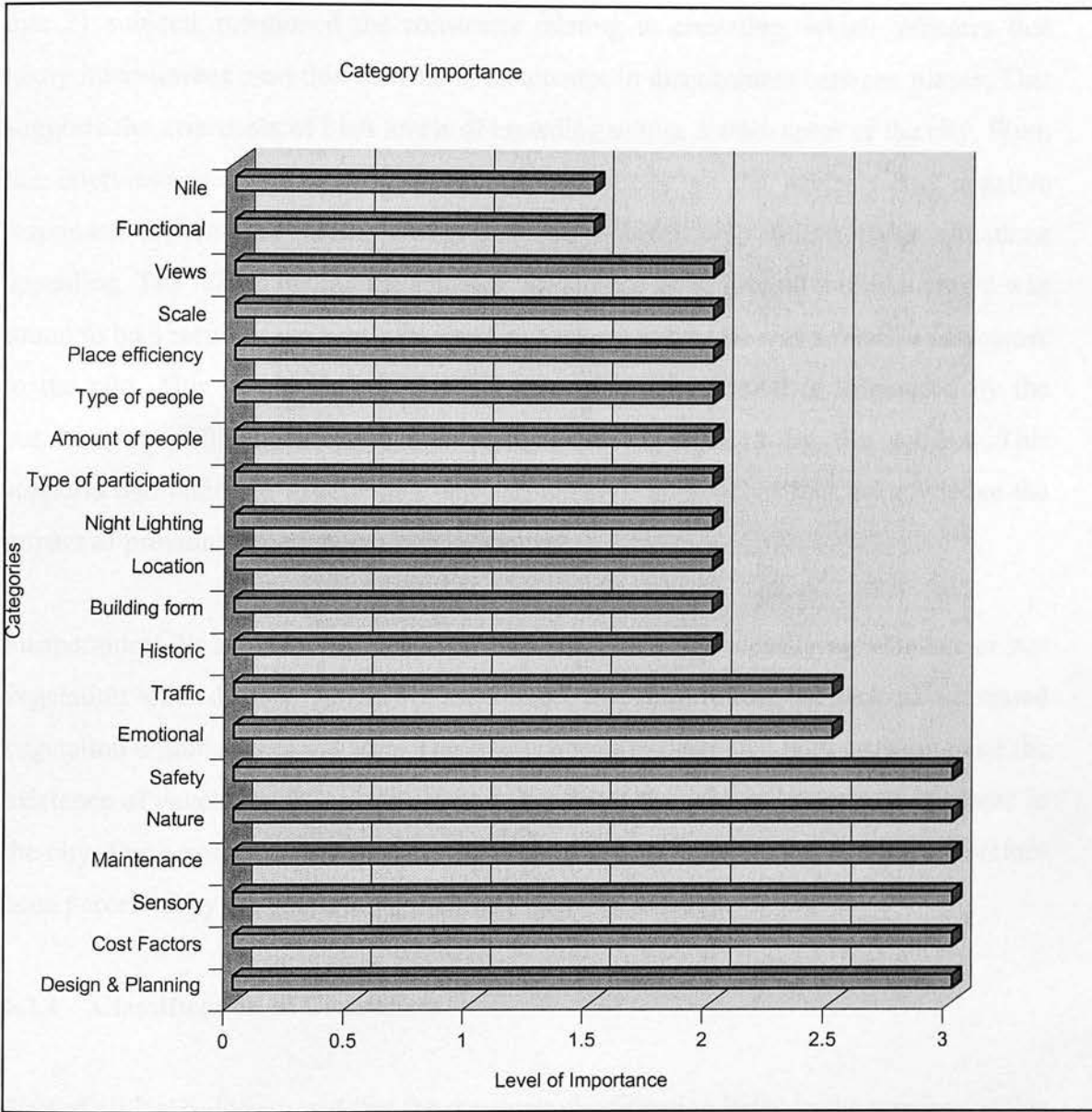
Figure 6.2: Bar chart showing the level of importance of all the categories.

Since a large percentage of the subjects mentioned the above variables, they were therefore considered to be important and were later considered within the design of the questionnaire. They reflect the subjects' shared descriptions of places in Cairo and also highlight certain phenomena existing within these places. For example, it is seen here that 21 subjects mentioned the constructs relating to crowding, which indicates that many interviewees used this variable in an attempt to discriminate between places. This suggests the awareness of high levels of crowding within certain areas of the city. From the interviewing sessions, it was realised that nearly all the subjects had negative responses to crowded areas, except for one subject who found these situations appealing. The reason behind the subjects' preference to be present within a crowd was found to be a result of the subject's agrarian background, as he was a relative newcomer to the city. This would suggest that his perception of a crowd is influenced by the considerably different lifestyle and background experienced by the subject. This supports and endorses experiential and participatory approaches that acknowledge the impact of previous experiences upon judgement.

Furthermore, 20 subjects differentiated between places by identifying whether or not vegetation existed there. As earlier mentioned, this may reflect the lack of witnessed vegetation within spaces in Cairo. The results above indicate that both crowding and the existence of vegetation in a place seems to dominate the subjects' construal of places in the city. Furthermore, many areas in Cairo do in fact lack vegetation and have therefore been perceived by the subjects as important elements configuring places.

6.2.1 Classification of Constructs

First of all it should be noted that the construct classification listed in the previous tables was rather straightforward, and was implemented by the researcher, being considered as an initial stage of analysis. Preliminary results indicate the importance of certain groups such as building form, scale, nature, maintenance, cost, sensory, design and planning issues. **Table 6.19** lists the groups together with the most frequently mentioned constructs within each group. It shows that the 'Building Form' group is the most frequently mentioned group. As has been mentioned earlier, this reflects the dominance of the built environment within the urban fabric of the city. It also underlines the subjects' use of many building-related constructs in determining differences between places.

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The 'Sensory' category follows, and deals with issues such as 'pollution' and 'air-breeze' and therefore reflects the level of awareness of the existing air contaminated conditions of certain areas within the city. Furthermore, maintenance, nature and sensory issues dealing with pollution, cleanliness, and general upkeep of places are not only a result from the subjects' perceptions to the actual properties of places, but may also be due to heightened global awareness of environmental issues.

Another group deals with 'Place efficiency' may also underline the importance of accessing certain places within Cairo, as this reflects the usual transportation problem existing among the Cairenes. In similarity to **table 6.18** the level of crowd is categorised under the 'Amount of people' group together with the 'Residential density' variable. Here the issue of 'Scale' is shown to be frequently mentioned, and thus highlights its importance and reflects the earlier discussion relating to the importance of scale amongst Arabs, particularly Cairenes.

'Design and Planning issues' presents the subjects' awareness of the lack and at times negligence of planned and designed places, required for public use. Furthermore, 'Social class' is highlighted within the 'Type of people' group and reflects the numerous times this construct has been used in order to discriminate between places.

General Categories	Most frequently mentioned constructs	Total No. of constructs
Building form	Natural/Built Building Heights	67
Place efficiency (how the place is used)	Access Good/bad use of place.	44
Amount of People	Crowd Residential density	40
Maintenance	Maintenance and Management of place Cleanliness, Building Maintenance	38
Sensory	Pollution + Sound pollution Air breeze	36
Nature	The existence of vegetation Natural/Built	33
Scale	Building heights Large/small place Wide/narrow streets	32
Design and Planning Issues	Organisation of place Designed place or not	28
Type of people	Social class People's Behaviour	26
Functional Use	Tourist place Residential place	26
Type of participation	Recreational place/not. The ability to do a certain activity/not	23
Nile	Wide/Narrow section of Nile Views to the Nile	20
Views	Wide/Narrow views Views to the Nile	18
Traffic	Heavy/little traffic Traffic ordered/not	16
Location	Near/far from Home Central place/not Near/far from water	12
Night light	Night light Exists/Not	11

Table 6.19 Most frequently mentioned constructs.
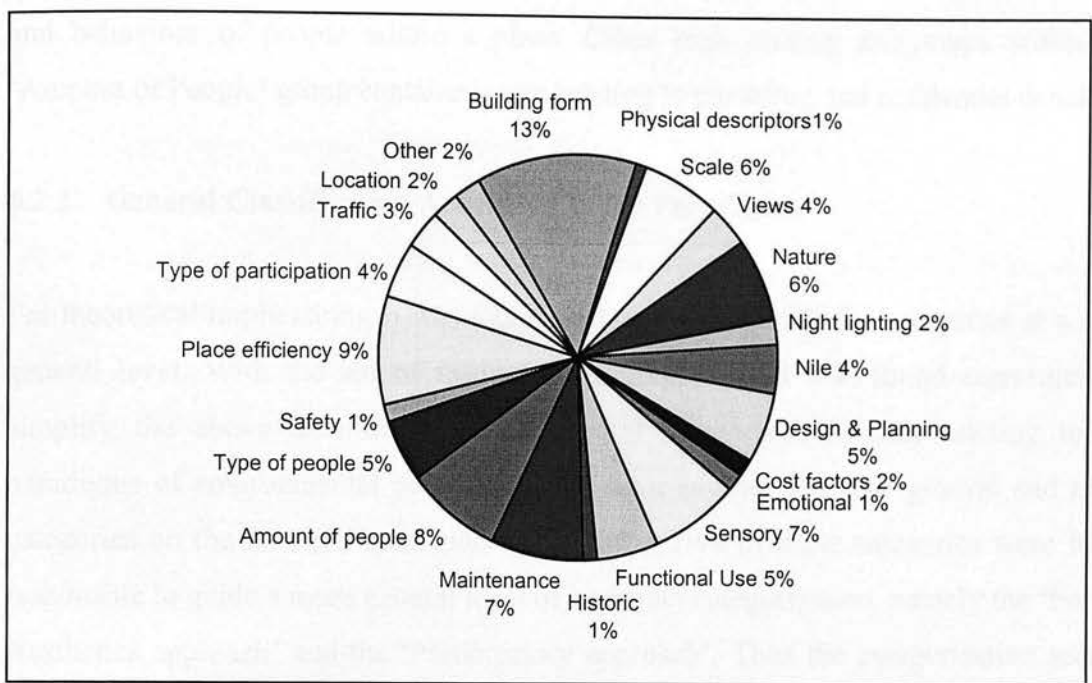
Figure 6.3: Pie chart containing the frequency responses of all the mentioned constructs.

Fig 6.3 illustrates with the aid of a pie chart the frequency by which each category was mentioned. It is clear that issues relating to 'Building Form' are most frequently mentioned within the interviewing sessions. This category shapes 13% of the overall constructs and includes many subgroups. As earlier mentioned this may result from the physical precedence of buildings in numbers and size, particularly within along the urban waterfront.

'Place efficiency' configures 9% of the overall number of constructs and relate to how easy/difficult a place may be accessed (i.e. indicating whether the place is near or far and/or commuting problems). The amount of people existing in a place is also seen to influence judgement and constitutes to 8% of the responses. As this group predominantly contains issues relating to crowding, thus the group shows that a large amount of place judgement results from people's irritation from crowded areas. The 'Maintenance' and the 'Sensory' groups shape 7% and illustrate that the general upkeep and cleanliness of places also reflect a considerable percentage of the overall pie-chart.

Finally, two groups have mentioned issues relating to people, which in sum, add up to 13% of the overall number of constructs. As has previously been mentioned, the constructs that make up the group 'Type of people' mainly relate with the social class

and behaviour of people within a place. Other high scoring subgroups within the 'Amount of People' group contains issues relating to crowding and residential density.

6.2.2 General Classification According to the Paradigms

For theoretical implications, it was found necessary to simplify the categories at a more general level. With the aid of **table 1.1** in **chapter 1**, it was found convenient to simplify the above data into a more general categorisation, thus relating to the paradigms of environmental perception. The table highlighted four general end result categories on the far right-hand side of the table. Two of these categories were found reasonable to guide a more general level of construct categorisation, namely the 'Formal Aesthetics approach' and the 'Participatory approach'. Thus the categorisation seen in **fig 6.4** is considered to be based upon a theoretical basis and was found to relate to the research approaches previously mentioned in **table 1.1**.

It is therefore found reasonable to highlight here that the discovered variables were not representative of all the variables that may affect human perception. This is because the method used is more subjective, as it does not attempt to identify independent variables such as 'mystery', 'complexity', and 'legibility', which are derived from more objective research approaches. Furthermore, the generalisation here is not intended to be highly accurate but was found helpful for linking the results to the research approaches listed in **chapter 1**. These categorisations were conducted in order to determine how much the individual paradigms covered the overall constituents of judgement.

As has earlier been mentioned within **chapter 1** and **chapter 6**, many issues may cross a number of paradigms and were therefore difficult to categorise. However, aspects relating to the socio-cultural paradigm were found to cover many fields and were therefore difficult to include within the pie chart in **fig 6.4**.

Table 6.20 describes how the groups were classified in relation to the theoretical approaches earlier proposed. Firstly, it was realised that the interviewees were aware of many physical attributes of the environment. Here all the categories dealing with physical descriptions of places were summed up to create a group, namely 'Formal Aesthetic' variables.

Similarly the second group relates to the 'Experiential' paradigm and therefore lies within a 'Participatory' approach that was earlier mentioned within **chapter 1**. The variables grouped here mainly result from individuals' interactions within places and further relate to the convenience in reaching certain locations. 'Place efficiency', 'Participatory', and the 'Traffic' categories are mainly considered as outcomes of human interactions within places. As the categorisation of this group is not as straightforward as the other groups, the reasoning behind the 'Participatory Variables' group shall individually and briefly be explained below.

Formal Aesthetic variables	Participatory variables
Scale	Functional Use
Building form	Place efficiency
Nile	Traffic
Other physical descriptors	Type of participation
	Location
	Amount of people

Table 6.20: Various categories configuring the 'Formal' and 'Participatory' variables.

6.2.3   Participatory Variables

In comparison with the 'Formal Aesthetic' variables group, participatory variables are less straightforward in classification. It is therefore necessary to put forward a relatively more detailed description of the group and its theoretical grounds. The overall variables that have been labelled as 'Participatory' deal with either pre-conceived involvement or actually experienced involvement within places.

The Experiential Paradigm, mentioned in **chapter 1,** has described judgements resulting from human interactions within the environment. This paradigm deals with exploring factors relating to the physical environment but also relates to people's pre-conceived goals and interactions within a place. Therefore, a large number of variables resulting from interactions within places were derived. These attributes mainly deal with traffic, how well the place works, what activities take place there and aspects of place location. **Table 6.20** collectively combines the chosen groups that relate to how places are experienced. The individual constructs within these groups have previously been

listed[16]. With the help of the theoretical approaches listed from the literature and illustrated within **table 1.1** in **chapter 1**, the theoretical categorisation of the groups at a more general level is illustrated in **fig 6.4**.

6.2.3.A   Functional Use

This approach similarly relates to the Experiential Paradigm, as it is orientated towards identifying various activities involved within places[17]. Here, the function of a place determines the various types of activities taking place there, and thus suggests a participatory orientation.

6.2.3.B   Place Efficiency

A majority of constructs relate to access and the ability to reach a particular location is usually experienced through interactions with places. It also deals with the way a place is used, as some places may not be appropriate for public use as they lack basic design features that would facilitate this.

6.2.3.C   Traffic

Mainly deals with how congested and organised the traffic is. This response is daily experienced via commuting within the city, particularly during rush hours on the way to and from work.

6.2.3.D   Location

It was realised from the interview sessions that the location of a place is associated with its vicinity to home or work, thus facilitating commuting and the ability to reach certain areas. Places have also been described in terms of their centrality, which also indicates that descriptions of places and takes place in accordance to the ease to reach a place and is therefore also experienced. Thus this group may also have shared similarities with

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[16] For the individual constructs within these sub-categories see **table 6.2** for 'Place efficiency', **table 6.3** for 'Traffic', **table 6.6** for 'Type of participation' and **table 6.15** for 'Location'.

[17] See **chapter 1** and **table 1.1**, which relates 'Functional Use' research to Participatory variables.

access. It also identifies places in terms of their vicinity to the waterfront area. Thus this group addresses experienced aspects that are an outcome of the ability/inability to reach a particular place.

6.2.3.E   Type of Participation

This group relates to the particular ability to get involved in certain activities, such as recreational or social activities. The factors therefore demonstrate descriptions of places that are direct outcomes of people's interactions within places.

6.2.3.F   Amount of People

The constructs listed in **table 6.5 a**, were also realised as being experienced. The most mentioned construct within this part of the table relates to the levels of crowds existing in a place, which is largely experienced. Another construct within the table is the residential density of the area which, and similarly to crowding, was not liked by the subjects.
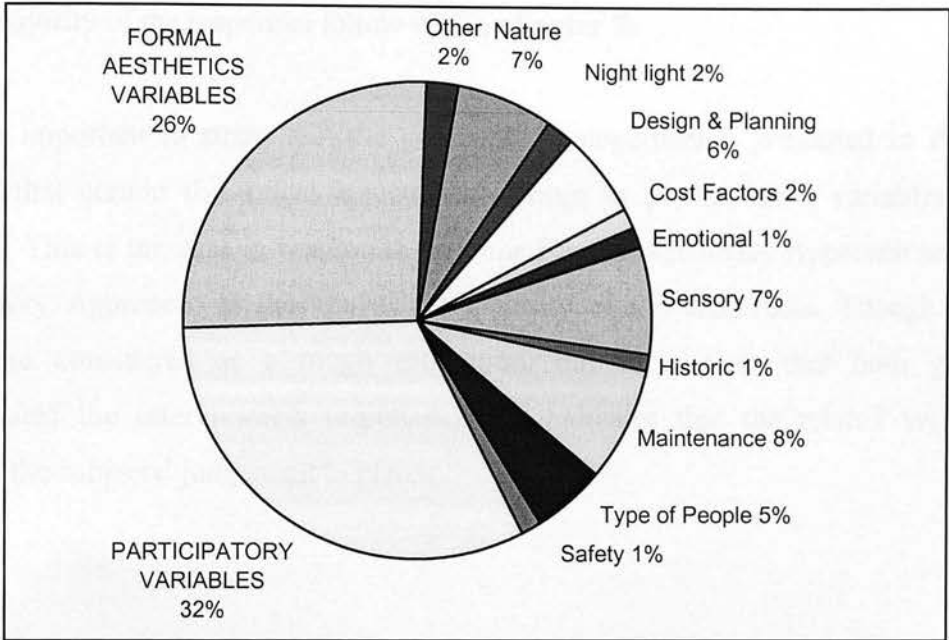
Figure 6.4: Pie chart representing the general classification of the constructs on a theoretical basis.

As was previously been mentioned the variables in reality cannot separately be explained as they work in a holistic manner. Therefore, for research purposes the variables were segregated in order to determine the prominent variables that may relate to the literature, which helps to better understand and identify factors relating to the context of the case study.

Fig 6.4 shows a pie chart that represents a more general level of classification of the constructs. This was achieved by interpreting the constructs and linking them to the paradigms of environmental evaluation, mentioned within **chapter 1**[18]. This was found helpful in linking the results to the theoretical discourse in order to estimate place judgement. It was also beneficial in simplifying the results for further exploring attributes of place within the second stage of the case study, which involves the analysis of the questionnaire.

The pie chart illustrates that the majority of responses deal with experiences that result from the individual's participation within places and therefore reflect the extent to

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[18] See **chapter 1** for a detailed description for the related theoretical approaches applied on environmental judgement.

which responses result from interacting within places. These responses reflect the Participatory approach. Other issues relating to physical aspects of place and that also shape a majority of the responses follow within **chapter 7**.

It is also important to stress that the generalised categorisation presented in **fig 6.4** indicates that certain theoretical approaches attempt to predict more variables than others do. This is the case in relation to both the Formal Aesthetics Approach and the Participatory Approach, as they cover the majority of the constructs. Though these figures are considered as a rough estimation, but it is clear that both groups predominated the interviewee's responses. This indicates that the related variables governed the subjects' judgement to places.

6.3 Conclusion

This chapter is considered as the exploratory part of the research. It was set in order to make generalised deductions of the overall perceived aspects of place. Therefore it is noteworthy to say that there was no specific target to achieve. This chapter serves as a foundation from which many issues have branched out. They shall later be explored within the following chapters in a rather goal directed manner. It is also important to highlight that the results indicate that the professional and lay group comparison did not appear to contain significant differences between them. Therefore both groups were dropped and treated as the same sample of subjects. Nevertheless, as the professional group shaped 50% of the subjects, the research results slants towards a higher-than-average recognition of built form and planning and design issues.

Since many issues relating to the context of study have been raised, they had to be briefly explained in order to gain an overall idea of the various variables perceived. The final part of this chapter ended with a few descriptive statistics, which were helpful in describing significant dimensions of Cairo and the waterfront. The generalisation conducted in the final part of this chapter was also found helpful in linking the theoretical review of the paradigms with the results. Therefore the following attempts to summarise the contextual and theoretical findings achieved within this chapter.

6.3.1   Context

Though this chapter has been rather lengthy, it highlighted many aspects relating to the nature of Cairo and the waterfront area. It has been clear that many constructs described issues relating to building form (see **table 6.19**). Other constructs relating to scale and the amount of vegetation within places have also appeared within this chapter. A 'Natural/Built' construct was raised by the majority of the subjects and may have resulted from the dominance of one feature over the other. Indeed it was observed that 'Scale' largely relates to the dominant feature of building heights witnessed within central areas of the Cairene waterfront. Congruently, the lack of existing vegetation was frequently mentioned by the interviewees, particularly referring to heavily built central areas.

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Other aspects of the context were also regularly mentioned during the interview sessions. These aspects relate to the maintenance, general upkeep of place, level of cleanliness and pollution. They all reflect the situation of certain places that have been neglected by the municipalities. They give insights into the level of awareness and probable irritation of the subjects towards specific places within Cairo. Other places were found by the subjects to be neglected as they witness general lack in planning and design and may range from the non-existence of appropriate seating areas to the lack of cleanliness.

Issues that related to crowding and residential density have also appeared to dominate responses[19]. In contrast, specific classification of places according to the social class of people existing in a place, were not been referred to within the paradigms. Meanwhile, it was illustrated above that these constructs have frequently been mentioned by a large number of subjects. This was presented within the 'Type of people' group, which represents the subject's descriptions of places according to the social class of people and their various behaviours.

Therefore this chapter raised basic attributes of the context that seem important for further investigation, particularly within the waterfront context. These be summarised within the following points.

1. Dominance of the built environment along the waterfront.
2. The scale and size of areas, where old and narrow areas contrast to the more modern and planned-out areas with wide streets, which do not only differ in physical appearance but also in the general upkeep of the place.
3. The responses further showed that many places remain neglected with little concern and less attention to maintenance in comparison to central areas.
4. Over-crowding is another issue that determines how people judge certain areas, particularly along the waterfront.
5. Many subjects evaluated places according to the social class level and behaviour of the people present within an area.

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[19] See **table 6.19**.

6. Sensory qualities (e.g. air-breeze and pollution) largely influence judgement and behaviour.

7. Access was another variable that relates to the ability to reach certain places, particularly along the Nile water-edges.

8. The location of places in relation to home and work. This response might reflect the importance of place locations for the convenience of daily commuting.

Indeed these issues remain to be individually researched, therefore the following chapters intend to simplify the data represented here in order to focus the research on more specific aspects of Cairenes' and their urban waterfront.

6.3.2 Theory

As was earlier discussed, within the transactional approaches, observer bias should be accounted for. Therefore, it is in the researcher's interest to consider that the general categorisation can be a result of the researcher's background readings, though these categories have been assessed form the literature review in **chapter 1**. However, it is found reasonable to note that the two generalised groups processed by the researcher are considered as a general estimation for the dominant aspects of place that the subjects' had perceived.

It is suggested at this point that physical and experiential attributes may largely determine place construal. Physical attributes have frequently been mentioned within earlier research, as much research seeks to link aesthetic judgement to formal qualities within the environment. Nevertheless, the physical attributes discovered here shall help in revealing other physical properties of the waterfront within **chapter 7**.

Furthermore, the variables that were categorised within a participatory perspective revealed many responses that were considered as resulting from the individuals' interactions with places. These participatory responses have definitely been an outcome of an interviewing technique based upon deriving constructs from the subjects' past experiences with places. This does not only emphasise upon the quality of the technique used, but it is important to mention that experiential and/or participatory variables may not have been derived through the use of pictures. It can therefore be concluded that the interviewing technique was found advantageous for investigating experienced

responses, which can only be deducted from actual interactions within a given environment. In summary, it can be concluded that;

1. Many responses are a result of previous experiences and interactions with places, therefore relating to both Experiential and Participatory paradigms.
2. Similarly, many responses related to the 'Formal Aesthetics' paradigms.

In order to simplify the numerous results listed above within the tables, various analyses shall be conducted using computer software and are presented in the following chapter. Furthermore, it is important to highlight that the variables listed here shall further be used in the design of a questionnaire.

CHAPTER 7
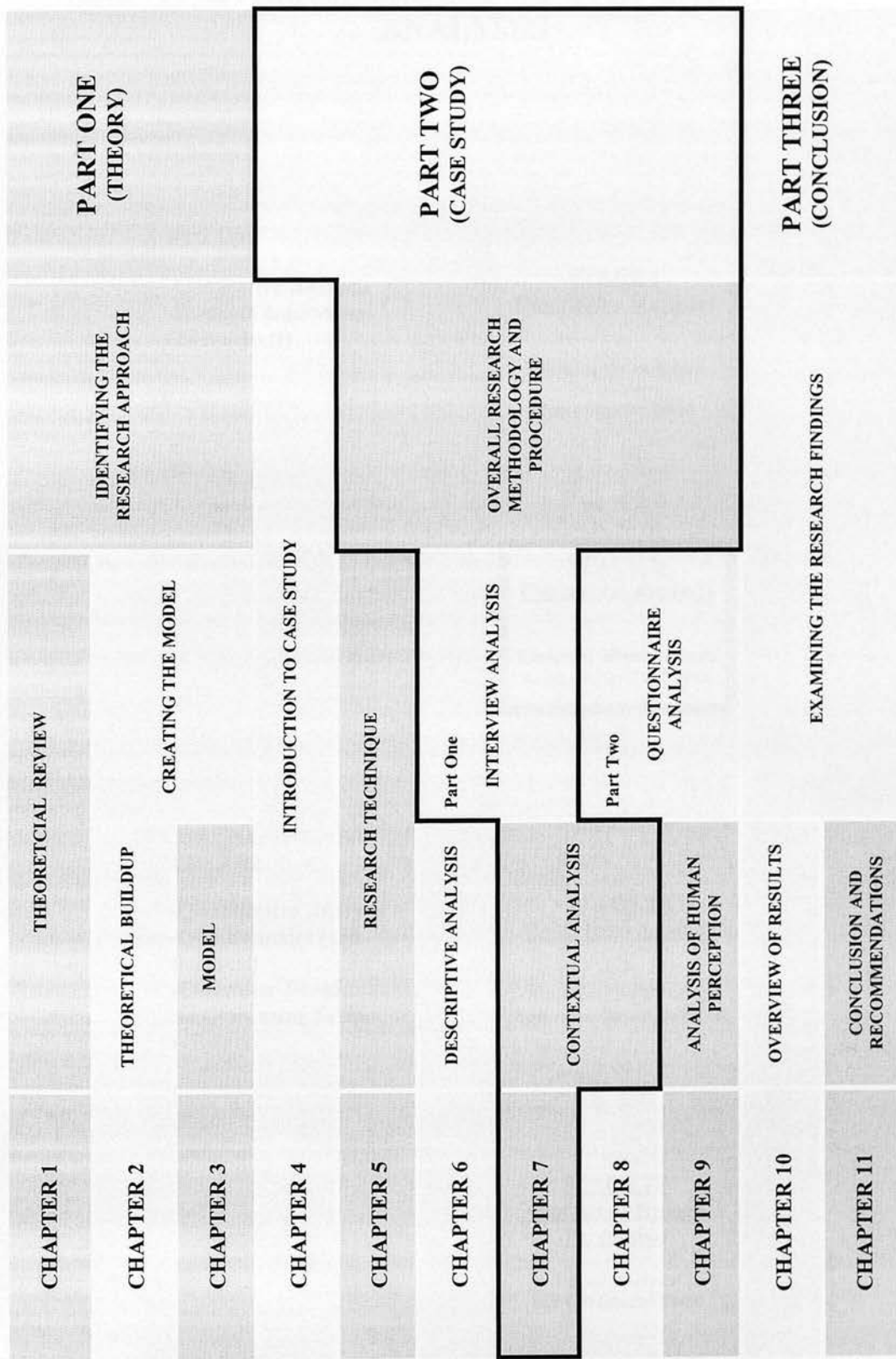
			PART ONE (THEORY)
CHAPTER 1	THEORETCIAL REVIEW		
CHAPTER 2	THEORETICAL BUILDUP		IDENTIFYING THE RESEARCH APPROACH
CHAPTER 3	MODEL	CREATING THE MODEL	
CHAPTER 4		INTRODUCTION TO CASE STUDY	PART TWO (CASE STUDY)
CHAPTER 5	RESEARCH TECHNIQUE		OVERALL RESEARCH METHODOLOGY AND PROCEDURE
CHAPTER 6	DESCRIPTIVE ANALYSIS	Part One — INTERVIEW ANALYSIS	
CHAPTER 7	CONTEXTUAL ANALYSIS		
CHAPTER 8		Part Two — QUESTIONNAIRE ANALYSIS	
CHAPTER 9	ANALYSIS OF HUMAN PERCEPTION		
CHAPTER 10	OVERVIEW OF RESULTS	EXAMINING THE RESEARCH FINDINGS	PART THREE (CONCLUSION)
CHAPTER 11	CONCLUSION AND RECOMMENDATIONS		

OVERALL PROGRESSION OF THE ANALYSES

Part One

-Qualitative Analysis
-In-depth Interviews
(24 Subjects)

STAGE I
Descriptive Statistics

Deducing the variables
(constructs)
Non-computer based

STAGE II
Contextual Analysis

Computer Based Analysis
using Flexigrid software

Part Two

-Quantitative Analysis
-Questionnaire (130
Subjects)
-Computer-Based
Analysis using SPSS
software.

STAGE III
Contextual Analysis

Cross-checking STAGE II
Spearman Correlation Test

STAGE IV
Analysis of Human Perception

Factor Analysis
and Chi-Square Tests

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QUALITATIVE ANALYSIS OF THE CONTEXT

7.0   Introduction

As the initial objective of the thesis is to demonstrate how people construe Cairo's waterfront determining how and which of the previously determined variables associate with places is necessary. The basic intention here is therefore to help understand the configuration of the context of Cairo and the waterfront. This thus follows the objectives of the model[1] that was set to determine the level of variation existing within the specified area. Though helpful results on place perception do appear within this chapter, this chapter is predominantly orientated towards examining the context in order to determine the physical aspects of place that configures the waterfront area in Cairo.

It is important to note that the *constructs* derived and listed within the previous chapter are here considered as *variables* and are listed within **table 7.1**. Here, the analysis is thought to be highly qualitative, as it is possible to analyse the previous variables and examine how they are associated with the subjects' liked and disliked places. Using the Repertory Grid Analysis, the general reasons for which Cairenes like or dislike places are examined. As earlier mentioned within **chapter 5**, three different types of places (ideal', 'typical' and 'worst'), were individually derived from each subject's own opinion. Identifying these places was important for the Flexigrid software to compute and identify the variables that were associated with these three types of places.

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[1] See **chapter 3**.

7.1   Computer Based Analysis using Flexigrid

Table 7.1 shows the constructs as they lie in opposition to each other in the form of 'construct' and 'opposite construct'. It is also worth adding here as a reminder that each construct is only integrally defined with its opposite pair. Those chosen constructs were considered as concepts used in order to describe the elements (chosen places[2]) on a 7-point scale. The digits were then downloaded into the Flexigrid software package for further computing. Three facilities have been used from this package: 1. Varimax Rotated Components Analysis; 2. Target Analysis based on the rotated results; and 3. Plot Analysis based on rotated results. These analyses are basically considered as visual representations that have been applied in order to clarify the factor structure.

The Flexigrid software was not utilised in order to derive correlations between the variables though it contained that option. However, it was found more valuable for conducting the correlation tables on a larger sample of subjects within the analysis of the questionnaire. Correlation tables shall therefore be applied in the following chapter.

It is found important to mention that the software had it's technical limitations. This is as the software did not allow for all the constructs generated to be downloaded into the repertory grid within the package. This limitation allowed for only 50 constructs (listed within **table 7.1**) in total to be incorporated within the software whereas there were over 470 different constructs derived from the total number of subjects.

To cope with this problem, the data from each individual was reduced using the table of Varimax Rotated Components, where all the constructs and their values were classified into different components for each individual. The total variance of each column (component) is identified from each individual. According to this technique, every component having a high percentage of the total variance is considered to be a relatively dominant component. Consequently, this determines the order and significance of each component. Thus the 50 chosen constructs were individually derived from each subject by choosing the most dominant components from the Varimax Rotated Components table. This therefore follows Kelly's (1955) assumption that the constructs with the

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[2] See **chapter 5**.

greatest discrimination (i.e. variance) are most useful to us. The idea was to find out the most important constructs from each individual and to then list them all together. The generated table from these significant constructs created a database illustrating the main ideas raised. This data is then related to the classification that has been presented in the previous chapter.

In summary, the results of each subject was individually downloaded, separately analysed and finally printed out. In order to get a general understanding of the overall pattern of results, the total data set was therefore combined into one set. This was implemented by reducing the data complexity of the total construct network to a smaller set of components or groups, and was implemented through the Varimax Rotated Components Test. This was implemented by choosing the most representative construct (scoring highest) of each component, individually from each subject (see **table 7.2**). The data reduction simplifies the overall picture of the data set and allows more general conclusions to be drawn from all of the subjects (see **table 7.3**).

POLE	<---->	CONTRAST
no traffic	<------>	traffic exists
narrow space	<------>	wide space
close to water	<------>	far from water
safe	<------>	not safe
existence of people	<------>	no people exist
Quiet	<------>	Noisy
no vegetation	<------>	vegetation exists
high social class	<------>	low social class
open space	<------>	closed space
built	<------>	natural
clean	<------>	dirty
no human scale	<------>	human scale
old style	<------>	new style
hotels+restaurants exist	<------>	no hotels+restaurants
low residential density	<------>	high residential density
no night light	<------>	night light exists
can see Nile	<------>	can't see Nile
narrow walkway	<------>	wide walkway
no shopping areas	<------>	shopping areas
crowded	<------>	not crowded
easy to reach	<------>	difficult to reach
feel relaxed	<------>	don't feel relaxed
place has no use	<------>	place has use
polluted	<------>	not polluted
not planned	<------>	well planned
not historic	<------>	historic place
calm	<------>	busy
can't see Nile fountain	<------>	can see Nile fountain
fast tempo of life	<------>	slow tempo of life
can't see boats	<------>	can see boats
calm place	<------>	lively place
not an attracting place	<------>	an attracting place
not a family place	<------>	family place
unorganised	<------>	organised
not recreational	<------>	recreational place
not maintained	<------>	well maintained
not a place to visit	<------>	a place to visit
bldgs close to Nile	<------>	bldgs far from Nile
high rise bldgs	<------>	low rise bldgs
not used	<------>	heavily used
bldg not harmony wth site	<------>	bldg harmony with site
narrow streets	<------>	wide streets
closed views	<------>	open views
place is far from Nile	<------>	close to the Nile
cheap place to visit	<------>	dear place to visit
Narrow river width	<------>	wide river width
tourist place	<------>	not a tourist place
Unsafe structures of blgs	<------>	Safe structures of blgs

Table 7.1: Constructs chosen for computing.

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POLE	/CONTRAST	VBL.	1	2	3	4	5	6	DIST.
no traffic	/traffic	1	0.240	-0.339	-0.295	0.051	0.130	-0.849	1.000
narrow space	/wide space	2	0.381	-0.057	0.801	0.397	-0.156	0.169	1.000
close to water	/far from water	3	0.023	0.203	0.946	-0.222	0.017	-0.116	1.000
safe	/not safe	4	-0.800	0.361	0.231	0.313	-0.264	0.098	1.000
see people	/no people	5	-0.379	0.250	0.320	0.285	-0.095	-0.775	1.000
Quiet	/Noisy	6	-0.762	0.467	0.062	-0.029	-0.299	-0.328	1.000
no vegetation	/vegetation	7	0.451	-0.108	0.032	0.132	-0.168	0.859	1.000
high social class	/low social class	8	-0.924	0.114	-0.174	0.024	-0.231	-0.223	1.000
open space	/closed space	9	-0.576	0.259	0.297	0.132	-0.381	-0.592	1.000
built	/natural	10	0.447	0.084	-0.111	0.482	-0.607	0.425	1.000
clean	/dirty	11	-0.447	-0.043	0.457	0.399	-0.148	-0.639	1.000
no human scale	/human scale	12	0.503	-0.406	0.057	0.289	0.347	0.613	1.000
old style	/new style	13	0.225	0.116	0.120	-0.950	0.127	0.045	1.000
cant see hotels+restrnts	/can see hotels+restnts	14	0.648	-0.528	-0.072	0.086	-0.101	0.528	1.000
low residential density	/high residential density	15	-0.175	0.656	0.193	-0.106	-0.367	-0.597	1.000
no night light	/nigh light exists	16	0.373	-0.649	-0.140	0.239	0.361	0.483	1.000
can see Nile	/can't see Nile	17	0.182	0.036	0.386	-0.852	0.116	0.279	1.000
narrow walkway	/wide walkway	18	0.845	-0.234	0.167	0.046	0.442	0.075	1.000
no shopping areas	/shopping areas	19	0.195	-0.944	0.213	-0.133	0.020	0.087	1.000
crowded	/not crowded	20	0.489	0.335	-0.647	0.275	-0.392	-0.038	1.000
easy to reach	/difficult to reach	21	-0.180	0.925	-0.128	0.299	-0.067	-0.037	1.000
feel relaxed	/don't feel relaxed	22	-0.853	0.179	-0.098	-0.001	-0.005	-0.480	1.000
place has no use	/place has use	23	0.087	-0.354	0.059	-0.289	0.874	-0.129	1.000
polluted	/not polluted	24	0.887	-0.343	0.127	-0.276	-0.047	0.020	1.000
badly planned	/well planned	25	0.452	0.006	-0.094	-0.034	0.817	0.343	1.000
not historic	/historic place	26	-0.144	0.102	-0.860	0.423	-0.081	0.211	1.000
calm	/busy	27	-0.778	0.378	0.287	0.298	-0.273	-0.078	1.000
can't see Nile fountain	/can see Nile fountain	28	0.919	0.129	0.068	-0.337	-0.134	0.056	1.000
fast tempo of life	/slow tempo of life	29	-0.131	-0.763	0.178	0.578	0.161	-0.092	1.000
cant see boats	/can see boats	30	0.878	-0.177	0.031	0.250	-0.365	-0.008	1.000
calm place	/lively place	31	-0.738	-0.174	-0.627	0.003	0.146	-0.101	1.000
not an attracting place	/an attracting place	32	0.907	0.215	0.341	-0.104	0.044	0.038	1.000
not a family place	/family place	33	0.262	-0.081	0.903	-0.327	0.019	0.030	1.000
unorganised	/organised	34	0.599	-0.627	-0.298	-0.089	0.356	0.157	1.000
not recreational	/recreational place	35	0.157	0.389	-0.493	0.737	-0.019	0.195	1.000
not maintained	/well maintained	36	0.907	-0.182	-0.253	0.003	0.234	0.161	1.000
not to visit	/place to visit	37	0.862	-0.235	0.041	-0.256	-0.082	0.357	1.000
bldgs close to Nile	/bldgs far from Nile	38	0.920	-0.017	-0.091	0.239	0.075	0.287	1.000
high rise bldgs	/low rise bldgs	39	-0.661	-0.636	0.250	-0.249	-0.065	-0.175	1.000
not used	/heavily used	40	-0.579	0.176	0.010	0.420	0.658	-0.159	1.000
bldg no harmony wth site	/bldg in hamony wth site	41	0.802	-0.136	0.441	0.098	0.159	0.330	1.000
narrow streets	/wide streets	42	0.229	-0.121	-0.115	0.038	0.954	0.087	1.000
closed views	/open views	43	0.510	-0.723	0.173	0.385	0.074	0.183	1.000
far from Nile	/close to Nile	44	0.158	0.311	-0.914	0.065	0.197	0.019	1.000
cheap place to visit	/dear plce to visit	45	0.654	0.305	-0.278	0.579	0.249	0.077	1.000
Narrow Nile width	/wide Nile width	46	0.218	0.506	-0.563	-0.087	-0.390	0.470	1.000
touristic place	/not touristic	47	-0.640	0.692	0.322	-0.032	-0.077	0.001	1.000
Unsafe structures of blgs	/Safe structures of blgs	48	0.131	-0.317	-0.597	-0.221	0.387	0.572	1.000
%VARIANCE			33.700	16.011	15.580	11.073	11.042	12.596	100.002

Table 7.2: Table of Varimax Rotated Components

Order	Variables	Score	General Categorisation	Paradigm Categorisation
1	Social Class	-0.924	Type of People	Socio-Cultural
2	Existence of Shopping areas	-0.944	Activity	Participatory
3	Location with respect to water	0.946	Place Location	
4	Old bldg. style/New bldg. Style	-0.950	Building Style	Formal
5	Width of streets	0.954	Scale	Aesthetics

Table 7.3: Table of Components and categorisations.

7.1.1 Analysis Based on Varimax Rotated Components

Table 7.2 presents the results that were based upon the Varimax Rotated Components Test, which groups the significant constructs from all the subjects. The % Variance number shown at the bottom of the list indicates the order of importance of the components. Six groups are listed here and represent all the data set. The highest scoring construct for each of the six components is underlined in **bold** and was chosen as the most representative of each component.

Table 7.3 simplifies the list of dominant components. It identifies the constructs, which are representative of the six components in order of dominance (see Order column). The table also relates these constructs to the general categories[3] in which they fall. It is evident here that the 'Social class' factor precedes the other factors in order. This highlights the significance of this factor within its component, meaning to say that this factor can be considered as representative of its component. Following this factor the constructs 'existence of shopping areas' and 'the vicinity to water' relate to both the 'Activity' and 'Place Location' groups and have been categorised according to the earlier categorisations, conducted within **chapter 6**, as 'Participatory' attributes. Furthermore, 'Building Style' and 'Scale' groups both relate to physical attributes and are therefore considered to exist within a Formal Aesthetics paradigm. Therefore the results were found to cover three main theoretical domains.

It is clear here that the variables in the table correlate with the two groups scoring the largest number of constructs, which are the 'Participatory Paradigm' and the 'Formal Aesthetics Paradigm' highlighted in the previous chapter[4]. This result indicates that the variables (constructs) listed in **table 7.3**, are representative of the components listed in **table 7.2**. It also helps in simplifying the generalisations that have been made within the previous chapter, thus focusing the research on more important variables, which affect the Cairenes' perceptions to places. Specifically speaking the table highlights issues relating to People, Activities, Place Location, Building Style, and Scale. At this stage, the listed factors, shall be considered as the main forces that drive the way Cairenes construe places and are to be further explored in a more quantitative manner.

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[3] See categories listed in **chapter 6**.
[4] See **chapter 6, table 6.20**.

7.1.2 Target Analysis Based on Rotated Results

Table 7.4 presents the 5 main components and relates the 'Ideal', 'Typical', and 'Worst' places to those components. For simplification the highest scoring factors derived from **Table 7.3** (Varimax Rotated Components Analysis) have been considered as the most representative of each component. Therefore they have been underlined and highlighted in **bold** in **table 7.4**. It also indicates the closeness of these places to either pole of the factors, and is represented by the lengths of each of the lines in three different forms (*****, +++++, and #####), which respectively represent the ideal, typical and worst.

It is clear here that the worst place is closely related to places which are inhabited by people of low social class, without shopping areas, far from water, having old building styles and narrow streets. Ideal places are in complete opposition to the worst places. Therefore it can be concluded that Cairenes prefer places that comprise shopping facilities, with wide streets, and that also contain new styles of buildings. Meanwhile, it is also a fact that these places are high social class areas.

Both worst and ideal places share the fact of being far from the water. After checking the data scores of the subjects, it was realised that the 'Ideal' and 'Worst' places were chosen to be outside of the waterfront zone and at times outside Egypt. Therefore, no particular conclusion about the 'Ideal' and 'Worst' places in relation to the waterfront can be derived.

```
TARGET ******************
ANALYSIS based on rotated results
Definition of ELEMENTS: TYPICAL * TYPICAL
                        IDEAL   + IDEAL
                        WORST   # WORST

                                Position of ELEMENTS
                    NEGATIVE                        POSITIVE
NEGATIVE POLE      1        2        3        4        5      POSITIVE POLE

COMPONENT 1                                                   COMPONENT 1

low social clas                                              high social class
bldgs close to Nile                                          bldgs far from Nile
can't see Nile fountain                                      can see Nile fountain
not an attracting place                                      an attracting place

COMPONENT 2                                                   COMPONENT 2

no shopping areas                                            shopping areas
difficult to reach                                           easy to reach
fast tempo of life                                           slow tempo of life
closed views                                                 open views

COMPONENT 3                                                   COMPONENT 3

close to water                                               far from water
close to Nile                                                far from Nile
not a family place                                           family place
historic place                                               not historic

COMPONENT 4                                                   COMPONENT 4

old style                                                    new style
can see Nile                                                 can't see Nile
recreational place                                           not recreational
dear plce to visit                                           cheap place to visit

COMPONENT 5                                                   COMPONENT 5

narrow streets                                               wide streets
place has no use                                             place has use
badly planned                                                well planned
not used                                                     heavily used

        0      20      40      60      80     100
              ! MARKS IMPORTANCE OF COMPONENT
```

Table 7.4: Target analysis based on rotated results.

7.1.3 Plot Analysis Based on Rotated Results

This analysis was helpful in illustrating the Cairenes' general preferences to places and compares them to the liked and disliked places at the Cairene waterfront. The following plots attempt to represent all the constructs together with the ideal, worst, liked and disliked places on a 3-dimensional spatial representation. Therefore the plot shown in **figure 7.1** includes the 'Ideal', 'Typical' and 'Worst' places derived from the subjects and which are presented on a 2-dimensional plane. Two disliked and two liked places at the water edge are also included. Therefore the 'Plot' analysis reflects the positions of two 'liked' and two 'disliked' places at the Nile waterfront, in relation with the 'Ideal', 'Typical' and 'Worst' places. It also attempts to identify where those places lie in relation to the constructs and to which side of the construct pole.

It should also be noted here that the 'Ideal', 'Worst, and 'Typical' are individually experienced places, but are not necessarily located in Cairo or Egypt. However, this was found helpful in identifying how the liked and disliked places at the waterfront relate to the 'Ideal' and 'Worst' places.

Figure 7.1 also shows the relationships between the concepts (constructs) which people use in order to identify with these places. The significance of these plots make it possible to see how the interviewees associate various their descriptions to actual places. It is also possible to examine how the interviewees correlate their preferred places with their constructs used to describe their surrounding environment.

Figure 7.2 highlights the existence of 6 groups consisting of 3 groups and their opposite groups (the groups opposing each other are a mere reflection of Kelly's bi-polar concepts). The figure also highlights to which of the groups the ideal, worst, liked and disliked places fall. The 6 groups highlighted in the figure are represented in **table 7.5** that has been derived from the illustration.

ANALYSIS based on rotated results

Axis 2 has been reflected
ELEMENT 1 IDEAL picked as an IDEAL

39 low rise bldgs
45 cheap place to visit
32 not an attracting place
31 lively place
28 can't see Nile fountain

29 slow tempo of life
46 Narrow Nile width
35 not recreational
20 crowded
44 far from Nile
3 close to water
13 old style
10 built
11 dirty
17 can see Nile
25 badly planned

19 shopping areas
21 easy to reach
43 open views
15 low residential density
16 high light exists
12 human scale
23 place has use
1 traffic
48 Safe structures of blgs
5 see people
42 wide streets
7 vegetation
26 not historic
33 family place
2 wide space

47 touristic place
34 organised
14 can see hotels+restnts
6 Quiet
27 calm
4 safe
24 not polluted
9 open space
37 place to visit
18 wide walkway
36 well maintained
22 feel relaxed
30 can see boats
40 not used
41 bldg in harmony wth site
8 high social class
38 bldgs far from Nile

38 bldgs close to Nile
8 low social clas
41 bldg no harmony wth site
40 heavily used
30 cant see boats
22 don't feel relaxed
36 not maintained
18 narrow walkway
37 not to visit
9 closed space
24 polluted
4 not safe
27 busy
6 Noisy
14 cant see hotels+restrnts
34 unorganised
47 not touristic

2 narrow space
33 not a family place
26 historic place
7 no vegetation
42 narrow streets
5 no people
48 Unsafe structures of blgs
1 no traffic
23 place has no use
12 no human scale
16 no night light
15 high residential density
43 closed views
21 difficult to reach
19 no shopping areas

25 well planned
17 can't see Nile
11 clean
10 natural
13 new style
3 far from water
44 close to Nile
20 not crowded
35 recreational place
46 wide Nile width
29 fast tempo of life

28 can see Nile fountain
31 calm place
32 an attracting place
45 dear plce to visit
39 high rise bldgs

Figure 7.1: Map of all the computed constructs.

ANALYSIS based on rotated results

Axis 2 has been reflected
ELEMENT 1 IDEAL picked as an IDEAL

39 low rise bldgs	29 slow tempo of life	19 shopping areas	47 touristic place
45 cheap place to visit	46 Narrow Nile width	21 easy to reach	34 organised
32 not an attracting place	35 not recreational	43 open views	14 can see hotels+restnts
31 lively place	20 crowded	15 low residential density	6 Quiet
28 can't see Nile fountain	44 far from Nile	16 high light exists	27 calm
	3 close to water	12 human scale	4 safe
	13 old style	23 place has use	24 not polluted
	10 built	1 traffic	9 open space
	11 dirty	48 Safe structures of blgs	37 place to visit
	17 can see Nile	5 see people	18 wide walkway
	25 badly planned	42 wide streets	36 well maintained
		7 vegetation	22 feel relaxed
		26 not historic	30 can see boats
		33 family place	40 not used
		2 wide space	41 bldg in harmony wth site
			8 high social class
			38 bldgs far from Nile
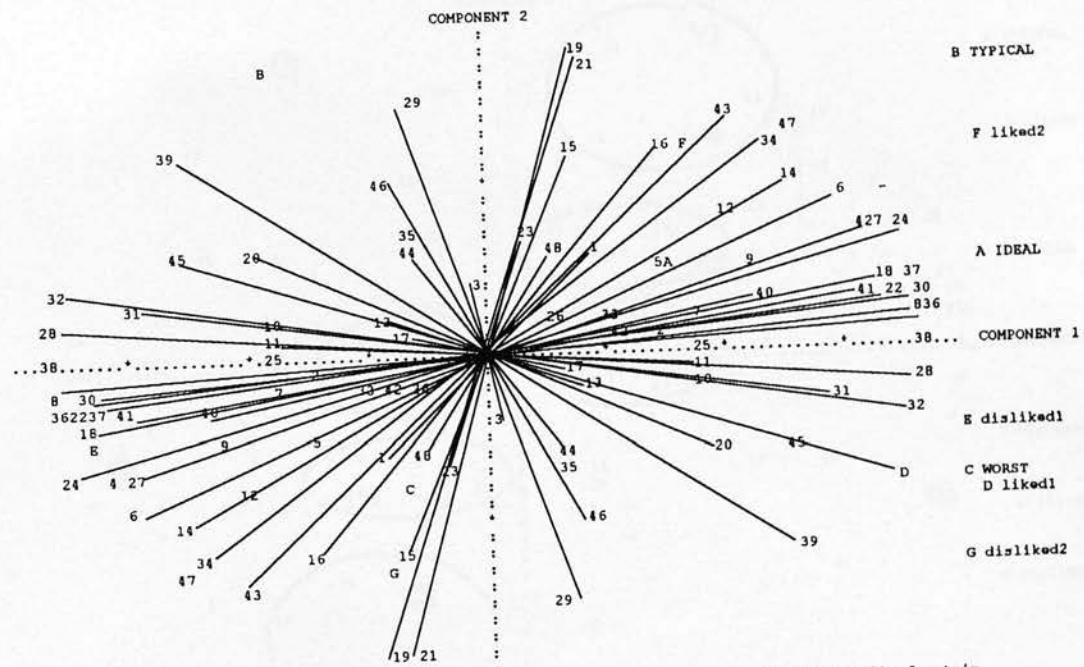
38 bldgs close to Nile	2 narrow space	25 well planned	28 can see Nile fountain
8 low social clas	33 not a family place	17 can't see Nile	31 calm place
41 bldg no harmony wth site	26 historic place	11 clean	32 an attracting place
40 heavily used	7 no vegetation	10 natural	45 dear plce to visit
30 cant see boats	42 narrow streets	13 new style	39 high rise bldgs
22 don't feel relaxed	5 no people	3 far from water	
36 not maintained	48 Unsafe structures of blgs	44 close to Nile	
18 narrow walkway	1 no traffic	20 not crowded	
37 not to visit	23 place has no use	35 recreational place	
9 closed space	12 no human scale	46 wide Nile width	
24 polluted	16 no night light	29 fast tempo of life	
4 not safe	15 high residential density		
27 busy	43 closed views		
6 Noisy	21 difficult to reach		
14 cant see hotels+restrnts	19 no shopping areas		
34 unorganised			
47 not touristic			

Figure 7.2: Six identified groups in relation to places.

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47 not touristic
34 unorganised
9 closed space
27 busy
45 cheap place to visit
36 not maintained
39 low rise bldgs
4 not safe
38 bldgs close to Nile
14 cant see hotels+restrnts
6 Noisy
40 heavily used

44 far from Nile
20 crowded
48 Unsafe structures of blgs
46 Narrow Nile width
35 not recreational
11 dirty
5 no people
1 no traffic
15 high residential density
29 slow tempo of life
16 no night light
42 narrow streets
10 built
25 badly planned

3 far from water
33 family place
26 not historic
17 can't see Nile
19 shopping areas
43 open views
21 easy to reach
13 new style
23 place has use
12 human scale
7 vegetation

31 calm place
41 bldg in hamony wth site
32 an attracting place
8 high social class
18 wide walkway
24 not polluted
22 feel relaxed
28 can see Nile fountain
37 place to visit
30 can see boats

COMPONENT 3

:3
II
A IDEAL
C WORST

A
C

COMPONENT 1
E disliked1
B TYPICAL
D liked1
F liked2
G disliked2

I
G

30 cant see boats
37 not to visit
28 can't see Nile fountain
22 don't feel relaxed
24 polluted
18 narrow walkway
8 low social clas
32 not an attracting place
41 bldg no harmony wth site
31 lively place

7 no vegetation
12 no human scale
23 place has no use
13 old style
21 difficult to reach
43 closed views
19 no shopping areas
17 can see Nile
2 narrow space
26 historic place
33 not a family place
3 close to water

25 well planned
10 natural
42 wide streets
16 high light exists
29 fast tempo of life
15 low residential density
1 traffic
5 see people
11 clean
35 recreational place
46 wide Nile width
48 Safe structures of blgs
20 not crowded
44 close to Nile

40 not used
6 Quiet
14 can see hotels+restnts
38 bldgs far from Nile
4 safe
39 high rise bldgs
36 well maintained
45 dear plce to visit
27 calm
9 open space
34 organised
47 touristic place

Figure 7.3: Ideal place (A) presented in the 3rd dimension.

ANALYSIS based on rotated results

Axis 2 has been reflected
ELEMENT 1   IDEAL picked as an IDEAL

39 low rise bldgs
45 cheap place to visit
32 not an attracting place
31 lively place
28 can't see Nile fountain

29 slow tempo of life
46 Narrow Nile width
35 not recreaticnal
20 crowded
44 far from Nile
 3 close to water
13 old style
10 built
11 dirty
17 can see Nile
25 badly planned

19 shopping areas
21 easy to reach
43 open views
15 low residential density
16 high light exists
12 human scale
23 place has use
 1 traffic
48 Safe structures of blgs
 5 see people
42 wide streets
 7 vegetation
26 not historic
33 family place
 2 wide space

47 touristic place
34 organised
14 can see hotels+restnts
 6 Quiet
27 calm
 4 safe
24 not polluted
 9 open space
37 place to visit
18 wide walkway
36 well maintained
22 feel relaxed
30 can see boats
40 not used
41 bldg in hamony wth site
 8 high social class
38 bldgs far from Nile


```
                              COMPONENT 2
                                  :
                                  :      19
                   B              :      21                              B TYPICAL
                                  :
                 29               :        43
                                  :              47
        39                        :    15    16 F    34                  F liked2
                                  :                       14
                       46         :                             6
                                  :                          427 24
                    35        44  :  23   48   1
        45   20      44           :             5A      9         18 37      A IDEAL
   32                             3:                            41 22 30
        31                        :                                   836
   28        10        13         :   26   33   7
             11        17         :       42  2
  ..38.............+........+.25....+...........+..25.+..........+.......38... COMPONENT 1
                   2              :      17        11
       8  30                      :      13        10                28
     362237 41        33 42 26    :                                31       32
        18           +o           :                                            E disliked1
     24  4 27                     :                       20     45
                   9    5         :                                     D        C WORST
                              1 48:   44                                         D liked1
           12         C       23  :   35
                                  :
          14                      :      46
             34      16      15   :                            39
                      G           :                                      G disliked2
                43                :
                                  :   29
                                  :
                                  :
                              19 21:
                                  :
```

38 bldgs close to Nile
 8 low social clas
41 bldg no harmony wth site
40 heavily used
30 cant see boats
22 don't feel relaxed
36 not maintained
18 narrow walkway
37 not to visit
 9 closed space
24 polluted
 4 not safe
27 busy
 6 Noisy
14 cant see hotels+restrnts
34 unorganised
47 not touristic

 2 narrow space
33 not a family place
26 historic place
 7 no vegetation
42 narrow streets
 5 no people
48 Unsafe structures of blgs
 1 no traffic
23 place has no use
12 no human scale
16 no night light
15 high residential density
43 closed views
21 difficult to reach
19 no shopping areas

25 well planned
17 can't see Nile
11 clean
10 natural
13 new style
 3 far from water
44 close to Nile
20 not crowded
35 recreational place
46 wide Nile width
29 fast tempo of life

28 can see Nile fountain
31 calm place
32 an attracting place
45 dear plce to visit
39 high rise bldgs

•••

Figure 7.4:Ilustrating how disliked place (E) can be improved.

7.2   General Preferences

Figure 7.2 shows that groups I and II identify with the contrasting environments of old and modernised places, where old places reflect a narrow street pattern compared to the more modernised parts of Cairo mainly existing along the central areas of the waterfront. Groups III and IV closely relate to the existence of people, traffic and the way the place is used.

Group V deals with more isolated places, that are usually remotely located from the centre, have blocked views and are not lit by night. Places as such exist at the northern and southern parts of the waterfront and may further represent residential areas located far from the waterfront. In contrast group VI identifies central areas, having more shopping areas, lower residential density, wider views and night-light. This type of area describes the Kasr el-Nil area at the Cairene waterfront, where the city centre is located.

The diagram indicates that the ideal (A) and worst (C) places lie in group number IV and III respectively. Those groups relate to emptiness, and are mostly concerned with the presence of people and the function of the place. As the ideal (A) place is located close to construct no.5, which relates to the presence of people, it therefore suggests that people present within places that include particular activities, are highly preferred. Similarly, the diagram also suggests that places without people, having no significant use were considered by the subjects to be the worst places.

The ideal (A) place though existing within group IV, also lies close to group II, which relates to the constructs, 'modern' and 'wide spaces'. This is in fact confirmed in the plot that shows the 3rd dimension (**fig. 7.3**) where place (A) is also located in area II. The worst (C) place also lies close to the 'non-central' group V. This indicates that places that are far from central areas of the city are highly disliked.

Figure 7.2 shows that, in total, groups I, III, V and II, IV, VI appear to lie in one quarter of the 2 dimensional plot and are also located close together. This would also indicate that a connection exists between each three groups and their reflected groups. For example, groups I, III and V may describe a certain type of place that is remote from the centre, isolated, without shopping facilities, containing no night lighting and with few

people visiting or present. Similarly the opposite three groups, II, IV and VI represent areas that are central, with shopping areas, lit by night, and were many people visit. It is important to indicate that groups II, IV and VI describe the Kasr el-Nil area, which is the major visiting point at central areas of the Cairene waterfront.

Table 7.5 attempts to list the findings generated from **figure's 7.2** and **7.3** therefore highlighting the liked and the disliked places. The table also lists the variables that were associated with these areas. The label of each place was identified by the researcher and is listed under the 'Group' column and represents three main issues that the constructs appear to describe. The groups represent: old and narrow places; new and wide places, which are respectively descriptive of old and historic parts of Cairo; and newly built areas. They also simultaneously represent remote and empty places without buildings and more lively and built areas that are usually centrally located within the city.

The right-hand side of the table seems to be pointing towards the description of the Kasr el-Nil area as it is considered as a central area along the Nile, with the presence of many people and containing more modern and wide areas compared to the historical/older narrow areas. The existence of people within this place underlies the centrality of the place as it lies close to city centre. This is in fact confirmed within **chapter 4**, which had earlier described the nature of this central area in relation with other remote areas located along the waterfront. Furthermore the right-hand side of the table includes the 'Liked' and 'Ideal' places and indicates that the Kasr el-Nil area is a preferred place along the waterfront.

This result would suggest that the perceptions of the subjects might have represented a judgmental situation that is based upon a 'Kasr el-Nil', non- 'Kasr el-Nil' evaluative situation (see **table 7.5**)[1]. That is to say that a bi-polar situation exists where the interviewees have either given descriptions associated to places belonging to the Kasr el-Nil area or collective descriptions of all the other areas along the waterfront. This suggests that there were no other specific places identified along the waterfront.

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[1] It is important to note that **table 7.5** was applied on a relatively small sample of subjects. Therefore the following chapter shall attempt to estimate a similar table through the use of correlation tables applied on a larger sample of subjects.

It has to be noted here that the six groups are only reflections of opposites, which may seem to result in this bi-polar situation. However, it is realised that the actual configuration of the waterfront setting (discussed earlier within **chapter 4**) does in fact illustrate that the Kasr el-Nil area, which contrasts with many other places along the waterfront. Furthermore, the other areas are in fact not as frequently visited and are represented as remote areas that lie to the north and south of the waterfront. This argument would suggest that the Kasr el-Nil area is much preferred. The illustrations above also indicate that the waterfront relates to either the Kasr el-Nil area or otherwise, which suggests the unavailability of other visiting places along the waterfront.

Group	Construct No.	Variables	Preference	Group	Construct No.	Variables	Preference
Groups are descriptive of areas remote from the centre				**Groups are descriptive of Kasr el-Nil area.**			
I. Old and narrow spaces	2	Narrow space.		II. Modern and wide spaces	2	Wide space.	Ideal
	9	Closed space.	Disliked		9	Open space.	(A)
	13	Old style of buildings.	(G)		13	New style of buildings.	
	26	Historic place.			26	Modern/not historic.	
	42	Narrow streets.			42	Wide streets.	
III. Empty	1	No traffic.	Worst	IV. Not empty	1	Traffic exists.	Ideal
	5	No people.	(C)		5	People exist.	(A)
	23	Place has no uses.			23	Place has uses.	
V. Far from the centre.	15	High residential density	Disliked	VI. Central	15	Low residential density	Liked
	16	No night-lighting.	(G)		16	Night-light exists.	(F)
	19	No shopping areas.			19	Shopping areas exist.	
	21	Difficult to reach.			21	Easy to reach.	
	43	Closed views.			43	Open Views.	

Table 7.5: Compiled groups and variables represent central and non-central areas along the waterfront.

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7.3   Preferences for the Waterfront areas

Liked places (D) and (F) and disliked places (E) and (G) are places, which lie at the Nile waterfront in Cairo. They have been highlighted in order to indicate their relationship with both the Ideal and Worst places that have previously been mentioned. This was implemented in order to account for further understanding how Cairenes evaluate the waterfront in Cairo in comparison to the Ideal and Worst places[2].

Figure 7.2 shows that the liked place (F) at the waterfront is located within group VI, which deals with places which, as earlier mentioned, are centrally located places and also represents the Kasr el-Nil area. The disliked place (G) at the waterfront is located within area V that is the opposing group to group VI. Why this place maybe disliked could be due to the fact that it is remote from the centre, without much night-light and exists in highly populated areas. **Figure 7.3** shows the 3rd dimension of the plot and shows that disliked places (G), within group I, are older in building character and less spacious. Since highly populated areas are considered to exist within the old parts of Cairo, which are more cramped, confirms the fact that disliked place (G) is largely associated with heavily populated and less spacious places. Those places are in fact remotely located from the central parts of the waterfront that are more modernised and spacious.

Figure 7.4 shows the constructs lying between places (F) and (D), which are also considered as places located along the Nile waterfront. It is therefore suggested, that the constructs lying within the irregular dotted shape including the liked places (F) and (D) are relatively significant as they are particularly descriptive of places located at the Nile waterfront. **Table 7.6** below is descriptive of the overall group of constructs that configure places located at the Nile waterfront.

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[2] See **Chapter 4** for pictures associated with the place descriptions presented here.

Constructs associated with the waterfront	
Construct No.	Variables
4	Safety
6	Sound pollution
8	Social class
14	The existence of hotels and restaurants.
18	The width of the walkway.
24	Pollution.
27	Busy/calm place.
31	Lively/dull
30	The existence of boats.
32	An attracting/non- attracting place
34	Organisation of place
36	Maintenance.
41	Harmony of buildings with site.
45	Visiting affordability.

Table 7.6: Constructs associated with the waterfront.

The value of Flexigrid is embodied within the plot diagrams, which contribute to both theoretical and practical implications within places. In theory, a place can significantly be changed by changes in the variables (constructs) associated with that place (i.e. from one end of a construct to the other end). An example of this is shown in **figure 7.4** where the disliked place (E) located at the waterfront, is closely associated with many constructs shown in the plot. Since place (E) is a disliked place, located at the negative end of the constructs, improvement of this place can take place by changes in the variables (constructs) associated with it. This is illustrated in **figure 7.4**, where the concepts seen within the ellipse currently on the negative side, would theoretically be modified and enhanced thus transposing into to the area where the dotted ellipse exists.

Table 7.7 below lists the variables that are descriptive of disliked places located at the waterfront;

Constructs associated with Disliked Places at the Waterfront

Construct No.	Variables
4	Not Safe
6	Noisy
8	Low social class
14	No hotels and restaurants
15	High residential density
16	No night light
18	Narrow walkway
19	No shopping areas
21	Difficult to reach
24	Polluted
27	Busy
28	Can't see Nile fountain
36	Not maintained
38	Buildings are close to the water-edge.

Table 7.7: Constructs associated with disliked places at the waterfront.

It is also clear that (F) and (D) are also liked and are associated with the variables listed in **table 7.8** below;

Constructs associated with Liked Places at the Waterfront

Construct No.	Variables
4	Safe.
5	The existence of people.
6	Quiet.
9	The open space
14	The existence of hotels and restaurants.
16	The existence of night-light.
27	Calm.
28	Seeing the Nile fountain
38	Buildings far from the Nile
43	The open views.
45	Expensive/costly visiting place.

Table 7.8: Constructs associated with liked places at the waterfront.

7.4   Conclusion

The main results discussed within this chapter are briefly listed below in order to help the reader follow the issues that have been raised. Though this chapter was basically designed to determine issues referring to the context it was also found useful to unveil important aspects that relate to the model, (see **chapter 3)**. The use of *Context* as a heading to the results is not solely confined to physical attributes of place, but includes the overall perceptions of the subjects in response to these places. Furthermore, cross-references to the paradigms earlier introduced, have also been drawn. Therefore the results from this chapter are represented in order to reflect the context, theoretical paradigms and model (see **fig. 7.5** below).

7.4.1   Context

Table's 7.2, 7.3, and **7.4,** have presented the main results. The results have further been represented within **figure's 7.2, 7.3** and **7.4** and illustrate the preferences of the interviewees and are presented below in order of significance. It is important to note that although many of the points listed below have earlier been mentioned within the previous chapter, some of the variables are here confirmed. The following represents factors affecting general judgements to places.

1. Judgements to places are largely conducted through their pre-conceptions of areas associated with the social class of the residents in a particular area.

2. The type of activity within a place may be of great significance and affects how the subjects evaluate places, and where they go. Therefore places where other people are usually present and containing activities to participate in, where more preferred.

3. The location of a place being individually 'experienced, describes whether or not a place is in reach. Places that are more central, easier to reach and which usually contain night-light were preferred in comparison to remote areas.

4. Other concepts such as the style of the place (modern or old style), affects place judgement. As previously discussed, the more modern areas are associated with a higher level of maintenance and upkeep. Furthermore, the preferred places were associated with the modern areas containing new buildings as opposed to old and neglected districts that often contain historic buildings.

5. The width of the streets and the scale of places also affect how the subjects construed places. In this case, wide streets and spaces were preferred in relation to narrow streets.

The results from **table 7.4** mainly describe preferences towards the Kasr el-Nil area, which occupies a central position along Cairo's waterfront. This area is located close to the older city centre of Cairo with its major transport system located close by. This waterfront area contains a large amount of restaurants and ship restaurants and is considered as a main recreational area along the waterfront. The preferred constructs existing in **table 7.8** also describe the Kasr el-Nil area. As for **table 7.7**, the constructs describe areas located to the north and south of the waterfront area. Those parts are less frequently visited and contain fewer activities as the Kasr el-Nil area.

Therefore it is also concluded that the Kasr el-Nil area has largely dominated the interviewees perception of place and represents one pole of a 'bi-polar' situation where the majority of constructs are either descriptive of this area or collectively of other places. This would suggest a lack of variety in places to visit and activities to participate in along Cairo's waterfront. The level of variation along the waterfront suggests the effect of variation on choice and perception[3]. This therefore concludes the contextual objective, which had been set out in order to determine the level of variation existing along the waterfront area. This shall be considered as a theme to be carried within the Adaptation and Transactional perspectives throughout the thesis. In brief, **table 7.5** illustrates the following;

1. The Kasr el-Nil area is a much-preferred area in comparison with the other areas located at the waterfront. A main reason for this is reasoned to be as a consequence of its central location.

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[3] This result concludes the objective cited in **chapter 3**.

2. That the water edges, as described by the subjects, relate to Kasr el-Nil or otherwise, suggesting the unavailability of other points of attraction along the waterfront. The lack of these alternatives along the waterfront is the main reason for descriptions being confined to only one area.

7.4.2 Theory

The findings unfold a pattern of results that reflect perceptions that deal with *Man*, *Environment* and the related *Interactions* between them. The findings represent the three main dimensions earlier reflected in the model, thus corresponding to the Transactional perspective, where Man-in-Environment is holistically emphasised. **Table 7.3** illustrates those three dimensions that mirrors the backdrop to the transactions that take place in the environment; the theory embodies the fact that people are in constant interaction within a specific context, thus determining behaviour and place perception. **Table 7.3** reflects perceptions that relate to a human-related dimension (Type of People), a contextual dimension (Buildings and Scale) and 'Interactional' dimension (Activity and Location). They further reflect the Formal Aesthetics approach model, the Socio-cultural approach and the Participatory approach (see **fig. 7.5**). This result may be assumed as a mere coincidence, but it is found plausible to highlight that a 'non-suggestive' and open-ended orientated method of interviewing and analysis had a considerable effect in the achieved results.

The above largely supports the Transactional perspective used in the model that suggests Man-in-Environment as a unit to be analysed. It would therefore be important to suggest at this point that these three aspects play a unified role in influencing perceptions and judgements. Though the Biological Aesthetics approach was not involved, it is fair to note that the research technique was not appropriate to examine biological attributes. But it may indicate that research, which attempts to discover biological influences on perception, should not generalise their findings to consider them as sole predictors of environmental judgement.

The diagram below lists the dominant variables deduced within this chapter and how they relate to the various paradigms of environmental judgement and how they further

relate to the model (see **fig. 7.5**). It has been realised here that the table below further shows that the produced results strongly relate to the model produced from the literature (see **chapter 3**, **fig. 3.1**), which represents attempts to deduce issues that relate to both the context and human perception. As the results show consistency with the model, thus the model can be considered as successful, as it deals with the three main issues of context, perception and the interplay between both entities. It comes as no surprise that this interplay is embodied in the interaction between man and environment.
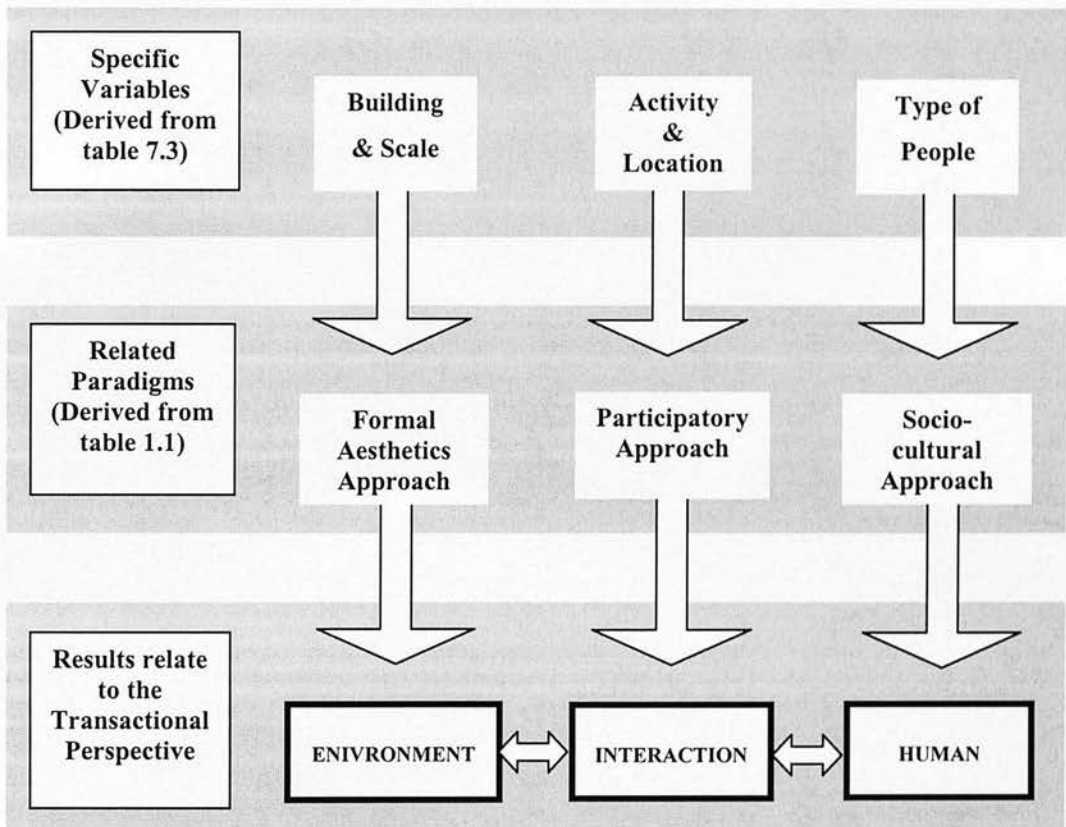
Figure 7.5: Illustration representing the consistency between the deduced variables, the related paradigms and the main domains of the Transactional perspective.

The following chapter quantitatively attempts to justify the results derived within this chapter particularly **table 7.5.** Therefore further analyses are conducted in order to cross-check the results introduced here with the results of the questionnaire.

CHAPTER 8

OVERALL PROGRESSION OF ... ANALYSIS

PART ONE
(THEORY)

PART TWO
(CASE STUDY)

PART THREE
(CONCLUSION)

CHAPTER 1 — THEORETCIAL REVIEW

CHAPTER 2 — THEORETICAL BUILDUP — IDENTIFYING THE RESEARCH APPROACH

CHAPTER 3 — MODEL — CREATING THE MODEL

CHAPTER 4 — INTRODUCTION TO CASE STUDY

CHAPTER 5 — RESEARCH TECHNIQUE — OVERALL RESEARCH METHODOLOGY AND PROCEDURE

CHAPTER 6 — DESCRIPTIVE ANALYSIS — Part One

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OVERALL PROGRESSION OF THE ANALYSES

Part One

-Qualitative Analysis
-In-depth Interviews
(24 Subjects)

<u>**STAGE I**</u>
<u>**Descriptive Statistics**</u>

**Deducing the variables
(constructs)
Non-computer based**

<u>**STAGE II**</u>
<u>**Contextual Analysis**</u>

**Computer Based Analysis
using Flexigrid software**

Part Two

-Quantitative Analysis
-Questionnaire (130
Subjects)
-Computer-Based
Analysis using SPSS
software.

<u>**STAGE III**</u>
<u>**Contextual Analysis**</u>

**Cross-checking STAGE II
Spearman Correlation
Test**

<u>**STAGE IV**</u>
<u>**Analysis of Human
Perception**</u>

**Factor Analysis
and Chi-Square Tests**

8.0   Introduction

The Flexigrid package was remarkably advantageous in its illustrative representations of the variables and the waterfront area. Though the software helped in analysing the qualitative data from the interviewees, however it was unable to include more than 50 constructs at a time. It was also impossible to compute the loadings of more than one interviewee within a particular construct. Therefore it was found necessary to further validate for the previous results previously listed within **table 7.5**, as these issues are of great significance. Accordingly, the first part of this chapter was implemented in order to cross check for consistency between the results of the qualitative analysis (i.e. the tables and diagrams presented in **chapter 7**) by the aid of a quantitative analysis using a questionnaire. This questionnaire also serves to derive further results that relate to human perception as presented within **chapter 9**. Thus, further questionnaires were distributed in order to account for quantity and to further elaborate on the variables associated with the described places existing within the plots (**figure's 7.1, 7.2, 7.3** and **7.4**). As a result variables are selected (see **table 7.1**) from the interviews and ware further computed using 'SPSS' software. The reason for using this software was to examine associations between the chosen variables that would cross-check for consistency between the interview analysis and the questionnaire analysis. This is executed by using the Spearman Correlation Test later described.

The questionnaire was designed (see **Appendix 2**) by selecting the variables that had been mentioned at least 4 times by the interviewees. Over 200 of the questionnaires were then distributed and a total of 130 questionnaires were returned. Due to the large amount of variables, the questionnaire contained 9 pages and was considered to be rather lengthy. The majority of the questions were designed on a 5-point scale from

don't agree at all to *totally agree.* Other questions were also found important to the analysis at that time, but were later ignored. This was due to both time considerations and the fact that some issues were later realised to have no particular significance to the main objectives of the research.

It was important that the subjects filling in the questionnaire lived in areas, which were within close reach to the waterfront area in Cairo or have previously had personal experiences with the waterfront. This was to make sure that the subjects were familiar with the waterfront and surrounding area, and was implemented by asking questions relating with the frequency by which the individual comes in contact with the River Nile.

It has previously been mentioned that the majority of factors highlighted related to Kasr el-Nil. This was hypothesised to be as a result of the central location of the place and for the unavailability of other main attraction points along the waterfront. Therefore the intention here is to explore relations between variables that would further define the Kasr el-Nil area and describe the context of the waterfront area within Cairo.

This was implemented through tables correlating the variables derived from the interviews. The reason for conducting these correlation tables was in order to further elaborate on the constructs associated with the liked and disliked places mentioned in **tables 7.5, 7.6, 7.7 and 7.8**. This was to further verify these variables (constructs) that would further help in describing the waterfront area in more detail and as a whole.

8.1 Quantitative Analysis using the Spearman Correlation Test

Figure 7.2 showed two dotted ellipses indicating the areas of the chosen constructs that are in some way related to each other. As each ellipse shows the gathering of certain constructs, therefore the correlation tables attempt to quantitatively justify their relationships by analysing the questionnaire.

Therefore the factors shall be correlated as an attempt to further describe places existing along the waterfront. Those variables have been derived from **table 7.5** and **fig. 7.2,** which shows the regions that the dotted ellipses occupy. The construct numbers are; 1, 2, 5, 9, 13, 15, 16, 19, 21, 23, 26, 42 and 43. The factors to be investigated are; Night lighting, Scale of place, Width of views, Traffic, Existence of people, Shopping areas, Activity (how the place is used), Location (central/not central), Access (easy/difficult to reach), Residential density, Traffic density, Old/new place.

Appendix 3 individually lists the above variables and their scores together with other variables that are correlated with them. These tables have been simplified and summarised and represented within **table 8.1**. In order to achieve this simplification, certain questions had to represent the chosen variables from the interviews. Therefore the questions dealing with 'width of walkways and streets', 'modern or old buildings' and 'places where nature can be seen on the opposite bank' were chosen to represent the scale, modern/old, and central/non central places respectively. It was found possible to deduce by observation that places where vegetation and nature is observed represented built places lying opposite to agricultural farm lands, particularly located to the southern and northern extensions of the waterfront. Therefore this question was chosen to indicate whether a place was centrally located or not. Similarly, 'width of walkways and streets' was found to represent the scale and size of the place. It should also be highlighted that construct no.23 (place has use/not) represented the question that mentioned issues relating to 'activities' in the questionnaire.

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	People	Scale	Central/non-central	Activity	Traffic density	Maintenance	Width of Views	Access	Shopping areas	Modern/Old	Night light	Residential density
People												
Scale												
Central/non-central												
Activity	●	●										
Traffic density				●								
Maintenance					●							
Width of Views		●	●	●	●	●						
Access				●			●					
Shopping areas				●								
Modern/Old		●		●					●			
Night light		●		●		●	●			●		
Residential density			●			●	●					

Table 8.1: How the variables are correlated in order to verify table 7.5

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Table 8.1 is a summary of the correlation tables deduced from **Appendix 3** and simplifies the understanding of how places are perceived consequently confirming the following;

1. A correlation exists between the presence of people in a place and whether or not there are things to do in a particular place. This suggests that people exist in areas where there are certain activities to participate in and things to do. This correlation confirms the middle band (horizontal) of **table 7.5**.

2. Scale is associated with the presence of activities, width of views, whether the place is modern or old, the existence of night-light and the social class of people present there. Since the more modern types of places along the Cairene waterfront are areas that are usually lit by night, it indicates that these areas are the areas where people can participate in certain activities. Areas along the waterfront do in fact have wider views and are therefore less obstructed, as they lie closer to the water-edges. The correlations mentioned here confirm the top band within **table 7.5**.

3. Centrality is correlated with the width of views and the residential density of the place. As the questionnaire evolved around the Cairene waterfront, therefore central areas were related to built places that were located within the area of Kasr el-Nil. This correlation also confirms the fact that highly populated residential areas are remotely located from the centre, which contains relatively narrower views. These correlations confirm the bottom band within **table 7.5**.

4. The ability to participate in certain activities correlates with the width of views, scale, traffic density, modernity of the place, access, the existence of shopping areas and people, and night lighting. This correlation would also confirm that places where activities exist to participate in, are related to modern places, with more traffic, and are close to shopping areas. This is also typical of the Kasr el-Nil area, which exists in the vicinity of the Cairo's city centre containing the common shopping areas. These correlations again confirm both the top and bottom bands of **table 7.5**.

5. The subjects have frequently mentioned issues relating to maintenance and the general upkeep of places. Here, maintenance correlates with the existence of night

lighting and the residential density of a place. Well-maintained areas along the waterfront are usually confined to Kasr el-Nil area where there is a clear negligence to the remotely located residential areas. Maintenance is not mentioned within **table 7.5**, and is therefore considered as an added correlation describing the waterfront.

6. Night lighting correlates and is related to places where there are activities to participate in, places where there are wide views, modern and which are also well maintained. This would suggest that other places may have less night lighting and are therefore considered less inviting. This was indeed confirmed by the subjects during the interviewing sessions. This correlation again confirms the bottom row of **table 7.5**.

All three horizontal bands listed within **table 7.5** are therefore confirmed by the correlations listed above. Many relations between the variables described above indicate that a high level of consistency was found between the interviews and the questionnaire. Meanhwhile, this consistency underlies the fact that the places that deal with centrality are descriptive of Kasr el-Nil area (which represents central areas) or remote areas.

In conclusion, the constructs derived from the interviews and the questionnaire were found to be descriptive of Kasr el-Nil area, which is centrally located along the waterfront area. The variables also describe other areas along the waterfront remote from this central area, and which largely lies in contrast to this area. The relationships between the constructs derived from the interviews have actually been verified from **table 8.1**, which shows a high level of consistency between both types of analyses. Therefore the variables listed within **table 8.2** are considered in the main table descriptive of central areas (Kasr el-Nil) and non-central areas.

Central (Kasr el-Nil area)	Areas far from the centre
Central	Far from centre
Modern	Old
High density of traffic	Lower density of traffic
Lots of people around	Not many people are around
Lower residential density	Higher residential density
Easier to reach	Difficult to reach
Shopping areas exist	No shopping areas close by.
Well maintained	Not maintained
Variety of activities in the area	No activities to participate in
Night lighting exists	No night lighting exists

Table 8.2: Different variables representing central and non-central areas.

8.2   Conclusion

As most factors were found to be related in one way or the other, the above discussion therefore concludes that **table 7.5** has been cross-checked on a quantitative basis. This was implemented by analysing the questionnaire and the results of the correlation tables represented within **table 8.1**. As a result of the argument above, **table 8.2** is considered as a refinement of **table 8.1** in order to confirm the results of the interview analysis. In conclusion **table 8.2** attempts to illustrate the differences in appearance, structure and activities located at Kasr el-Nil in comparison with the non-central areas.

8.2.1   Context

The above discussion confirms the initial speculation, which stated that people perceive places according to the configuration of the built environment. It was found that a large amount of constructs focused on describing either the Kasr el-Nil area or other areas that lie in contrast to it. This corroborates the fact that the Kasr el-Nil area is nearly entirely considered to be the sole attraction point along the urban waterfront. In comparison, other areas are less attractive, dull, without night lighting and thus less frequently visited. Those areas are not considered to be central and are relatively remote

from the Kasr el-Nil area. They may face agricultural lands at the northern and southern parts of the River Nile. Due to their unattractive nature and non-central locations it is concluded that they do not allow for public use. This results in reduced public interest for visiting these areas.

The table above shows the existing dichotomous situation of the Nile waterfront in Cairo. This is a result of the focused concern towards Kasr el-Nil area meanwhile, there has been major neglect to other waterfront areas, which are remotely situated from the centre. However, a large domain of recreational facilities, such as boating, sailing etc., exists within the Kasr el-Nil area. Thus the centrality of the place has helped in making it a pole of attraction in comparison to the other areas. Nevertheless, extensive municipal attention in maintaining the central areas has extended to reach areas further North and South from the centre in an attempt to create a more accessible waterfront.

8.2.2 Theory

As the interviews and questionnaire involved the whole of the waterfront location in Cairo, places other than Kasr el-Nil were described by drawing comparisons to this particular place. This was evident through the respondents' use of constructs that were typical of Kasr el-Nil and at the same time describe the collective configurations of other waterfront places other than this area. It is concluded at this point that descriptions referred to either Kasr el-Nil or collectively to all the other areas. This indicates the uniqueness of Kasr el-Nil in comparison to the other visiting points along the urban waterfront. This result further indicates the existence of a 'bi-polar' environment, with Kasr el-Nil area largely at the more positive end.

This situation again and again supports the conclusion deduced earlier, that a lack of variation along the waterfront in both its physical appearance and interactions (i.e. various types of involvement and activities within different locations) confines choice, behaviour and perception. As the main concern deals with the study of how Cairenes evaluate their environment, the objective here is to highlight that the majority of descriptors (constructs) evolved around the contextual configuration of Kasr el-Nil. This would imply that place evaluation of a population is contextually driven and based upon how the surrounding environment is configured. It would further suggest that contexts are actual determinants of how people describe and evaluate places. Specifically

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speaking, it is concluded here that this lack of variation has largely influenced the Cairenes' descriptive conceptualisations of places, which was confined to the physical nature of the context. This is an outcome of the lack of alternative places to visit along the waterfront. Both the lack of alternative visting points and the configuration of the context contribute to the amount of variables (constructs) perceived by the observer within a particular place.

Therefore it is reasonable to say that the configuration of the context has definitely influenced the way the subjects perceived the waterfront. This confirms the fact that human perception was affected by place configuration particularly during their descriptions of places. In this case the lack of variation directed the way the subjects perceived the waterfront, as their responses revealed that their descriptions were solely related to aspects of Kasr el-Nil area. That is to say that the lack of variation within the context actually confines the way people construe places.

This statement attempts to confirm the discussion earlier introduced within **chapter 2**[1], which stated that the greater the environmental variation the more learning takes place in order to adjust to these environments. Meanwhile, this infers that people adjust their perceptions and modes of behaviour in order to adapt to an environment. In our case, this would suggest that both the lack of visiting points and variation along the waterfront confined people's descriptions that were solely related to central areas, particularly Kasr el-Nil, affecting how they construe places.

This 'fixation' however suggests that the responses lacked more detailed descriptors (constructs) of the waterfront. That is to say, if the waterfront area contained a larger variety of places to visit these descriptors (constructs) would have accordingly increased. **Figure 8.1** is a hypothetical diagram that attempts to illustrate a limited number of perceived stimuli within the context of the waterfront. It is concluded here that this limitation consequently confine perceptions and evaluations of places into a limited set of constructs used by people in order to describe any place. However, this phenomenon again suggests that the environment influences people's perceptions, but in this case the introduced model helped in clarifying the fact that the Cairenes' perceptions are controlled by the lack of variation within the context of the waterfront.

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[1] See **section 2.4**, point no. 4.

This result basically concludes the contextual analysis of the waterfront as the model intended to discover the general level of variation existing along the waterfront and the variables associated with the place.
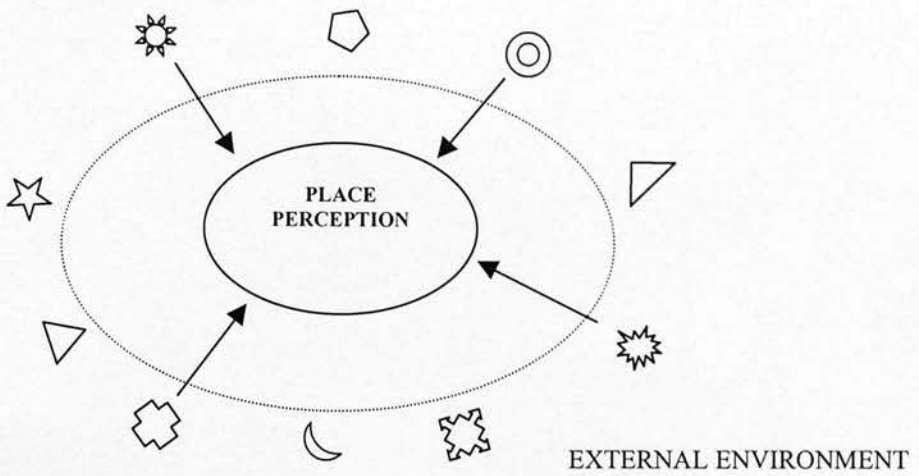
Figure 8.1: Hypothetical diagram showing the effect of environmental variation upon human perception.

Figure 8.1 shows that a scarcity of stimuli present within the current waterfront context has been uncovered. This highlights the lack in potential opportunity for people to interact within an environment that lacks in variation. Consequently, this has led to outdoor behaviour being suppressed, which inevitably limits the way people construe the environment. The environment is here considered as having an unlimited potential in providing information and stimuli for interactions to take place and perceptions to develop. However, the existing shortcomings of the waterfront context have limited a wide array of stimulus to exist, preventing a probable continuity between people and places. This continuity is formed by the large potential capability for people to adapt to environments, which is necessary for a coherent progression.

As shall later be seen this result is not the sole predictor of this lack of visiting points located within Cairo. The following analyses applied within **Stage IV** attempts to discover another aspect of Cairo that shall help us to reaffirm the lack of variation within the urban environment. However, **Stage IV** is initially intended to determine main aspects that dominate Cairene's perceptions.

CHAPTER 9

PART ONE (THEORY)

PART TWO (CASE STUDY)

PART THREE (CONCLUSION)

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CHAPTER 2 — THEORETICAL BUILDUP — IDENTIFYING THE RESEARCH APPROACH

CHAPTER 3 — MODEL — CREATING THE MODEL

CHAPTER 4 — INTRODUCTION TO CASE STUDY

CHAPTER 5 — RESEARCH TECHNIQUE — OVERALL RESEARCH METHODOLOGY AND PROCEDURE

CHAPTER 6 — DESCRIPTIVE ANALYSIS — Part One

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CHAPTER 8 — Part Two

CHAPTER 9 — ANALYSIS OF HUMAN PERCEPTION — QUESTIONNAIRE ANALYSIS

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CHAPTER 11 — CONCLUSION AND RECOMMENDATIONS

OVERALL PROGRESSION OF THE ANALYSES

Part One

-Qualitative Analysis
-In-depth Interviews
(24 Subjects)

STAGE I
Descriptive Statistics

**Deducing the variables
(constructs)
Non-computer based**

STAGE II
Contextual Analysis

**Computer Based Analysis
using Flexigrid software**

Part Two

-Quantitative Analysis
-Questionnaire (130
Subjects)
-Computer-Based
Analysis using SPSS
software.

STAGE III
Contextual Analysis

Cross-checking STAGE II
Spearman Correlation Test

STAGE IV
Analysis of Human Perception

**Factor Analysis
and Chi-square Tests**

QUANTITATIVE ANALYSIS OF HUMAN PERCEPTION

9.0   Introduction

The objective of this final stage of analyses is to explore the dominant concepts of Cairenes' perception that influence how Cairenes' construe the waterfront. Therefore this stage is directed to determine the significant issues that are related to human perception. The reason for this is to further explore issues not particularly related to the configuration of the waterfront setting, through investigating how subjects construe places, using the urban waterfront as a particular vehicle. Therefore it can be stated that this stage was undertaken in order to determine group and cultural responses that might specifically reflect Cairene culture.

The following analyses relate to the questionnaire and have been sequenced in an order driven by the initial findings and the researcher's speculations thus dictating the choice of the analyses applied within this section. Furthermore, these findings influenced the order of the various types of analyses applied. **Table 9.1** below presents this sequence in order to guide the reader through the various steps of analysis introduced here.

Step 1 applies Factor Analysis on all the sample of subjects (N=130); this uncovers two main results, which lead to the following stage of analysis. The results within **Step 1** lead the researcher towards investigating differences in responses between those people who go to the waterfront in order to meet people and those who do not.

Thus the analysis within **Step 2** is conducted through the use of Chi-square tests is explained in more detail. Differences in responses were found to exist between both groups of subjects. This result helped in realising that differences would exist between sports club members and non-sports club members.

Consequently, **Step 3** applies another Chi-square test on both groups and different responses are then revealed. For further elaborating upon the differences between both groups further Factor Analyses tests were further individually applied on both groups and are represented within **Step 4**. The differences in results between the two tests are then illustrated and further cross compared.

STEP 1

```
                    FACTOR ANALYSIS
                Applied upon all the subjects (N=130)
```

Main Results:
Social Class
Meeting Friends

STEP 2

```
                         CHI-SQUARE
        Investigating for differences between people who meet friends on
                     the Nile and people who don't
```

Result:

Differences revealed

+
Researcher Speculation

STEP 3

```
                         CHI-SQUARE
        Investigating for differences between sports club members and
                        non-sports club members
```

Result:

Differences revealed

STEP 4

```
                       FACTOR ANALYSIS
        Individually applied on Club-members and Non club-members in
        order to search for differences in factoring between both groups.
```

Highlighting the
Differences

Table 9.1: Diagram showing the sequence and order of the analysis

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9.1   Factor Analysis on All the Subjects

In the social sciences, Factor Analysis is usually applied to correlate between variables. Factor Analysis consists of a number of statistical techniques, which are aimed at simplifying complex sets of data. It starts by drawing a set of inter-correlations between a set of data; by examining all inter-correlations, it therefore forms new groupings of variables, which are relatively independent from each other. The new groups are called factors and represent the main source of variation in the initial data set. Identifying the new factors is a computational process. Interpreting the new factors can be complex, as a generic term is sought to cover the questions from the questionnaire within each new factor.

It was therefore found important to conduct Factor Analysis across 130 subjects using 75 variables chosen from the questionnaire. As described above, the intention was to simplify the set of variables and group them in order to form factors. Furthermore, it was intended to discover inter-corelations and patterns between questions, which would reflect the set of variables. As a result of conducting this analysis the following table was produced.

Variables	Factor loading			
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**
Providing places to meet friends.	0.80128			
Social class of people.		0.81336		
Building colour.			0.77421	
Old/New building Style.			0.69812	
Width of Views.				0.70822
Location of walkways with respect to water.				0.71545
Issues related	Social Activity	Social Class of people	Building Style	Quality of Place Location
Paradigm Categorisation	Participatory	Socio-Cultural	Formal Aesthetics	Participatory

Table 9.2: Overall factor loading.

The factors included in **table 9.2** were found helpful as they combine the factors that seem to give similar responses therefore, the Factor Analysis Test helps in simplifying

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the responses. The chosen variables from within the Factor Analysis Test should have an acceptable loading if it loads >0.7 onto a factor. The table shows that the 'Old/new building style' variable exists just below the 0.7 mark, but the variable in this case was included as it verifies that **factor 3** also relates with 'Building style' related issues. Thus this variable was found helpful to confirm that the 'Building colour' relates to building style and consequently indicates that they are both related to design issues.

Table's 7.3[1] and **table 9.2** are realised to be quite alike as they contain many similar and matching variables. Even the order of the listed variables, were realised to be quite similar. They both represent issues relating to activity, social class, building style and place location. Thus, **table 9.2** at this point, is considered as another cross check for the qualitative analysis technique applied on the interviewees. Both tables indicate that both techniques verify each other, this was evident as consistency is shown between both tables. **Table 9.3** below highlights the main results achieved from **table 7.3** and **table 9.2**.

Order	Table 7.3	Table 9.2
	Flexigrid software.	SPSS software
	Varimax Rotated Components.	Factor Analysis
	Sample: 24 subjects.	Sample: 130 subjects
1	Social Class	Social Activity
2	Shopping Activity	Social Class
3	Place Location	Building Style
4	Building Style	Place Location
5	Scale	

Tables 9.3: Similarities drawn between two different types of analyses, applied on two different samples of subjects, in order to simplify the data structure of the responses.

Table 9.3 illustrates the main results of both the Varimax Rotated Components Analysis[2] and the Factor Analysis Test. It is important to remind the reader that both analyses are considered as data simplification analyses, which attempt to reduce the overall data structure derived from the respondents. The table illustrates that both techniques considerably achieve similar results. The table above shows that the

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[1] See **chapter 7**.

[2] See **chapter 7**, **table 7.2** and **table 7.3**.

variables, listed by both analyses, are listed in a relatively similar order.

The table indicates that the Flexigrid Analysis produced a shopping related activity as opposed to a social activity produced by the Factor Analysis. As earlier mentioned, the central area of the waterfront is centrally located and contains the main shopping high streets. 'Social activity' within the Factor analysis results is directly related to the waterfront area and shall be considered as the main activity relating to the waterfront.

Furthermore, both techniques highlight issues that relate to both the location of places with respect to the waterfront and the style of buildings within these areas. Therefore both issues specifically reflect consistency between both techniques applied. It is important to underline that **table 9.3** is solely included here for the purpose of examining the similarities between both methods used and has no specific input into this chapter. Therefore the variables listed within **table 9.2** are the variables that shall be considered within this research since they were applied on a larger sample of subjects.

Table 9.2 also illustrates a four-factor structure together with their factor loading, which in turn identify the variables that may represent each factor. They are listed in order of importance in a descending manner from Factor 1 to Factor 4. The four-factor structure, for the 75 variables chosen from within the questionnaire indicates that the subjects are responding to the questions in four different ways. The following shall briefly attempt to explore each factor.

Factor 1 highlights the need to locate places for meeting friends and is at a higher level of importance within the factor structure. It indicates the need for locating more places along the Nile waterfront along which people can socialise. This most certainly is an 'Activity' related dimension that is particularly related with socialising. As earlier illustrated in **chapter 6** this factor corresponds to the 'Participatory approach', which describes judgements based upon the type of involvement in a place and how the place is used[3].

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[3] Activities were located within the 'Type of Participation' group that have been related to the Participatory approach. (see **table 6.20**).

Factor 2 represents an often-neglected issue, which indicates the existence of social class differentiation between people located within an area that may in turn influence people's perceptions of place quality. It indicates that people responded according to the social class status of those who visit a particular place. Though, the literature review has not emphasised on a paradigm that is directly involved with this issue, however cognitive paradigms universally describe various means by which people attempt to categorise their surrounding environment on a social status basis. In this case, the responses appear to have emphasised a social class basis for discriminating between places. This response was earlier categorised within **table 7.3**[4] as a Socio-cultural response and is therefore labelled as such within the bottom part of **table 9.2**.

Factor 3 represents the question that mentions the colour of buildings and is one of the four factors that highlights a more visually perceived rather than an experienced response. As earlier mentioned, the 'old/new building style' variable was included as the factor loads just below the 0.7 mark and as it was previously listed within **table 7.3**[5]. It was included as it helped determining the Factor label. Furthermore, this factor is considered to be a 'Formal Aesthetics' related issue as it deals with the aesthetic appreciation of building quality.

Factor 4 represents the 'width of views' and the 'walkways being located close to the Nile water'. This factor may be a result of the lack of wide views within the Cairene urban environment and may also reflect the limited amount of public areas containing unobstructed views. **Factor 4** also establishes that the width of views along the waterfront is strongly related to where the walkways are situated along the water edges. Thus, it describes the location of the walkways, here walkways located closer to the Nile have wider and better views to the waterfront. It may also indicate the existence of a limited amount of places from which it is possible to access close to the Nile water, where views are considered to be wider. The earlier chapters highlighted that descriptions based upon place location were related to a more 'experienced' response resulting from interacting within a place and are therefore ascribed to the Participatory Paradigm, indicated at the bottom part of **table 9.2**.

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[4] See **chapter 7**.

[5] Ibid.

Table 9.2 shows that **factor 1** is represented by 'meeting friends' and is consequently considered as an important issue in relation to the other factors. This illustrates that social activity is considered to be an important aspect of Cairene recreational behaviour and their perception of place. The previous statements infer that Carienes' perception of the waterfront maybe guided by whether or not they use the waterfront for socialising. This directed the research sequence for further conducting an analysis that would test for differences existing between people who visit the waterfront for socialising and people who do not visit the waterfront for this particular reason.

For the purpose of statistical inference, and in order to decide between two competing explanations on the differences that may occur between people who visit the waterfront for socialising and those who do not. It is therefore important to introduce the Null hypothesis[6] and the Alternate/Experimental hypothesis[7] as the terminology for statistical testing.

Therefore, our Null hypothesis is that there are no fundamental differences in responses between people who socialise at the waterfront and people who do not. The Alternate hypothesis is that differences in responses do in fact exist between these two sets of people. The alternate hypothesis, therefore, corresponds to the experimenter's prediction. The probability (p) that either hypothesis is correct should therefore be determined by selecting an appropriate test. In order to calculate this probability (p), the Chi-square test was chosen and is described below.

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[6] The Null hypothesis indicates that the differences arise are purely a consequence of chance fluctuations in the two groups of scores (Miller, S. 1984). That is to say that the results are purely coincidental.

[7] The Alternate/Experimental hypothesis shall indicate that differences are caused, at least in part, by the independent variable (Miller, S. 1984).

9.2 Chi-square Test based upon Social Activity

As the Chi-square test is a non-parametric test and is an appropriate test for discovering differences between two groups. It is here found reasonable to conduct Chi-squares in order to test for differing responses between people who go to the Nile to visit friends and people who don't go to the Nile to visit friends. This test resulted in discovering differences in responses with respect to the questions listed below within **table 9.4**.

Chi-square Test Comparison between subjects who visit the Nile to meet friends and the subjects who don't visit the Nile to meet friends.	Significance
9.2.1. I usually visit the Nile Corniche for viewing the Nile boats.	$\chi^2 = 20.229$ (1), $p < 0.00002$
9.2.2. The best views to the Nile river are from the boats.	$\chi^2 = 15.308$ (1), $p < 0.0001$
9.2.3. The best views to the Nile river are from the adjacent streets	$\chi^2 = 9.574$ (1), $p < 0.002$
9.2.4. It is important to provide visiting places along the Nile river for meeting friends.	$\chi^2 = 16.629$ (1), $p < 0.00006$
9.2.5. The affordability of the chosen visiting place.	$\chi^2 = 7.582$ (1), $p < 0.006$

Table 9.4: Chi-square test based on social activity.

Table 9.4 highlights the result of the Chi-square conducted between people who meet friends at the waterfront and people who do not use the waterfront as a meeting place. In the case of **results 9.2.1-9.2.5**, the Null hypothesis was rejected. Therefore the alternate hypotheses are accepted and show that differences do in fact exist between both groups and are a result of the variables listed above. The individual hypotheses are thus elaborated below.

Result **9.2.1** shows that there are differences in responses between both groups in relation to their intentions of visiting the waterfront. The difference here relates to whether or not they visit the waterfront for the purpose of viewing boats sailing along the River Nile.

Result **9.4.2** also highlights the existence of differences on whether the best views are from the boats or not. This, therefore, reflects differences in opinion between both groups in terms of the best viewing locations along the River Nile.

Result **9.2.3** indicates the difference in responses here between both groups, specifically relate to whether or not the best views are from the adjacent streets. This result may suggest that infrequent visitors to the waterfront may indirectly view the Nile while passing along the Corniche within cars, and are not in such direct contact with the waterfront in comparison to the people who frequently visit the Nile. This also implies that the frequent visitors to the Nile are more familiar with a variety of places located along the water-edges, which may have resulted in these differing responses.

Furthermore, result **9.2.4** indicates the difference in needs between both groups, particularly in terms of their need in being provided with meeting places. It is suggested here that people, who are in frequent use of the waterfront, become in greater need for places to meet. Finally, result **9.2.5** shows that there are differences in opinion on whether affordable areas should be or should not be located.

Chi-square tests concluded that differences existed in responses between people who meet friends at the Nile and people who do not. This may suggest that a large number of the subjects get involved in out door recreational and social activities within public areas at the waterfront. The existence in differences between both groups would suggest that people, who do not use the waterfront for participating in outdoor socialising, might have an alternative place for socialising. This shall further be explored below by conducting further analyses.

It has earlier been mentioned that the Factor Analysis Test attempts to simplify the data structure, this would indicate that the subjects were responding in respect to the listed factors. That is to say, that 'social activity' and 'social class' can be taken as dominant aspects that drive the subjects' responses (see **table 9.2**). This supposition comes to light as a large domain of the Cairene population is involved in public social activities within private sports clubs. It is common knowledge that a large number of Cairenes regularly visit sports clubs for socialising and/or recreational and sports activities. These clubs vary in membership fees and are affordable to various sectors of the public, some are practically free but are relatively smaller in size, with less open space and contain

fewer sports facilities. The larger and more expensive sports clubs are more centrally located whereas the smaller, more public and cheaper clubs are more located within highly populated residential areas. It is therefore speculated at this point that the existence of social and recreational barriers across the Cairene society is responsible for a behavioural distinction in terms of who visits the waterfront. These splits are reflected within Cairenes' activity patterns and it is speculated here that social and recreational behaviour by certain groups is largely confined to their sports/social clubs. At this point it is necessary to further investigate the issues relating to the Cairene society in terms of their social and behavioural patterns. Consequently, it was found necessary to search for differences between sports club members and non-sports club members in terms of their behavioural and social patterns, particularly within public space and alternatively the way they perceive these places.

The statistical inferences of our Null hypothesis in this case is that there are no fundamental differences in responses between people who affiliate to sports clubs and non-members of clubs. The Alternate hypothesis is that such differences in responses would, which corresponds to the experimenter's prediction. Once more, the probability (p) that either hypothesis is correct shall therefore be determined by conducting Chi-square tests and are illustrated below.

9.3   Chi-square Test based upon Club Membership

The use of Chi-squares was previously found to be advantageous and was consequently further applied in order to test for differences between people who usually go to social/sports clubs (club members) and people who do not (non-club members). The target was to search for aspects affecting the choice of the place to visit and the appreciation of place quality within certain locations for viewing the River Nile. The following results produced are listed below;

Chi-square Test	Significance
Comparison between Club members and Non-club members	
9.3.1 The best views to the Nile are from the hotels.	$\chi^2 = 4.335$ (1), $p<0.04$
9.3.2 The best views are from the Nile boats.	$\chi^2 = 5.58$ (1), $p<0.02$
9.3.3 The affordability of the visiting place.	$\chi^2 = 4.682$ (1), $p<0.04$

Table 9.5: Chi-square results based on club membership.

In the case of results **9.3.1-9.3.3**, the Null hypothesis is rejected. Therefore the alternate hypotheses are accepted which shows that differences did exist between both groups and are caused by the variables listed above. **Table 9.5** indicates relative consistency with **table 9.4**, since results, **9.2.2** and **9.2.5** are simultaneously consistent with results **9.3.2** and **9.3.3**. The individual hypotheses are elaborated below in more detail.

Result **9.3.1** shows that there are significant differences in responses to whether or not the hotels are the best viewing points to the Nile. It suggests that club members considered that the best views were from the hotels adjacent to the River Nile more than the non-club members did. It also shows that club members have different patterns of activities than do non-club members, as they use different places for visiting the Nile Corniche. Furthermore, result **9.3.2** also shows that the views from the Nile boats are considered to be better by one group as opposed to the other. This may be due to the fact that hotels and some boats along the Nile (floating restaurants), being 5-star places, are therefore inaccessible for non-members of clubs due to these places, being more expensive to visit. Considering that there are varying types of boats along the Nile

whose menus range from reasonable prices to the more expensive rates of the boat restaurants, it is rather difficult to conclude that one group may use boats and the other may not.

Result **9.3.3** highlights that the ability to visit areas for free or for a minimal cost is important. This result suggests that there is a level of significance in responses between club members and non-club members concerning the importance that the visiting area is cheap/free. It indicates that people who are non-club members are in a higher demand for public, cheap/free areas to visit than club members are. This may reflect the scarce existence of public space for public use and further supports the earlier findings within **chapter 7** that suggested the absence of a variety of different areas along the waterfront. This may also indicate that social and recreational involvement of certain groups within Cairo is governed by the existence of many privatised spaces in the form of clubs and restaurants. These areas exclusively serve as social meeting places for the club members.

The above results collectively explain that people who go to clubs are not in actual need for public walkways as much as non-club members whose needs are aggravated by the unavailability of places to visit. It may also explain that the significant difference in choosing the Nile boats is because they offer better viewing points along the waterfront. This suggests that in general club members less frequently visit the Corniche than their counterparts.

It is therefore concluded that club members do not have a greater need to visit that area for social activities, and a large part of that activity is conducted within their clubs. Result **9.3.3** included within **table 9.5** underlines the greater demand for public free areas on behalf of non-club members, in comparison to club members. This is consistent with the previous results and adds to the significant differences existing between both groups in their demand for public areas.

As previously mentioned, this result indicates that a segregated and isolated nature within the Cairene society exists in terms of their social and recreational behavioural patterns. It also influences how they evaluate places along the waterfront. It further adds on to increase the existing lack of variety of public areas to visit. This fact was earlier

concluded[8] suggested the existence of a dichotomous situation between Kasr el-Nil area and other areas existing along the waterfront. The difference in responses between the two groups confirms the fact that "social class" was an important factor in the Factor Analysis Test earlier conducted. The results also highlight the existence of a correlation existing between social class discrimination between places and the importance of private social and sports clubs, which accordingly has a great effect upon the lifestyle and behavioural patterns of Cairenes.

The results above illustrate that people who usually use the Nile Corniche for socialising are the same group who are in demand for more affordable places to visit. This confirms that the users of the Nile Corniche may not afford to become members of social/sports clubs. It is therefore concluded that a strong relation exists between club membership and the use of the waterfront as a meeting place.

It has earlier been deduced that the Nile waterfront provides Cairenes in general with an opportunity to escape high-density residential areas and crowds. These areas were described as having limited views and further contain a lack of open spaces in comparison to the heavily built environment. Furthermore, they contrast with the relatively wider, less populated places along the Corniche. The results above seem to identify the type of people who regularly use the waterfront and may belong to relatively lower classes who cannot afford the fees of the sports clubs that have a monopoly of wide and open spaces.

9.3.1 Results

In summary both **Tables 9.4** and **9.5** highlight three major issues that may suggest a basis for a design framework that may be implemented along the Nile Corniche;

1. Sports/social clubs configure a dominant part of the social and behavioural lifestyle to their members (i.e. where they go and whom they meet).

2. Non-club members use the waterfront and other public areas as out-door meeting places for participating in social activities. This may be a consequence in attempting to escape high-density residential areas for more convenient outdoor spaces, but

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[8] See **chapter 7** and **chapter 8**.

unfortunately, may at times cause overcrowding along the relatively small spaces of the waterfront.

3. Differences in responses between club members and non-club members indicate differences in evaluations of different viewing points. For club members, hotels[9] were found to be the best place for viewing the Nile though being dearer places to visit. As for non-club members, the best places to view the Nile were found to result from boats, as they are more affordable. Thus social lifestyle in Cairo can highly be related to the different locations of visiting points along the waterfront.

4. Due to the existence of private sports clubs segregation in Cairo is further intensified. These clubs control the behaviour of Cairenes and their out-door social behaviour, consequently reducing the amount and variety of public places that people can visit.

Two issues are raised above and relate to the lack of opportunity of a group of people to visit certain areas along the waterfront, and the preference of another group in visiting particular locations along the waterfront. This result further invites the researcher to conduct a final investigation in order to discover specific differences between both club members and non-club members. Consequently, **Step 4** shall separately apply Factor Analysis Tests on each group.

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[9] Hotels situated along the Nile, contain many restaurants and cafeterias positioned in order to gain best views to the river.

9.4   Factor Analysis Test applied on Club members and Non-club members)

In order to find differences in factoring between club members and non-club members it was found necessary to further utilise the Factor Analysis test and individually apply it on both groups. The list of results and their sequence would help predict specific differences between both groups. This was executed by splitting the data set into two groups, club members and non-members.

The Factor Analysis test outputs illustrate the factor structure, for club members and non-club members which shows an eight-factor structure for each group (see **tables 9.6** and **9.7**). **Table 9.8** compares the list of factors from either group in order to highlight certain differences and similarities between both groups. Both similar and different factors are listed, where the different factors are listed in a rather different sequence. This sequence indicates that evident differences exist between both groups and further indicate that both groups are responding to the questions in different ways. The discussion below shall individually attempt to explain the factors listed in order to highlight the differences and similarities existing between both groups. It is found important to highlight here, that the labels of the groups included within the three tables introduced here are of no major significance. Yet, it was found helpful in describing the similarities and differences existing between both groups of subjects, particularly within **table 9.8**.

The Factor Analysis Test was individually applied on all the subjects that frequented to sports clubs (mainly, club members, $N = 62$) and on the subjects who did not regularly visit sports clubs (mainly, non-club members $N = 44$). **Table 9.6** and **9.7** list the factors resulting from the test and has therefore grouped certain variables together. The factors were then interpreted by the aid of this grouping and then individually labelled within the bottom part of each table. The individual issues derived and listed at the bottom of **table 9.6** and **table 9.7** are therefore explained as follows.

Club members

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
				Factors				
Building colour.	0.85978							
Building heights.	0.71936							
Existence of air breeze.		0.72462						
Views from Nile boats.		0.82245						
Social class.			0.78726					
People's behaviour.			0.88315					
Providing walkways and seating areas.				0.77075				
Providing public areas at the waterfront.				0.75039				
Reach close to the Nile water.					0.83054			
Contact the Nile on the way to work.						0.79915		
Contact the Nile on the way home.						0.81618		
Visit the Nile for having walks.							0.84399	
Like walking along the Nile Corniche.							0.71794	
Locating walkways close to the Nile water.								0.84008
	Building	Sensory	Type of People	Place Needs	Close Access	Place of Contact	Activity	Place Location

Table 9.6: Factor Analysis conducted on club members.

Non-club members

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
				Factors				
Locating places to meet friends	0.83834							
Visit to view the running water		0.84636						
Visit to enjoy the air breeze		0.90673						
Building colour			0.86695					
Building condition			0.75563					
Distances between buildings			0.75587					
The reduction of traffic				0.83096				
Providing public places at the waterfront				0.83665				
Wide views at the water edges				0.79535				
Existence of parking areas					-0.71525			
Visit the Nile Corniche						0.78577		
Views from the Nile boats						0.72610		
Safety							0.73652	
Social class							0.84440	
Building organisation								0.87346
	Social Activity	Sensory	Building	Place Needs	Parking Space	Place of Contact	Type of People	Building Order

Table 9.7: Factor Analysis conducted on non-club members.

9.4.1 Activity

Factor 1 (social activity) in **table 9.7** elaborates upon the importance of this dimension to non-club members in comparison to club members, as it is situated at the top of the factor structure. **Factor 1** specifically stresses 'locating places to meet friends', which may indicate that their main objective of being at the waterfront is to socialise. Therefore this factor illustrates a higher need for non-club members to socialise in relation to the club members.

Factor 7 in **table 9.6** relates to taking walks along the waterfront and is therefore labelled as 'Activity'. This factor, which is different from the 'activity' related dimension as it is placed near the end of the list within **factor 7** of the club member group. Furthermore, this factor does not relate to socialising but relates to potentially perceived 'walks' as an activity that the club member would like to get involved in. As a factor directly relating to socialising did not exist, it implies that the social behaviour of club members is chiefly conducted within their sports clubs.

9.4.2 Sensory

This factor is listed as **factor 2** in both **tables 9.6** and **9.7**. **Factor 2** in **table 9.6** consists of two variables, 'air breeze' and 'views from the Nile boats'. Similarly, **factor 2** in **table 9.7** consists of 'air breeze' and 'viewing the running water'. The two variables are labelled as 'Sensory'. This may indicate that this factor relatively deals with sensory issues relating to views and air breeze, which describe the sensory quality of places along the waterfront. As both groups include **factor 2**, in relatively the same ranking order, it therefore reflects the importance of the waterfront area in terms of its visual and atmospheric condition.

9.4.3 Building

Factor 3 in **table 9.7** consists of three variables, 'building colour', 'building condition' and 'distances between buildings'. This factor is therefore labelled as 'building quality', but is partly different than **factor 1** included within **table 9.6**, which also deals with buildings and is configured by 'building colour' and 'building heights'. This is due to

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the fact that the 'buildings' factor in **table 9.7** is configured by three building issues which may indicate the larger awareness of non-members towards buildings along the waterfront. Furthermore, **factor 8** within **table 9.6** highlights another factor that deals with the organisation of buildings and further represents the awareness of non-club members towards other building related issues. On the other hand, **factor 1** in **table 9.6** highlights the issues concerning buildings represented as 'building heights' and 'building colour' being the main two variables, thus representing a physical aspect of the built environment.

The building dimensions represented in both groups appear to raise two further differences between both groups. Within the non-member group, the building dimensions raised, reflect a more experienced nature, as they deal with 'building condition', 'distances between the buildings' and 'building organisation'. These issues seem to suggest that this group more or less experience the places along the waterfront from first hand involvement with these places. On the other hand club members reflect 'building colour' and 'heights' which are issues that are more visually perceived and less experienced. As mentioned above, the non-member group mentioned more issues relating to the waterfront, which again suggests that club members do not actually visit the waterfront. This may insinuate that the club member group practice visiting the Nile from within hotels and restaurants located along the Nile.

9.4.4   Place Needs

Factor 4 in within the club member group (**table 9.6**) combines issues related to the provision of both 'walking and seating areas' and 'public places' along the Nile. Similarly, **factor 4** in the non-club member (**table 9.7**) group listed issues associated with the provision of public places along the Nile and further reflects 'width of views' and 'traffic reduction'. These issues reflect certain design and planning dimensions, suggesting that both groups are in need for providing and improving public areas along the waterfront, and therefore this factor is labelled 'Place Needs'.

9.4.5   Visiting Needs

Factor 5 in the non-club member group (**table 9.7**) contains the factor related to the presence of enough parking space. This issue was only mentioned by this group, while

the club member group (table 9.6) did not contain a factor related to parking space. This indicates that non-club members are more aware of the necessity of parking space along the waterfront in comparison to club members. This again suggests that non-members visit the waterfront more than club members do. It confirms the earlier result, which concluded that club members are contact with that area mainly through hotels and restaurants, which usually suffice their own parking spaces. This factor was therefore labelled 'Visiting Needs' as it refers to the need for parking space required by visitors to the waterfront.

9.4.6 Place of Contact

Table 9.6 shows that factor 6 in the club member group contains aspects relating to when people get in contact with the waterfront. This factor collectively combines questions relating to whether people get in contact on the way from home to work and vice versa. Therefore it may consider the frequency of times they get in touch with the waterfront. This factor might indicate that club members usually get in contact with the Nile through daily driving on the way to or from work which is consistent with result 9.4.3 (table 9.4).

In contrast, factor 6 (table 9.7) consists of two variables, 'visiting the Nile Corniche' and the 'best views from the Nile boats'. Both factors collectively describe visiting points at the Nile and are therefore similarly labelled as 'Place of Contact'. The issues raised above suggest that club members in fact do get in contact with the waterfront area but rather indirectly in comparison to non-club members.

9.4.7 Type of People

Table 9.7 shows that issues related to 'Social class' and 'Safety' are represented as factor 7 within the non-member group. This may reflect that issues related to safety may largely deal with people. Consequently, this factor is similar to factor 3 (table 9.6) which combines 'people's behaviour' with 'Social class' and is also labelled as 'Type of people'.

As this Factor 7 has been positioned as such within the non-club member group, it therefore reflects that this group is not responding in the same way in comparison to the

club member group. This is due to the fact that the 'social class' factor was presented as **Factor 3**, thus indicating that club members are more or less concerned with the social class of people in a place in comparison to the non-club members.

9.4.8   Access

Factor 5 within the club member group (**table 9.6**) represents the ability to reach close to the Nile water and is therefore labelled as 'access'. This may indicate that club members perceive the importance of the ability to reach areas closely situated to the waterfront. This again confirms the fact that they may need to use the five-star ship restaurants in an attempt to reach closer to the water. As earlier mentioned, the club member group seem to visit the Nile from within hotels, where the hotels in total may contain fewer points of contact with the water in comparison to the lengths of the Corniche. This is therefore reflected in the perceptions of the club members, which is also indicative of their lifestyles and waterfront visiting patterns.

9.4.9   Place Location

Factor 8 in the club member group (**table 9.6**) indicates the location of walkways being situated close to the Nile water and is therefore labelled 'Place Location'. Similar to the 'Access' factor, it reflects that club members are concerned more concerned with the location of the walkways with respect to the water. This indicates the club members contain two factors concerning the issue of reaching close to the Nile water in comparison to the non-club members. Again this confirms the fact that club members may lack close contact with the waterfront, as their visiting points are differently located than the club members' visiting points. Since **table 9.2** previously indicated that 'the location of walkways' and 'width of views' were included within the same factor, it may suggest that hotels at the waterfront do not contain wide views.

9.4.10 Results

In summary, **table 9.8** below shows the differences between two groups and the order in which the factors were listed in **table 9.6** and **table 9.7**. The main points of interest deducted from the table and are underlined and listed below the table.

Factor order	Club members	Non-members
Factor 1	**Building**	**Social Activity**
Factor 2	Sensory	Sensory
Factor 3	**Type of People**	**Building**
Factor 4	Place Needs	Place Needs
Factor 5	Close Access	Parking space
Factor 6	Place of Contact	Place of Contact
Factor 7	**Activity**	**Type of People**
Factor 8	Place Location	**Building order**

Table 9.8: Comparison between groups in the order of factors.

1. As 'Social Activity' does not exist in the 'club member' group, it is clear that social activity is in higher demand from the people who are not members of clubs. This result indicates that non-club members perceive the waterfront as a potential place for socialising. It also suggests that club members largely use their clubs in social activities. Furthermore, it is evident from the table that the club-members group contain **Factor 7** (Activity) which is presented in **table 9.6** as only dealing with walks along the Nile water edges. This result also confirms that club members are not in need to participate in social activity within public places, particularly the waterfront. This is due to the fact that they exercise these activities from within their clubs. It is also clear that 'Activity' is located as the seventh factor which highlights it's rank and further suggests that club members are not in desperate need to take taking walks along the waterfront. The overall result here indicates two different types of anticipated behaviours along the waterfront; one related to socialising and the other related to having walks.

2. Furthermore, 'Type of People' factor is listed in the 3rd order in the club member

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group, while in the non-member group it is listed at the 7th order. This indicates that club members are basically more aware of the social status/class in differentiating between places, which may reflect the nature of social clubs as being areas of social segregation as well as meeting places.

3. The place of contact further illustrates the varying ways by which both groups gained contact with the Nile. The non-club member group illustrated that they visit the Corniche through the use of boats, whilst club member group contained a factor that illustrates being in contact while passing by on the way to and from work. Furthermore, the Chi-square tests illustrated that the club members appreciated that the best views are from the adjacent streets and hotels. This result again suggests that the club members are not directly involved with the Corniche area.

4. Club members were more concerned with the access and location of the walkways in respect to the water edges. This may suggest that this group perceive differently the ability/inability in accessing the waterfront and reaching close to the water edges.

5. As the non-club member group where seen to be in more use of the waterfront, both groups consequently, displayed differing interests, in improving the waterfront region. The non-club member group is seen to be concerned about the traffic order together with parking space, a factor that was not mentioned by the club members.

9.5 Conclusion

Many statements and conclusions can be derived from this chapter. They relate to the nature of the context, people, and the theoretical approaches mentioned earlier. It was found important at this stage not to consider the statements listed here as being completely definitive, in order to leave the current conclusions unfold a multiplicity of findings, which would holistically be examined within the final stages of the thesis. The following three conclusions are in a sense interrelated as they collectively deal with three main issues. The first one relates to how people classify places according to the social class of people visiting the place. The Second relates to the existence of sports/social clubs and how they determine behaviour of club members. It also indicates that segregated behavioural differences genuinely exist between people who go to clubs for social activities and others who rely on public areas for social activities. Finally, the differences between club members and non-club members in the actual locations in which they visit the waterfront are also highlighted. These three issues collectively describe the nature of the segregated context of Cairo and the waterfront area, furthermore the results reflect the Cairenes' varying perceptions and behaviour within places.

9.5.1 Context

Two issues related to the nature of the context are highlighted here. One relates to the wide existence and use of sports clubs within Cairo. The other relates differences between both groups in the locations they visit the waterfront. The results relating to the context generally indicate that differences exist between people who usually visit clubs and people who don't visit clubs. These differences lie in the location of their recreational and social behaviour. The differences highlight how sports clubs dominate behavioural lifestyle of particular groups. The results further indicate that not all people are regularly involved with the waterfront in the same manner, as both club members and non-club members may vary in visiting different locations along the waterfront. The presence of sports clubs as regular social places in which a large part of social activity takes place has also been highlighted in this chapter. This was confirmed in the Factor Analysis Test that highlighted the importance of the place location in relation to the Nile water. This factor highlights differences existing between various types of place

locations. The intentions of club members and non-club members are shown to vary, where it was evident that the latter group was in greater need of the waterfront for the purpose of social interaction. The former group mostly experiences the waterfront from within restaurants and hotels situated along the Nile, which shows their different intentions in visiting the Nile. Therefore both groups interact differently with the waterfront.

9.5.2 People

The Factor Analysis presented the dominance of meeting friends in the response to the questionnaire. This further highlights that meeting friends is an important aspect of people's social activity that people engage in. This is yet another aspect of Cairene public social life.

Furthermore, the Factor Analysis indicates that the subjects mainly described places in relation to the social class level of the people who visit the place. The club members were found to use this factor more than non-club members do in differentiating between places. This class-classification of places indicates distinct segregation in Cairene social structure and perception. These segregated perceptions shall later be historically accounted for within the following chapter.

9.5.3 Theory

It has been mentioned above that the club members visited the waterfront from within hotel restaurants and cafeterias. This was different from the Nile locations chosen by non-club members who found that the better views were from the Nile boats. The various locations of activities determined how the subjects responded to the questionnaire. This would suggest that the differences in responses were not a result of age, gender or professional differences but were a result of the different interactions conducted by both groups within different places. Here the club members mainly interacted from within the enclosed spaces of hotels, whereas non-club members were in more direct contact with the waterfront and the water edges. Therefore it is concluded here that the different types of interactions basically determined differing judgements and therefore supports the Participatory approach to environmental judgement.

PART THREE

CHAPTER 10

PART ONE
(THEORY)

PART TWO
(CASE STUDY)

PART THREE
(CONCLUSION)

CHAPTER 1	THEORETICAL REVIEW	
CHAPTER 2	THEORETICAL BUILDUP	IDENTIFYING THE RESEARCH APPROACH
CHAPTER 3	MODEL	CREATING THE MODEL
CHAPTER 4	INTRODUCTION TO CASE STUDY	
CHAPTER 5	RESEARCH TECHNIQUE	OVERALL RESEARCH METHODOLOGY AND PROCEDURE
CHAPTER 6	DESCRIPTIVE ANALYSIS	INTERVIEW ANALYSIS — Part One
CHAPTER 7	CONTEXTUAL ANALYSIS	
CHAPTER 8	ANALYSIS OF HUMAN PERCEPTION	QUESTIONNAIRE ANALYSIS — Part Two
CHAPTER 9	OVERVIEW OF RESULTS	
CHAPTER 10	CONCLUSION AND RECOMMENDATIONS	EXAMINING THE RESEARCH FINDINGS
CHAPTER 11		

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OVERVIEW OF THE RESULTS: IDENTIFYING THE PROBLEMS

10.0   Introduction

At first, this chapter independently describes the issues mentioned within the previous analytic chapters in order to discuss the level of *variation* existing within Cairo and its effect on social/recreational behaviour and judgement. Furthermore, the particular behaviours and locations in which people are involved for social and recreational behaviour are discussed. This chapter further attempts to define the nature of Kasr el-Nil area and the waterfront from this point of view. Therefore it first of all sheds light on the existing configuration of the *context*.

Secondly, this chapter seeks to emphasise the main *human*-related aspect of perception. The previous results determined a social class-based description of place. This chapter consequently discusses, particular social class issues relating to aspects of the physical structure of the city. This is in order to outline various and collective configurations of society and place that would elaborate on the results.

The conclusion of this chapter further endeavours to identify and list the problems that were revealed by the research. These problems shape the final objectives of the research and are followed up by the attempt to tackle these problems through a various recommendations within the concluding part of the research presented within **chapter 11.**

10.1   Context: The Level of Variation along the Urban Waterfront

The waterfront is heavily used by Cairenes particularly during public festivities and national holidays where large numbers of people visit central areas of the city from urban, suburban and rural areas for celebration. These central places may, at times, be largely congested with groups of people and families going for walks, particularly along the length of the Corniche. Main traffic routes exist and spread along the Corniche and are a prominent characteristic along the whole of the waterfront area. Within the past decades, this characteristic consequently led the official's 'problem solving' orientations to perceive the Corniche as a potential for solving traffic congestion within the city.

The whole of the built form of Cairo concentrates on the waterfront has a large effect in heightening the centralised situation. However, the general East-West axial pre-planned growth of late century Cairo juxtaposes the traditional North South growth along the Nile and denies the expansion of the city along its waterfront. Thus the central waterfront areas tend to receive far more concern and maintenance than the more peripheral areas at the outskirts of the city. This in turn concentrates the various businesses, recreational and cultural activities to the central parts of the city where the bulk of the population exists, thus avoiding the sparsely distributed populations around the city's peripheries.

Currently, new pedestrian projects along the waterfront are taking place. These schemes are intended to reach other northern and southern areas of the urban waterfront. The planning approach is in favour of improving the water-edges for public use. Meanwhile, further developing the water-edges would add to a heightened centralisation of activity points within central parts of the city.

This leads to two issues related to people and the lack of available public space along the waterfront. The first relates to the location of the main area of attraction along the waterfront, mainly Kasr el-Nil. The second relates to how clubs to a large extent satisfy and further regulate social behaviour. Both these issues reflect that people in Cairo do not have a variety of social urban spaces to choose from; club members are confined to their private clubs.

10.1.1 The Central Location of Kasr el-Nil

As the Kasr el-Nil area lies in close contact to the city centre it is therefore highly accessible along the main public commuting points. The inclusion of the main, bureaucratic buildings, C.B.D (Central Business District) constitutes to a major attraction point for various shopping areas, bank headquarters, five-star hotels, restaurants and recreational activities. Furthermore, many of the restaurant-boats are stationed along the water edges, in order to take daily tours along the Nile. Other boats are permanently stationed to the riverbanks. The existence of the above activities and circumstances in which the area of Kasr el-Nil exists today uplifts this area within the city.

Chapters 7 and **8** highlighted that the subjects' responses and descriptions of the areas along the waterfront describe two interrelated issues: 1. Descriptions were confined to the area of Kasr el-Nil; 2. A common large awareness of this area was suggested to have been an outcome of its central location in comparison to other waterfront areas.

These two issues give further insight into how place perception is influenced by the level of variation existing within a specific context. These descriptions have been previously illustrated to govern people's detailed and first hand knowledge of places. As the subjects' choice of constructs[1] mainly describe the Kasr el-Nil area and was further used to evaluate other 'non-central' areas[2], the subjects' descriptions were collectively and often confined to describing the Kasr el-Nil area, which largely influenced their judgements when compared to other waterfront areas. This result is a true representative of the P.C.P.[3] technique, which hypothesises that people describe phenomena according to past experiences. In our case the majority of the subjects' past experiences revolved around Kasr el-Nil area.

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[1] The word 'construct' has earlier been explained within the explanation of Personal Construct Theory in **Chapter 5**. This approach was used in the interviewing sessions and further refers to the various variables obtained from the questionnaire.

[2] See **table 7.5, Chapter 7** and **table 8.2, Chapter 8**.

[3] P.C.P is an abbreviation of Personal Construct Psychology and was earlier described within **Chapter 5**.

Furthermore, **table 8.2** in **chapter 8** does not only list the various factors descriptive of Kasr el-Nil but further presents it as a typical central area since the table also shows many issues associated with aspects of centrality. The table shows that the perceived level of maintenance within this area is higher than in other waterfront areas. Although the centrality of Kasr el-Nil earns it a particular uniqueness in comparison to the other waterfront areas it can be concluded that the unavailability of alternatives confines people's judgements to particular aspects of Kasr el-Nil. In comparison, other waterfront areas are considered "out of town" and largely lie to the North and South of the city centre. Although these areas are at a convenient location for use by nearby local residents, they experience a considerable lack of maintenance. The lack of concern on behalf of the municipalities for improving the water edges consequently discourages public involvement with these places.

The variables associated with Kasr el-Nil listed in **table 8.2** further determine the composition of Kasr el-Nil that accommodates for a variety of activities within this place. The above discussion therefore highlights that perceptions are guided through the amount of variables existing within the environment. In this case the variables are confined to a particular area and consequently limit peoples' perceptions[4].

Furthermore, the findings shown in **Chapter 9**[5] indicated that the waterfront is a potential place for social activity in which people were already involved; yet, though many restaurants occupy the water edges, these deny public use and thus the existence of public social space. As the Kasr el-Nil is perceived as a dominant attraction point, having large potential to promote social interaction, therefore other waterfront areas should also accommodate for this activity. This would serve local residents of the other areas existing along the northern and southern areas of the waterfront with more public space that would fit the various needs of the residents.

So far, it has been demonstrated that two interrelated issues are of concern, particularly relating to the Corniche. First and foremost, social activity may largely take place within public space along the waterfront and depends upon the availability of space. Secondly, the descriptions of certain places were of a centrally based perception that is to say that

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[4] This issue has been earlier discussed within the conclusion of **Chapter 8**.
[5] See **Step 1**, **Chapter 9**.

people were less aware of non-central areas. This has draws attention to the lack of other waterfront locations available to visit, which in turn suggests that whole waterfront environment, largely lacks in sufficient distribution of activities. Thus by creating more variation, which is not solely confined to physical appearance, but promotes and embodies the need for other activity-attracting points to the north and south of the Kasr el-Nil area. This distribution is not intended to create similar places.

The main postulation here is that centrality restricts the existence of a *variety* of potential behaviours and descriptors (constructs) by which people use in order to describe the Nile waterfront. This demonstrates that previous interactions with places largely affects perception and behaviour. In this case, the heightened experience of central areas, shapes how people construe places along the whole of the waterfront.

10.1.2 Sports Clubs as a Regulation of Social Behaviour

Some of the present day sports/social clubs have existed since the time of the British occupation. The Gezira and Turf clubs remained exclusive to the British during the occupation. Currently this racially biased exclusivity has been transformed into a more social form of class-exclusiveness within the Cairene society. As class and social structure may internationally differ in behaviour and built environment, more elaboration on sports clubs was found necessary to give the reader some background to sports clubs, Cairene behaviour and the social structure of the society. This is in order to understand the effect of today's sports clubs upon the social and recreational lifestyle of people within any urban environment. It also determines how sports clubs affects their members' judgements of public space.

In Cairo, sports clubs are quite similar to the American example of country clubs, containing various sports activities, but are rather in they are located within the city. Sports clubs basically contain sports facilities[6] such as swimming pools, tennis and squash courts, football grounds besides open areas, tea gardens etc. They also contain dining halls and cafeterias, which in a way slightly shift their function to that of a more

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[6] Two sporting clubs, Gezira and Seid (shooting club) simultaneously contain a golf course and a shooting area. Those two recreational sports are unique sports activities that specifically relate to each individual club.

social place. It is important to indicate that these clubs occupy large open areas of land and are not at all confined to indoor spaces as such in the United Kingdom.

From observation, weekends (Fridays) and weekend nights are peak points for club social activities. Festivities and religious holidays also witness gatherings where people meet friends and relatives within their clubs. In a sense, the clubs regulate social interaction by confining it to certain strata. It is important to add that although clubs are bordered outdoor areas for social interaction, as in any typical Arab society, a large part of Cairene social interaction occurs at home.

Membership is a must for entering these clubs with each club having its own membership price rates targeting a specific class of society. Access for non-members are also available but only by buying often-expensive day-use tickets. Occasionally, ticket buyers are requested to accompany members upon entry, reinforcing the social selectivity of access. Membership fees determine the quality and amount of facilities within the clubs and the social stratum and income level of the visitors. The areas occupied by clubs also vary in size and location within Cairo. The totally private clubs charge higher fees; clubs for lower income families may be supported by labour unions and include relatively limited sports facilities. Meanwhile, other clubs are subsidised by the government under a programme for promoting sports and other activities for the youth[7].

Chapter 9 indicates that significant differences existed between club members and non-members with respect to the best locations for viewing the Nile and the affordability of the visited place[8]. These differences highlight two interrelated differences between both groups. Firstly, both groups can largely be distinguished by income level, which would demonstrate the ability or inability for certain groups to affiliate to clubs. Secondly, each visiting place along the waterfront consequently differs according to various income levels. It is concluded here that the existence of hotels, restaurants and boat-restaurants confine higher income groups to these places, with other lower income groups having to seek cheaper alternatives rely on public areas, particularly the waterfront.

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[7] It was difficult to obtain the exact number and classification of social clubs within Cairo.
[8] See **chapter 9**, <u>**Step 3**</u>, Result no. 3.

The differences between both groups also lie in the fact that the 'social activity' variable was presented as the 1st factor in the list of factors for the subjects who were not members of clubs. This indicates the unavailability and heightened demand for recreational and/or social space on behalf of non-club members. In comparison the club members group did not at all include a 'social activity' factor within their eight listed factors[9]. This result identifies the differences in needs between both groups, where non-club members have a greater need for out door public space. It also highlights how sports clubs satisfy their members' needs for social interaction and recreation.

This therefore suggests that club members' confinement to their clubs is due to the unavailability of other public social/recreational space within the city and along the water-edges, which in turn affects the social lifestyle and movement of people within the city[10]. As the results also indicated that non-members are more frequent visitors of the Nile waterfront[11]. It is therefore concluded here that other places along the waterfront should further accommodate for social interaction thus serving the needs of a large proportion of the population who do not affiliate to clubs and live in close vicinity to the Nile.

The existence of these clubs together with the lack of public open spaces has in a way confined the social and recreational behavioural patterns of different classes of the Cairene public. These behaviours were earlier highlighted by the results listed in **chapter 9** that show differences in factoring between club members and non-club members[12]. The results demonstrated that differences existed in factoring between both groups. The first result relates to how sports clubs highly effect the social behaviour of various groups and control where and whom people meet. It further illustrates that club members do not currently recognise the social function of any public space including the waterfront. Clubs are not the sole cause for this but it should be clear that the lack of convenient public space within Cairo has an equal effect in heightening the importance of private clubs and its affect upon outdoor social behaviour. It is evident that the social and behavioural segregation exists within the city and is predominantly due to the

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[9] See **Chapter 9**, Step 4, Result no. 1 for reference to the conclusion made on Social Activity.

[10] See **Chapter 9**, Step 3, Result no. 4 and **Chapter 9**, Step 4, Result no. 5.

[11] See **Chapter 9**, Step 4, Result no. 5.

[12] See, Step 4, table 9.8.

prominent existence of private clubs as opposed to relatively smaller and scattered public spaces. All of the above indicates that outdoor inter-social interaction among various classes is extremely limited.

10.2 Human Perception: Social Class Differentiation

It was earlier demonstrated that significant differences exist between club members and non-club members in their perception of place, being predominantly based upon social class differentiation. The results illustrated that club members restrict their out-door social activity to within their clubs. This thus suggests that public space is compelled to, in many respects, comply with the requirements of various groups. It also suggests that public space should cater for different tastes in order to conform to the different social groups existing within Cairo.

Both club member group and the non-member group differentiated between places in terms of 'who' goes to the place[13]. The same variable (Type of People) was presented by both groups but in a different order, where club members presented it as the 3rd factor in contrast to the 7th factor within the non-club members' factor representation. This indicates that the club-member group more elaborately used this variable in differentiating between places.

As both groups contained this factor, this result confirms that the Cairenes' evaluation to places may be governed by determining whether they tolerate contact with unfamiliar people or not[14]. That social segregation appears to be relatively more important for the club members than the non-members indicates that sports clubs largely regulate social interaction and further confine certain groups to certain areas within city[15].

Furthermore, certain groups use sports clubs mainly for social interaction. This may not only be a matter of the unavailability of public space but can largely be configured by peoples' familiarity with others, as socialising in this case, takes place with "who you know"[16]. Whether or not people like meeting friends or relatives in outdoor space however, it largely demonstrates the social confinement of familiar groups to meeting at familiar points. It also addresses the public's acceptance, particularly on behalf of the

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[13] See **Chapter 9**, **Step 4**, Result no. 2.

[14] See **Chapter 9**, **Step4**, Result no. 1.

[15] See **Chapter 9**, **Step 3**, Results no. 1, 2, 3 and 4.

[16] See **Chapter 9**, **Step 3**, Result no. 1.

club-members, that meeting familiar people largely dominates their judgements to places and further controls where people meet within the city.

The above results present sports clubs in a manner, rather different from its sports functions, as places for social segregation and the regulation of social interaction. It may be the case that people are satisfied in choosing places to socialise with familiar and likewise people, and/or it could just be a matter of class segregation for projecting status. Both these reasons have been a clear result illustrating the means by which people evaluate places. The results indicate that differing interests to the waterfront and public space in general, were apparent between both groups and further suggest that non-members are more frequent visitors to the Corniche[17].

According to Reid (1977) social class can generally be regarded as the categorisation of people on the basis of occupation, due to the interrelationship between social class with both income and educational levels. The earlier results also indicated that people were concerned with the ability to afford visiting certain areas and thus income affects, by a second way, how people perceive places[18]. This suggests that income level may be used in order to differentiate between the groups. Thus income level, educational level and occupation can measure social class. These issues are closely related to the lifestyle of the individuals which, according to Patreous (1977), may be embodied in environmental competence based upon wealth manifested in physical representations, such as house and car ownership which represent the level of status enjoyed by the individual.

According to Egyptian society, these tokens of 'prestige' are similar in many respects and vary from ownership of physical entities to aristocratic lineage. In Western societies, the ranking system and income distribution and systems of authority is based on work (Klausner, 1976). Within recent decades, society rank, authority and income in Egypt were closely tied to pedigree than to work. According to Abou El-Ela, M. (1995) this may have been the cause for recreational activities occurring between groups and individuals of nearly the same social class. The above would suggest that Cairene social status is also embodied in the form of club status.

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[17] See **Chapter 9, Step 3** Result no.1, 2, 3 and 4 & **Step 4**, Result no. 1, 2, 3, 4 and 5.

[18] See **Chapter 9, Step 3**, Result no. 5.

Results in Part Two of the case study illustrated the emergence of two highly important factors derived from the questionnaire: social class discrimination between areas; and the need to provide meeting places for public socialising. Both factors significantly relate to Cairenes' social structure and patterns of behaviour, which in turn effect their evaluation to places. This reflects the model introduced within **chapter 3** built upon a transactional perspective that deals with phenomena as holistic unities. Consequently this chapter is intended to describe both the physical form of Cairo and the origins of the Cairene social structure in a series of events that correlate both entities. Therefore, both social order and the physical transformation of Cairo are mutually regarded within a whole[19]. This is implemented in order to determine the origins of the existence of a diverse socially segregated pattern of behaviour within the Cairene society inherited from the medieval city and further reflected in the modern city of today. Thus, it is of great significance to highlight the major transactions that had undergone within Cairo that would determine a relative understanding of how various patterns of segregation came to exist within the city.

Appendix 4 endeavours to highlight the various ethnic and religious backgrounds of the population, with its rulers and the various locations of settlements, which they inhabited. Due to the difficulty in predicting the prominent patterns of segregation within the historic context of Cairo, it must be stressed that the appendix is but a brief description of certain historical accounts. Nevertheless, the importance of these accounts is of discernible impact upon the Cairene society of today, being reflected in their behaviours, perceptions and the physical configuration of the city. This appendix therefore concentrates on the socially segregated nature of ethnic origin and pedigree through history, in order to describe the origin of class differentiation within the physical structure of Cairo through a transactional account of the events.

10.2.1   Current Class Structure

Indeed the pedigree system has largely diminished within the past 50 years; a more income-orientated society makes the basis for the current class structure. However, class and aristocratic lineage effect people's perceptions and prevail to this very day. During

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[19] As previously mentioned the transactional perspective is a holistic approach that regards psychological phenomena as a holistic unity rather than combinations of separate entities.

the past decade Egypt has witnessed major privatisation campaigns which were expected to provide more job opportunities in a more capitalist approach. This economic structure would yet increase the work and income related class-ranking system. These recent transformations in the economic structure of the Egyptian society together with the old pedigree ranking system makes the prediction and categorisation of social class, a complex matter to identify. This complexity makes it difficult to break down the class structure of the Cairene public to further understand their behaviours and interactions with the physical form of Cairo.

It is reasonable to refer to Abou El-Ela M. (1995) in her categorisation of the Cairenes' social class structure with reference to their outdoor, recreational behaviour into four distinct classes: Lower class, Lower Middle class, Upper Middle class and Upper class.

The Lower class is often considered as the working class, having little education and insecure jobs. They constitute to the largest percentage of the Egyptian society and are labelled blue-collar workers. Their recreational behaviour takes an informal pattern, as they have no specific time or budget for recreation. The Lower classes' social behaviour takes place along the walkways of streets outside their residential blocks and in cafeterias, thus remaining close to home. This behaviour is not pre-planned and the narrow streets (Hara) within a low class residential area may constitute to a large amount of activities that are within the limits of the neighbourhood.

The Lower Middle class people mainly have white-collar work, differ from Lower class people, in their level of education although their incomes are no greater than those of the blue-collar workers. Their recreational behaviour is similar, in that both groups mix and integrate easily in outdoor spaces and both groups generally share similar recreational activity patterns.

Upper Middle class people have a more comfortable salary and have benefited from higher levels of education. This group is more organised in its recreational and social activities, having more specialised open spaces for these activities in the form of private clubs and public spaces with reasonable fees to pay.

The Upper classes are of higher personal wealth, enjoy higher educational levels, may have access to higher positions of power and prestige within the country and may also

be descendants of certain aristocratic lineage. This class therefore tends to be more formal with organised recreational activities taking place within private clubs and may even be in the form of travelling abroad. In Egyptian society and within this class, open public spaces may be abandoned and neglected as these people have little demand for it in comparison with the lower classes.

It is important to highlight that there are subgroups existing within these categories and that at certain times, some groups may move along the class strata, mainly depending upon major political and economic movements. In relation to social segregation, the task of categorisation based upon income level is a more pronounced approach in determining social groups and their patterns of behaviour.

The results highlight the segregated nature of social activity of Cairenes within the city. Increasing specialisation of functions and well-defined single-use areas is a prominent aspect of industrialised cities, most noticeably in the United States. Other forms of segregation may also be based upon social criteria, where people of the same social class and race live segregated from the rest of the population.

> "Economic growth without social equality results in a greater degree of material comfort, but it does not eradicate society's internal privileges and may even break up what is left of a community because of the emergence of spatial segregation and homogeneity" (Lozano E. 1990, p.140)

As described within this chapter, medieval Cairo witnessed quarters being occupied by various ethnic groups. According to Lozano (1990) segregated areas today are much larger than they were in pre-industrial cities, where homogeneity has extended to nearly every activity leading to reductions in social exchanges, the loss of choice and diminished social interaction. In contrast to the case of the earlier medieval city, segregation in the present day is forced upon most members of a population regardless of their individual choices. This is certainly the case of most groups, except the Upper classes, which retain a wide range of choices.

Land-use segregation in Cairo is not only a result of planning practices; at times it may respond to some cultural requirements. However, segregation can take place in numerous forms, not only in terms of function or "Land-use" (as environmental

designers would argue). It also deeply affects the segregation of social life. Real estate prices and the lack of commuting facilities may control social segregation. Many slums and suburban areas are not only a result of mistakes or imperfections but are by and large a result of the professionals' wide spread use of the "zoning" tool, for organising land use which consequently results in segregated patterns on which Cairo has developed.

According to Lozano, E. (1990) spatial segregation reinforces the social class system and further suggests that:

> "In affluent societies based on a class structure, the personal symbols of class differences such as clothing are to some degree eroded, concealing class differences" (p.139).

Furthermore, a good address here can establish the individual's status. He further suggests that in Third World countries striking differences appear a peasant and a bourgeois person, as was the case in the Middle Ages. This has been the case within Cairo as earlier discussed within this chapter.

The results indicated that sports clubs might also reflect a reinforcement of status, particularly in situations where social differences are rather unclear. Though this may seem as a generalisation, reflecting back to the Cairene society, it suggests that sports clubs may primarily embody a symbol of status, where not only membership fees determine the club's status but furthermore, ones affiliation to a popular, 'respected' club projects the individual's status.

The above discussion illustrates a more clear and distinct income-related description of group social behaviour. It verifies the results achieved that identify issues relating to how affordable a place is to visit. Furthermore, the upper middle and upper classes enjoy the benefits of the existence of private sports clubs for recreational and social behaviour. This leaves the larger percentage of the lower classes without convenient open public space, other than the streets located outside residential blocks. It is therefore found important to underline the fact that public space need not only be available for the unprivileged classes but should accommodate for all strata of the population.

Indeed, present-day Cairo does manifest clear extra concerns as to the upkeep of certain districts in opposition to other areas within the city. However, a growing awareness for public need is evident in attempts to create more public space. The privatised forces of the present economy may unveil a system that only reacts to a more financially based policy. This would however promote recreational space that would be business orientated, such as the creation of theme parks, private golf courses etc, where the creation of truly public space within the city would be ignored. Unless both environmental designers and government decision-makers co-operate, large numbers of the population would be denied their demand for free and amenable public space within the city[20].

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[20] The effects of privately owned space as opposed to public space shall be discussed within the following chapter.

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10.3   Conclusion

This chapter discussed in more detail the results that are of main interest to the research, which were derived from the earlier chapters. The various discussions raised within this chapter attempt to clarify more background to some of the main results achieved which initially discussed the level of variation present along the waterfront context. The influence of sports clubs upon the regulation of behaviour within Cairo was also highlighted. Both issues related to the *context* of the waterfront and the configuration of public space as opposed to private space within central parts of Cairo. This chapter also discussed how social class relates to Cairene culture. **Appendix 4** traces from a historical account how patterns of segregation existed and was further inherited throughout many generations within Cairene culture. This expresses how class had transformed the city, from being based on ethnic division to a more class divided pattern of space. Today's class structure within Cairo and the patterns of social and recreational behaviour was further elaborated.

Therefore the various discussions within this chapter intended to: overview the earlier results; discuss the particular backgrounds to the main results; and highlight the main problems relating to the context, which are listed below. All of the above raised various problems relating to the place and to the social nature of Cairene culture and lifestyle. Therefore the following identifies the specific problems deduced from the analysis.

10.3.1   Main Problems

The issues mentioned below are considered as an overall summary of problems deduced from the analysis of the case study. It is important to note that most of the issues are highly interrelated and dependent upon each other. Some of the problems listed below are considered as an outcome of other problems and vice versa.

10.3.1.A Confined Patterns of Cairene Social and Recreational Behaviour

The results showed that the perceptions where confined to the area of Kasr el-Nil. This confinement results from the centralised visiting locations existing along the waterfront. In comparison it also suggests that other visiting points existing along the waterfront, particularly remote from the central areas, were hardly visited.

The results also highlighted that differences exist between club members and non-club members in their visiting locations along the waterfront. The differences between both groups also showed that club members' social and recreational behaviour is further confined to their sports clubs. Therefore, perceptual and behavioural differences exist between both groups, which results in the ability or inability to participate within a place.

10.3.1.B The need for affordable public space

Non-club members' need for public space to participate in outdoor social behaviour was discussed here and lies in contrast to the club members whom socialise within their sports clubs. In comparison between both groups, non-club members are more frequent visitors to the waterfront and are in greater need for public areas. The configuration of space in Cairo has been transformed to a more income orientated class structure and is therefore driven by the internal economic forces of the market. This indicates that affordable space should be provided for the general public as well as private and more costly space.

10.3.1.C Central Location of Waterfront Activities

It was also described here that the majority of activities were concentrated within central parts of the waterfront. Many activities exist within these central areas in comparison to the more remote places that witness a scarcity of activities. The discussion within this chapter concluded that this centralised phenomenon confined people's judgements

solely to the central areas of the waterfront, with little reference to more remote areas, which are considered by the subjects as empty and isolated areas.

10.3.1.D   Lack of Concern towards Many Remote Waterfront Areas

Many public areas along the waterfront, which would be appropriate for use by the general public specifically areas remotely located from the city centre lack maintenance and general upgrading. This is in contrast with the Kasr el-Nil area and other central areas, which are very well looked after.

10.3.1.E   Lack of Public Space in comparison to Private Space

The results have also indicated the lack of outdoor public space. In comparison many private areas exist within the city in the form of clubs, whether or not they existed along the water edges, their existence is wide spread within Cairo. Other privatised public spaces are widespread, in the form of cafeterias, boats, restaurants and hotels, which are spread out along the waterfront. Furthermore, small and scattered public areas exist along the water edges and lack considerable attention.

10.3.1.F   Need for Outdoor Social Interaction

People's perceptions highlighted the potential of waterfront areas for social activity. This highlighted the need for providing outdoor space for the purpose of social interaction. This requirement particularly relates to the non-club member group, which are frequent visitors to the public areas along the Corniche.

10.3.1.G   Lack of Inter-social Interaction

The results concluded that the sports club, privatised public spaces and unavailability of public areas regulate both social and recreational interaction within the city. It was further discovered that social segregation appeared to be relatively more important to

club members than non-club members. As a consequence this stresses the existence of the lack of interaction amongst various classes.

10.3.2   Criteria for Proposals

This chapter raised issues relating to the centralised activities and availability of public space along the waterfront. It is important to propose a more decentralised approach to the waterfront and within the city. Furthermore, private space is equally important as public space as they are both utilised as social areas for certain classes. The issue remains that public areas are not adequate to serve the majority of the public. The following chapter discusses this issue in more detail and further attempts to highlight how designers should deal with this situation.

The need to create a compatible situation between context and human needs is one of the main issues here and relates to the adaptation perspective, which underlies the model. The goal of this balance would result in a hypothetically perfect situation in which all people's outdoor needs are achieved. Other than the social requirements of Cairenes as highlighted in this research, it is important to create a variety and multiplicity of public areas to visit, which avoids the present 'mono-functional' context of the waterfront. Therefore the context should allow for a multiplicity of different perceptual stimuli that further respond to a variety of potential activities to take place. Details of this issue shall further be explained within the following chapter.

CHAPTER 11

CHAPTER 1 — THEORETCIAL REVIEW

CHAPTER 2 — THEORETICAL BUILDUP — IDENTIFIYING THE RESEARCH APPROACH

CHAPTER 3 — MODEL — CREATING THE MODEL

PART ONE
(THEORY)

CHAPTER 4 — INTRODUCTION TO CASE STUDY

CHAPTER 5 — RESEARCH TECHNIQUE

CHAPTER 6 — DESCRIPTIVE ANALYSIS

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PART TWO
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CHAPTER 10 — EXAMINING THE RESEARCH FINDINGS

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PART THREE
(CONCLUSION)

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CONCLUSION AND RESEARCH RECOMMENDATIONS

11.0 Introduction

This chapter concludes the research with emphasis on the qualities of public space required to be maintained. The later-introduced concepts help interpret the results achieved and lead towards the proposal of a solution that endeavours to respond to the problems listed within the previous chapter. It is therefore attempted here to cross-refer these results with the theory of Adaptation, Participatory paradigm and Transactional approach. These theoretical reasonings are further used in interpreting the research findings and help in guiding the research in order to create a design framework that would address the previously introduced problems.

It is here required to introduce and fuse together a number of theoretical concepts and paradigms discussed throughout the thesis, this is in order to attempt to recommend an appropriate design framework, which configures the first stage of recommendations. Furthermore, specific requirements of the physical state of the waterfront and interaction with place are presented within the second stage of recommendations.

Furthermore, the research attempts to create a more variegated environment, in order to increase the opportunities for achieving the required level of cohesion between different groups of people and place. This chapter therefore discusses many aspects relating to the growing phenomenon of privatised space.

The argument presented is that, in order to increase the richness of the waterfront area a proposed design strategy should attempt to create more diverse environments by satisfying the needs of nearly all classes. It seems a waste to develop the waterfront area without addressing the social and recreational needs of the different classes that visit

and further utilise these areas. This chapter discusses diversity and variation within the environment from different theoretical stances. It is also argued here that it is of great value to create an environment, which encourages and then complements the interaction between various classes. Therefore, the arguments raised here are particularly developed from *adaptation* and *participatory* approaches that collectively underlie the model built, which is based upon a Transactional approach[1].

The role of the present chapter moves on from considering the separate entities of place and cognitive mechanisms to the actual physical environment. Human spatial behaviour is linked to numerous issues relating to different types of settings within the urban environment. Our description of human activity in a place goes beyond the more basic functional use of the place. Interaction in the spatial environment must consider the psychological processes and related cultural behaviours underlying space utilisation.

Within Cairene culture, it has been illustrated that standards differ depending upon the social context within which a place is used. Given the point of view that spatial behaviour is learned, it is therefore not difficult to expect that different behaviours develop within different cultural contexts. The research stated that different sub-cultural variations in life style exist between club members and non-club members. In relation to social interaction, specific differences appeared in the people's visiting points along the Nile, indicating, for example, that club members are reluctant to use the waterfront, as contrasted to non-club members. Though this may appear to be a consequence of the social preference to mix with similar subgroups, the intention within this chapter is to highlight how public space can be designed to suit and further attract a larger cross section of the class strata.

The final recommendations suggested in this chapter, are presented in order to examine how places are used by identifying relationships between different combinations of human interactions with places. This suggests investigating a variety of relationships, particularly those of people in relation to physical artefacts, people in relation to other people, groups in relation to physical artefacts and groups in relation to other groups. The differing perceptions of different people in these cases should also be taken into

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[1] See **Chapter 2** and **Chapter 3** for the argument relating to the theory of adaptation and the transactional approach.

account. These characteristics do not exist independently in the real world, nor are they completely conceptually discrete. However, an examination of each separately may clarify the important features involving Cairene behaviour. This issue shall be discussed within the second stage of recommendations.

11.1   Conclusion on Public Space

Certainly the waterfront contains public space with large potential for a greater sense of community and a meaningful past, however it contains many privatised public areas[2]. Meanwhile, the waterfront's spatial capacity by far cannot accommodate for the necessity for more public space. This suggests the need for more inner-city public space that would accommodate for this imperative in order to reflect the prerequisites of the various classes. These areas would attempt to eliminate the pre-dominance of segregated non-mix areas that are necessary for public equality (see **fig. 11.1**). With the current large increase in political directions in privatisation[3], spaces are managed with more emphasis on consumerism and materialism as on recreation, which undermines a sense of community and meaning in public space. Here, new community developers are currently providing urban space traditionally owned by the public in the form of waterfronts and parks, in the form of privatised public space for their residents' exclusive use.

Private space contributes to the reduction of spontaneous exchanges among strangers as they reduce 'street life', without creating equivalent spaces for social interaction (Lewis, 1990; Kent & Madden, 1994). Privatised spaces have been criticised for eliminating the 'mixing' of dissimilar groups, which is necessary for democracy (Davis, 1991). Some critics have characterised public space as being an essential forum for public exchange of information (Day, K. 1999).

The main problems underlying the ownership of privatised public space remain in the general emphasis on consumption, leisure and security. A consequence of this phenomenon is the compelling drift of private developers towards greater emphasis on a targeted audience and behaviour controlled design. For this purpose the design framework (see **fig.11.4**) and the later-introduced deductions relating to variation and compatibility between different people and places (see **fig. 11.1**) intend to promote observe and respond to behaviours rather than controlling and imposing behaviour. Furthermore, many design critics have denounced privatised public spaces for bland, homogeneous and inauthentic architecture (Sorkin, 1992 b; Huxtable 1997). This

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[2] Privatised public areas, refers to privately owned spaces, such as restaurants, shopping malls, etc.

[3] Within this decade, the Egyptian government is undertaking large steps in privatisation.

research has indicated that private areas (sports clubs) and privatised public spaces can only be seen as constrained and constraining behaviour or as a form of resistance (Day 1999) towards recognising self-identity, depending upon class and level of income. In this case the pressure to spend eradicates access and participation for those without money. This research emphasised the concern with exclusion and segregation and critics have blamed consumer-orientated, privatised public spaces for excluding low-income working class and coloured people (Brown et al. 1986). Further symbolic design features are now included within design in order to restrict use to target specific audiences (Loukaitou-Sideris, 1990). As a consequence, environments are dramatically changing, with the increased preoccupation with safety resulting in 'fortressing' private spaces (Newman, 1985; Davis, 1991; Blakely & Snyder, 1997) such as the case of walled sports clubs, tourist resorts and cafeterias along the Corniche, a prominent phenomenon in Egypt. In contrast privatised spaces are directed towards creating defensible design strategies. In order to create an architecture of segregation (Davis, 1991), as earlier mentioned, these spaces are designed to isolate and further 'protect' higher income groups. In U.S. cities, these spaces have been accused of promoting two unequal cities with spaces created for the middle class people and the leftovers for everyone else (Day, K., 1999).

Much disapproval of privatised public spaces has been documented, mainly for its plundering of public interaction (Day, K 1999). This again confirms the importance of approaching environmental quality through identifying interactions occurring between people and between people and place.

Though the above discussion identifies the negative consequences of the perceived increase in public space, privatised spaces nonetheless serve important functions, such as the resistance of oppressive class based norms, thus providing their users with space to encourage particular behaviours. Thus it may facilitate the resistance of marginalised groups to shape their own identities by participating in meaningful and self-determined activities. Resistance in this case implies the use of places by groups in order to define themselves (Day, K. 1999), where privately owned spaces support a form of resistance. Furthermore, owners and users can meet their desired requirements by the use of private space. This issue lies in contrast with public spaces where many identities are marginalised and overlooked for the intended consideration of all. However it shall be

argued that private space constrains class relations and further, through spatial design, public space can encourage interactions between the classes.

The results of the research and the above argument examins the forces of privatised markets that produce a class-segregated nature of interaction within public space. **Figure 11.2** shall also argue for a design model, which creates more freedom for people in choosing particular behaviours. This is not only tied to the physical qualities of places, rather to the meanings of these qualities within the context of individual group identity of marginalised classes. This highlights the passive participation of higher income groups within public space, thus preventing inter-social interactions, which is presented as a necessity for supporting class relations and a greater sense of community. Thus, improving public space can be achieved through greater public interaction. Meanwhile, the simple provision of public space will not in itself solve the deeply inherited problems of Cairene urban life. What is needed is greater understanding of how key qualities of private and public spaces are experienced by different classes.

In attempting to enhance our understanding of public space, we can use the framework – identifying the level of variation existing within public space – as a benchmark in measuring the quality of public life and public spaces for different groups of users. Once identified, the need remains to articulate further qualities of public space that would conform to various groups who interact within these spaces.

Natural progressions of changes within cities, without exception, should take account of the city as a whole. The adaptation of the changes to the pre-existing configuration of the city and to the style of life is a primary condition of any improvement, including the foundation of new cities. In fact, the changes themselves should not be carried out otherwise. To treat a particular element of the city as independent has become more and more an aspect of a modern method of planning and thinking by the use of 'zoning' tools. It is only through this mode of thought that whole areas are treated as isolated entities. As a result the natural differentiated and hierarchical structure of urban space is transformed into isolated zones. This inevitably leads to the problematic and unresolved incompatibility between different domains of life, preventing continuity. The fragmentation of the urban fabric is reinforced and accelerated by the overall atomisation of the society, creating a distance, which further separates highly specialised and fragmented lifestyles.

In order to appreciate the depth of the problem of the contemporary urban situation, one needs to look more closely at the nature of human interactions or to be more precise, the viewing of equality in the urban environment. The understanding of the primacy and typicality of human interactions in the environment is the most concrete way of understanding the reciprocity of our experiences to the surrounding world. It also reflects the redundancy of various types of involvement within our environment and the revelation of urban quality. Participation is a receptacle of experience and of places, which deposit in them meanings not just as residues but as invitations to a sequel, the necessity of a future. Participation endows experiences with durable dimensions in relation to which the whole series of other experiences can acquire meaning from an intelligible series and eventually a history.

The richness of interactions depends upon the reverberations of meaning through the depth of their history. This is possible because interactions are not homogeneous but stratified and because certain aspects of lifestyle and behaviour change very little while others change more rapidly. Future reference to a history of human interactions with places is but an attempt to remember the forgotten and latent meanings of such critical situations as solidarity, friendship, public encounters etc., including their possible settings such as public spaces, streets, waterfronts, squares and streets shops and cafés.

Interactions may appear as a field of open possibilities without particular limits. Some interactions are more important than others, however the research illustrates that cultures often contain two different spheres of interaction, one situated in the private domain and the other in the domain of public life. The capacity of outdoor experiences should hold heterogeneous elements, which should at the same time contain primary common meanings. In turn, interactions become a critical vehicle of urbanity but equally an important criterion of basic humane urban space.

This body of work highlights the tendency of treating the city as a field of disengaged outdoor interactions that tend to disrupt the continuity of experiences, that create a vacuum in the most central domain of urban life, where private and public interests meet. Public space should reconcile private and public interests by emphasising increased interactions. Positive contributions to urbanity of cities, in the author's opinion, strongly depend on the human ability to retrieve, articulate and create new

domains of life. This would only be possible by attempting to bring together both public and private interests representative of a large cross section of a population, for a common good. Though public life in Cairo is rather fragmented, it still remains in streets, markets, cafés, restaurants etc. By and large the creation of more privatised public space within the city breaks down the continuity of urban lifestyle. Nevertheless, by creating more heterogeneous environments, preserving and restoring those parts of our cities, important common interests can be cultivated. This is a plea for the continuity of urban arrangements, where it might be possible to bring fragmented individual interests closer to common values for common good. Such a requirement can only rely on explicit knowledge of spatial configurations and the symbols that are deeply carried to represent meanings to personal and social life in cities.

11.1.1 The Concept of Variation[4]

From the literature review and the survey analysis, the research explored people's perceptions in relation to the configuration of the waterfront. The model highlighted that a mutual interrelationship exists between both place construal and the context and that the environment shapes people's conceptualisations of places transmitted from earlier generations through cultural norms. This process was earlier referred to as guided variation, which refers to the copying of particular behaviours through social learning.

Therefore, particular conceptualisations of the waterfront of Cairo, the context on which this research focuses, are inherited or copied. It has also been argued that these inherited behaviours may or may not be compatible with new environments. Social learning through guided variation is a widespread means of learning behaviour, as it less costly – making fewer demands on the individual. On the other hand, biased transmission refers to individual choice and creative selection of behaviour and allows for more *diverse* behaviours to appear – requiring more effort from the individual. It has been discussed that through biased transmission, the individual's choice and selection of behaviour is

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[4] Though 'diversity' and 'variation' are both used within this chapter and connote similar meaning, 'variation' is predominantly used. This is as subtle differences in meaning appear between them, particularly with reference to The Concise Oxford Dictionary of Current English (1990), which states;
diversity: a different kind; variety.
variety: 1. Is considered as a class of things different in some common qualities from the rest of a larger class to which they belong. 2. Different form of a thing, quality, etc.
Though both meanings are quite close in meaning however, it is important to highlight that 'variety' gives the sense of a presence of common qualities, which in terms of 'urban quality', allows for a level of harmony to exist within the environment. This is different to 'diversity', which tends to suppress the presence of a harmonious situation thus leading towards more individuality and uniqueness, particularly in terms of places. It is the author's opinion here that in terms of the built environment, variation is a more appropriate term to use, especially within a specific location, as it acknowledges a degree of harmony within the area. On the other hand 'diversity', would be more appropriately applied on a larger region, such as a city or country, where small differences between places tend to disappear at the expense of higher levels of individuality. It is also important to note here that at times 'diversity' is used, this is when the discussion intends to stress the extra need to create more individually unique places. It is also important to note that many sighted quotations have incorporated the term 'diversity', however, due to the subtle differences between both terms they are at times considered as having the same meaning.

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enhanced leading to a better chance for finding compatibility within any environment, providing the environment is more variable.

In this research, the Cairenes' conceptualisation of the waterfront reveals two main interrelated issues. The first refers to the need to utilise the waterfront for social interaction and the second refers to Cairenes' construal of places, with particular relevance on the social class of the people there. Both are considered to be an outcome of the present fixed configuration of privatised public space and the centralised location of public areas along the waterfront. It was considered here that from social learning from within this context, these conceptualisations of space have been built up, promoted and perpetuated through guided variation.

It is therefore argued that in order to provide environments that are more compatible to the differing needs of people, it is important to promote biased transmission. This is achieved by shaping public space in a more diverse nature, particularly by creating variations in public areas along the waterfront and throughout the city. The introduced variations in public space have implied a consequential creation of greater choice in the environment, thus encouraging different groups to participate in different behaviours. This would facilitate more biased transmission to take place. Increased variation within public space would consequently create more potential to recognise and have freedom to choose alternate behaviours, leading to less rigidity in existing social barriers, hence more urban spatial equality.

Variation in this sense is not only related to tangible physical objects, but to also create differing interactions within space. This is as the research discovered that many variations in perceptions and behaviour were an outcome of varying types of interactions within different locations in Cairo, as well as resulting from social learning. This result was made clear from the differences that appeared between club members and non-club members. Therefore the design framework is set in order to observe different places by identifying individually unique qualities of these places in respect to other places.

Consequently, the research shall attempt to create a design framework that would help environmental designers to create more varying places within the city. The framework is built on the concept of adaptation, where the later-introduced design strategy allows

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for observing how people adapt and behave within related places. Furthermore, the framework follows the Transactional approach, as it will addresses mutual and constant changes taking place between people and contexts, thus allowing for the constant observation of these changes. Meanwhile, as the Transactional approach takes a more holistic orientation by allowing constant and regular observation of the context, it acknowledges that other environmental factors are also considered. Thus both the framework and the Transactional approach adopt a more evolutionary nature, as they avoid long-term predictions of situations. The framework further avoids a linear school of thought, as designs are never considered as finalised, but merely a stage within ongoing development. Finally, examples of segregated access to public and semi-public space shall be presented. This showed the lack of public space in attempting to integrate people. It shall further show contrasts between public and semi-public spatial configurations.

Underlying variation is the notion of multiplicity and heterogeneity that lies in opposition to centrality and homogeneity. Meanwhile, it has been a usual case that centrality refers to location, which in many aspects seems to lead away from our understanding of the concept of variation. However, it is the multiplicity to centrality opposition that has had a large effect in the choice of 'variation', which is chosen here to describe variations not only in location but also in type, configuration, function and physical form of space. This leads to an attempt to answering the following questions.

Why is environmental variation needed? The level of variation existing within the environment allows greater opportunity for people to interact. Therefore the waterfront should allow for more variation, thus more interaction. *How should we describe variation within an urban context?* Variation here attempts to connote a more decentralised approach to a particular place. As social activity is a dominant dimension deduced from the results, therefore variation also attempts to determine differences between places in terms of variations in activities participated in within places. This therefore acknowledges that in order to create variation it is important to create various types of interactions within places. This would in turn recommend the decentralisation of the existing centralised activities along the waterfront. Therefore, 'variety' is here considered to reflect variation in type *and* location of interaction. The following attempts to pursue this argument with constant reference to theoretical reasoning. This is for the purpose of identifying the different physical and social forces behind the need

for variation and the varying types of spaces required, not only along the waterfront context, but also within public space in general. However, the answers to the above questions shall be further elaborated within this chapter.

11.1.1.A   The Example of Lemurs in Madagascar

First and foremost, it is important to re-assert that our understanding of the conception of variation originates from a more biological stance to the environment. This is represented in the example of the Island of Madagascar, which contains one of the three most diverse primate faunas on Earth, and certainly the most unusual. Not only is Madagascar important for primates, it is also one of the world's most bio-diverse 'hotspots' on earth. This fourth largest island in the world split off from the African continent millenniums ago and is home to flora and fauna found nowhere else. About 75% of the plants and animals that exist on Madagascar exist there and nowhere else on earth and are endemic to the island. Of the 201 resident bird species, half are found only on Madagascar. About half of the world's chameleon species come from Madagascar, and most of the plants that exist there are found nowhere else[5].

Lemurs are one of those remarkable and popular examples of diverse primates reaching 35 different known species, which are all endemic to the island. It originally contained around 50 Lemur species, were unfortunately 15 of them have died out since the arrival of man. The richness in fauna is an outcome of the diverse habitats existing within the island leading to the evolution and creation of a large variety of species. It should also be noted that the lack of predators in the island has also contributed to the wide variety of lemur species.

However, the point made here suggests that the diversity within this island allowed the opportunity for various types of lemurs to survive and evolve by adapting to the diversity of flora. This diversity resulted in the existence of large numbers of species of lemurs inhabiting the island, each having distinctive features and at times behaviours. The diversity in fauna highly depends upon the diversity in flora and vice versa,

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[5] website: http://www.pbs.org/edens/madagascar/eden.htm

constituting a perfect example of natural evolutionary processes containing primates and flora in mutual coexistence.

As this research addresses humans, the example to be taken here is not that of the long stages of evolutionary changes taking place in the biological makeup of our species. Rather it is that of the adaptations people undertake within their life spans and to inherited behaviours passed down by social learning from previous generations, particularly a more culturally-related adaptation[6]. From the above example, diverse adaptations take place in diverse environments in which humans can acquire the opportunity to choose the most appropriate and preferred behaviour to participate in. Though the above example remains highly theoretical, the following shall attempt to reflect diversity and/or variation in relation to the context of the research.

11.1.2 Theory: Adaptation and Adjustment

As earlier discussed in **chapter 2**, underlying the model of this research is the theory of adaptation, which understands that people adjust their modes of behaviour in order to adapt to a specific environment. These adjustments may take many forms varying from physiological, psychological and biological to the perceptual, behavioural, and the actual adjustment of the surrounding settings in order to achieve a higher level of fit between man and his surrounding environment. As earlier mentioned, this is in order to increase the compatibility between people and places. However societies and places may adjust, it is fundamental that environmental designers and decision-makers acknowledge the fact that changes both in people and places should take place in congruence, in order to achieve a more appropriate level of balance between man and the environment. It is also important for them to articulate the ongoing changes taking place in human behaviour with respect to the urban setting. This would address aspects of change that are elementary to the Transactional approach, which attempts to determine *changing* interactions of man in environment. Thus, furthering the understanding of both designers and decision-makers to the nature of place and its intricate processes. The following therefore attempts to highlight usual behavioural processes taking place between Egyptians and their environment.

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[6] See **Figure 2.1**, **Chapter 2** for the three main theoretical postulates that reflect changes in human behaviour and perception through time.

11.1.2.A   Accustomed Behaviour within Segregated Spaces

Many projects within Egypt shape and are shaped by the society and its developmental demands. These projects project various perceptions of how space is used and how it should be used. It also reflects how Egyptians have become accustomed to clear spatial distinctions within their environment. They consequently reflect how Egyptians have also become accustomed to clear social distinctions in their utilisation of social and recreational space.

According to Lozano (1990), the more affluent groups tend to demand segregation in order to establish dominance in the community. Therefore the segregation of homogeneous[7] habitats is based upon the dominant groups' pre-emption of the most desirable urban niches. This is also reflected in the occupation and ownership of middle upper and upper classes to the summertime resorts in Egypt located along the Northern coasts of Egypt located along the Mediterranean (El-Sahil El-Shamali)[8].

In comparison between British and United States societies in class symbolism, the British society's class system determines who you are, whereas in U.S. society, space is used as a means for classifying people and activities. This implies that unclear social distinctions are projected by the society through the creation of clear spatial distinctions, which not only reflect status, but further act as an enforcement of status (Hall 1969).

Both the above examples in one way or another relate to the Cairene social structure, where the club members' factor analysis induced that the social class of people in a place largely dominates their perception of place. This reflects that space is being used as a means of representing social class status. However, the argument below shall highlight the transformation of Cairene society from the British example to the U.S. example, as more privatisation is currently taking place in Egypt. Though there is an apparent wide mix in land use and space, social/recreational behaviour seems to be

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[7] Land homogeneity was referred to by Lozano (1990) as based on the role of spatial segregation as a reinforcement of the social class system.

[8] This is the Arabic term used for identifying the Northern Egyptian coast where many of these developments take place.

clearly defined amongst the classes. This suggests that economic barriers are erected by both the public and private sectors in order to protect the affluent and consequently reinforce segregation in Cairo, which is a common case globally. Similar examples within Cairo are the new housing projects, which investors are in the process of propagating. This is in the form of constructing new towns with labels such as 'Beverly Hills' and 'Dream land'[9]. These towns are examples of the marketing strategy, indicating their aspired class targets and further evidenced by their names.

As if in imitation of earlier episodes of Cairo's history, these developments again embody the creation of new high-class residential areas situated far from the previous high-class areas[10]. These projects are intended to target the élite and are equipped with high-tech installations such as fibre optics wiring, which is extensively used for marketing. Golf courses are also included within the housing projects. This is yet a further example of how Cairo is becoming increasingly segregated into various private zones not only containing certain classes of residents, but comprehensive recreational facilities. Kraus (1971) explains the recreational transformations taking place within U.S. residential examples:

> "Probably the best way to illustrate the disparity that exists between those who have comfortable incomes and those who live at or below the poverty line is to examine the way in which recreational opportunity becomes available based on one's residence. Increasingly, recreational units or facilities are being included as part of real-estate developments or large apartment buildings. Recreation has become an essential part of the packaging through which housing is offered to the well-to-do" (p.296).

Clearly the new towns contain more spacious housing units, therefore commanding higher prices, and reinforce those social/wealth-related barriers that prevent the lower income groups inhabiting these areas. The building boom currently ongoing in Egypt, like all building booms, is subject to a later decline and these new developments are most likely to permanently exist. This states the urgent need to provide and locate

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[9] Those two names are the real names for the designated areas and are not translations from Arabic language. These labels blindly follow the U.S. example and in turn reflect an idiosyncratic loss of identity not only represented in the use of place names but in public social life.

[10] This phenomenon shall later be addressed as urban succession.

public space, before open public space becomes a permanently depleted amenity. The above discussion and earlier results indicate that private areas satisfy a need and cause arising not only from a lack of convenient public space, but indicating that what public space there is does not satisfy the social and recreational requirements of the population.

In parallel to the new housing patterns currently witnessed in Cairo, segregation is also reflected in the spatial configuration of resorts located along the Mediterranean and Red Sea coasts. A large number of tourist resorts consisting of chalets and cabins are located on the Northern coast to the East and West of Alexandria, and in the vicinities of other waterfront cities, which are major attraction points for the Cairenes. From first-hand knowledge, Cairenes who own a place "up north", regularly go there during holidays, where they can expect to meet their friends, a model of Cairenes' social interaction which relies entirely upon already-known and familiar people. As these conceptions for social recreation lie deep within Cairene culture and psyche, it is easy to understand why further and more recent developments along the West coast of Alexandria have been of a totally privatised manner. The nature of these places indirectly regulate whom one is likely to meet, thus promoting socialising amongst familiar people.

There are many public beaches lying along the coasts of the city of Alexandria, but the Northern coasts are of particular interest as their building stock is constantly extended with new private resorts alongside each other. Each resort, incrementally claiming more of the seashore along the coast for the exclusive use by their residents. Meanwhile, the patterns of these resorts effectively control Cairenes' social lifestyle by the creation of more private zones in the form of chalets and restricted beaches similar in nature to sports clubs. Furthermore, in order to restrict access to outsiders and further contain the class status, nearly all the resorts are bordered with walls, and can only be entered by friends and family of the property owners. This is common within private resorts and is accepted by the owners as it limits public access to their private beaches whilst maintaining the financial value and social prestige of the resort. Therefore, a pattern of private-public segregation, similar to that of sports clubs is also reflected in the vacation locations along the Mediterranean coast. Strange as it may sound, this situation ironically compromises the owners' access to other beaches, thus limiting their potential involvement with other places.

Throughout the years many areas in Alexandria and throughout the Northern coastal resorts have been abandoned by particular classes through urban succession which is described by Lozano (1990) as the;

> "... cyclical replacement of social groups in urban areas, sometimes involving the abandonment of a zone by a group and its occupancy by another group, sometimes involving the expulsion of one group by another" (p.133).

As a result the Northern Mediterranean coast has witnessed further development of many tourist resorts dedicated to accommodating Cairenes' summer vacations. Numerous institutions and private investors have constantly invested in the creation of these resorts and have attracted people within various cross-sections of the population, particularly people who can afford to buy a villa or flat within these areas. These resorts originally built for the more affluent have undergone downward shifts in terms of the different classes that use them. These shifts result in the further creation of tourist resorts[11] into which certain classes have gravitated. The manner in which this sector of the public perceives summer vacations has in turn been a catalyst for the further construction of new resorts.

These movement patterns are driven by social prestige and have become the driving force for investors and developers to further encourage more people into buying a chalet, flat or cabin. Therefore, the pattern of movement from one property to another has become important in creating new resorts, towns or clubs. The lower classes thus follow the upper classes in an effort to 'climb' the social ladder and seek a more amenable lifestyle. The higher classes or the more financially fortunate are either renting out or selling their older summer houses as a result of being attracted to newer resorts having more services, convenient facilities and locations and being more prestigious.

11.1.2.B   Accustomed Behaviour and Adaptive Changes

As earlier mentioned, the lower classes have become used to participating in social and recreational activities in a rather informal manner along streets. That is to say that they

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[11] The resorts mentioned here are particularly built for internal tourism.

are not used to having the convenience of open public space for participating in these activities. This follows the notion that, "Humans are highly adaptable creatures, but their perceptions of the environment are affected by things to which they have accustomed" (Lang J. 1987 p.103). Similarly, the upper classes are habituated to the use of private space, such as their private clubs for the purpose of socialising. Both the above examples reflect the dichotomous and accustomed outdoor behaviours taking place amongst Cairenes.

That which lies in opposition to changing accustomed behaviour is the lack of an effective level of variation that exists in the environment, which consequently influences the rate of social learning[12]. Where social learners who copy behaviour from previous generations are in larger numbers than the individual learners, the latter evaluate alternate behaviours and attempt to choose the best behaviour. Social learners are therefore found to be more common as they acquire behaviours through less effort. This concept also indicates how easy it is to become conform to a particular behaviour and lifestyle, particularly with less environmental variation, as is the case within Cairo, it does not stimulate one in devising alterations. This suggests that creating variation would in effect reduce the level of accustomed behaviour and encourages alternate behaviours to appear.

Furthermore, if the environment affords a particular behaviour and the people are competent enough to participate in it, this does not mean that the behaviour shall take place. On the other hand, if the affordance is not there, the behaviour cannot take place. In our case, social activity is considered as a required outdoor activity. As a consequence the environment should be adapted to afford this type of behaviour, otherwise people shall have to adapt their behaviour in order to cope with the environment as it is. According to Festinger (1957) these adaptations can be the cause of physiological and psychological stress, particularly when situations people are in are not self-chosen.

This implies that the built environment cannot determine a particular behaviour of people unless the intentions, motivations and habits for that behaviour exist. To a great

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[12] See **Chapter 2**, for the discussion related to the level of variation in the environment and it's effect on social learning.

degree, the motivation for socialising and meeting friends amongst the Cairene public does exist. This would indicate that the circumstances in which a group is competent to participate in this behaviour has a need for an environment that accommodates this behaviour. This can be implemented by locating settings collectively responding to various types of spaces and people in order to promote outdoor social interaction (hence, people in relation to physical artefacts and people in relation with other people)[13]. The above indicates that it is totally misleading to explain behaviour and perception solely and exclusively on either the physical environment or on the perceiver.

This discussion views the environment as collectively affording particular activities in response to the individual's motivations, attitudes and needs. This relates to actual interactions and therefore confirms the importance of the Participatory orientation, as it predicts people's behaviours and judgements. It further suggests that Man and Environment should be holistically analysed, further reflecting the Transactional approach. This case is confirmed by the results as they reflect the need for social activity, as it is the prime motivation for outdoor activity.

Kraus (1971) explains the numerous and diversified means by which the rich can meet their recreational needs. This is evident in the increasing numbers of so-called country clubs that offer various sports facilities to the middle class families of the United States. Members further tend to join community clubs, which provide group trips by sharing the costs amongst the members.

> "...such clubs operate their own planes and provide varied excursions throughout the year. Among the very rich, when ski resorts become overcrowded, the solution is to buy your own mountain and develop your own ski center, with members of private associations building their own homes and maintaining exclusive and tightly closed social groups" (p.297).

It is certainly the case in Cairo that most affluent groups have a wider range of habitats to choose from, ranging from inhabiting residential areas to the choice of recreational and social space. Lozano E. (1990) explains that the more affluent can afford to change

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[13] See concluding part of this chapter's introduction.

lifestyle and habitats at will, in contrast to the less affluent groups who occupy areas undesired by the dominant groups and who need to be highly adaptive in order to survive within the limited choices they are given. Higher income groups might then tend to move to the periphery, their erstwhile quarters re-inhabited by lower income groups with the associated deterioration and negligence of buildings. This pattern has earlier been traced within the transactions that took place throughout the evolution of Cario[14].

It is clear that the Cairenes' adaptations are partially determined by prior interactions with space. These familiar interactions one can assume to have conditioned their behaviours and preferences and result from their first hand experiences with both private and public space within Egypt. This case can be witnessed in two main reflections existing within the Cairene psyche.

The first reflection deals with the use and building of walled resorts along the Mediterranean coast and bordered private clubs, which reflect the segregated social and recreational lifestyle. The construction of these resorts along the Northern coast (El-Sahil El-Shamali) is ongoing and denies the existence public space and the public's conception of space utilisation. The older beaches are located along the coasts of the city of Alexandria, created decades ago, are considered as the last of the more public beaches existing within the city. Similarly, the second reflection appears in the wide spread use of the 'Corniche'[15]. The Corniche therefore reflects 'the' main public and open urban waterfront areas left to visit within Cairo and Alexandria and are a dominant feature of Egyptian outdoor lifestyle. Both reflections represent two contrasting Egyptian social and recreational phenomena and also represent the configuration of private versus public space. In conclusion, Cairene perceptions are afforded by how the environment is shaped particularly the Nile waterfront, which has consequently confined perceptions. Lang (1987) further confirms this;

> "The environment in which people are socialised shapes competencies, because what we know and what we learn to look at are shaped by what the environment affords us" (p.103).

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[14] See **Chapter 10**.

[15] See **Chapter 4**, for further elaboration on the term 'Corniche'.

This suggests that Cairenes' visiting locations and how they use space reflects differences in the manner they recreate and socialise. The discussion here illustrates the existing situation of private versus public configuration of space reflecting the lack of variation existing within the urban environment.

Environmental designers should approach the waterfront and other public areas with consideration of the population's social requirements. Meanwhile, although sports clubs to a certain extent satisfy the social/recreational motivations of club members, they impede club members in construing the waterfront in terms of its social affordances[16]. Therefore, the club members' social motivations need not be required to adjust to the waterfront configuration. That is to say that they are not in need of alternative social space due to both their satisfied social needs and for the lack of perceived social affordances in public space and along the Corniche. Furthermore, this concludes that club members do have the motivation to socialise in outdoor space, but they do not perceive the Corniche as affording this opportunity. Nevertheless, waterfront areas within Cairo can serve the need for social interaction, particularly for the less affluent. However, the waterfront is not the sole open area that can afford this type of behaviour, but the results have suggested the urgent need to provide more public areas on a broader urban domain for the purpose of satisfying this behaviour. This suggests relative considerations to be made by decision-makers and designers to allow for more variation along the waterfront in order to create places that may encourage and afford club members to socialise and use the Corniche.

On the other hand, the waterfront to the non-club members is considered as a public meeting place, which in turn helps them to utilise this space for socialising. This in turn concludes that both groups have been shaped by what the environment has afforded them, whereas each group have construed the waterfront differently shaped by their previous experiences with the environment therefore determining their different needs from the place. This confirms that previous experience and different types of involvement within the environment govern perceptions and behaviours, which is a fundamental aspect of the participatory approaches.

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[16] Affordances here should not be confused with the biological affordances mentioned in **chapter 1**, as they are more subjective – depending upon people's motivations, values, perceived rewards, etc.

11.1.2.C Transforming Adaptations between People and Places

The other remaining unanswered question, is *how should we create this variety?* The answer to this question is not a simple one by far. Yet, as the approach of this research observes Man and Environment as a holistic unit, the criteria for defining the physical aspects of place may simply take place by observing the transformations taking place within the context. This assumes that it is important to observe the needs of the users of the waterfront. Indeed the public has physically transformed many patterns of activities in Egypt in order to satisfy their needs, taking as an example the itinerant tradesmen with hand-drawn carts and kiosks that usually appear when people tend to visit a place. This has appeared in old districts of Cairo and again appears along old as well as newly built bridges and flyovers, providing food and snacks for the visitors.

Itinerant traders selling fruit and vegetables within the city, reflect the lack of a level of organisation in cities of the Middle Ages. Apart from a number of Greek and Roman cities, the cities that grew from around AD 500 to AD 1500 were not in a true sense planned (Gehl, 1987). They developed where there was a need for them, mainly shaped by the residents of the city aside from military reasons. This phenomenon did in fact exist within the old city quarters of Cairo and, to this very day, appears in the form of kiosks and cart-traders, which are answers to 'professional' adaptations. The stalls and markets that were located within the city can sparsely be spread with donkey-drawn carts. In turn, the vegetable stalls have now spread throughout residential areas. Indeed this phenomenon has remained from the Medieval City, but the evident current widespread of this phenomenon reflects the lack of planning influence within residential zones.

In the earlier cities, these phenomena did not develop from professional planning, as it is known today. Rather, they evolved through a process that often took many centuries in order to reach their present states. This evolving process allowed for adjustments and adaptations of not only the physical environment and city functions, but further and equally allowed the inhabitants to adjust their behaviours and lifestyles.

Today various behaviours of people are witnessed and further need to be analysed. Taking walks along the bridges is widespread along certain bridges, particularly those

that contain wider sidewalks. Unfortunately the width of the Corniche sidewalks currently do not accommodate for the current numbers of people who at times bring along their own chairs and food. Designers should either invite or deny the existence of hand drawn kiosks according to the requirements of the area[17]. This therefore depends upon the situation of the place at hand, as in certain central areas this scene may not be appropriate, depending upon the level of crowding with respect to the width of the walkways. This would assume that some form of trader licensing and spatial provision is required along the length of the Corniche.

Therefore place and people should adjust according to a multitude of their potentially varying experiences within urban space. However, planning policies during Medieval times did not effectively exist so as to control these transformations. Indeed it is not suggested here to leave places as they are for the public to control, as we live in the 'planning age'. It is thus suggested that professionals be required to observe and examine peoples' behaviour before implementing an over-developed design strategy.

The above argument suggests the notion of places that learn, particularly by observing a variety of activities that take place there. This would also suggest that design strategies should be flexibly created in order to enable a specific behaviour and be able to evolve in order to suit this particular purpose. Areas should not be set out to be permanent by the time the design is constructed. Here the design process and its resulting places take a more holistic and evolutionary nature and accommodate to the changes taking place in human behaviour and should therefore be more dynamic. A poor design is therefore one that deals with aspects of physical space and human behaviour in a static state. Physical space and human behaviour not only determine each other in a fixed moment in time but must also be open to the acknowledgement that both change across time. That is to say that behaviour, place and time are elements of a successful long-standing design approach. This suggests that designers should acquire the legal and professional ability to constantly manipulate places. They should further learn how to observe places and how people from a variety of backgrounds use them. It also suggests that communication links between research and practice should be enhanced. In total, this

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[17] The later proposed design framework shall argue that within a specific location, the requirements of the individual places should all be considered in relation to one another.

would reflect the Transactional approach not only for determining changing behaviours but can also guide the orientations of the design and planning course.

11.1.2.D   Control of Activities

It is also important to note that group activity varies from situation to situation. In discussing the role of public space, it is clear that the nature of the environment restricts certain activities, thus requiring people to adopt alternative modes of behaviour in order to achieve a satisfactory balance to places. The type of activities and the frequency at which they occur is considered here as the criteria for the success or failure of that place. In this light, concepts such as crowding, segregation and privacy can be represented as a restriction of activities and is considered as a result of the imbalance or loss of the individual's control on the place. This follows Canter's (1975) assumption relating to privacy:

> "The use of space, as an integral part of the control of both verbal and non-verbal communications, facilitates the successful presentation of the self to the people who make up an individual's world" (p.163).

Consequently, this would achieve the objective of controlling the relationship between the "individual" and the environment. Much research applied on the built environment and human behaviour has underlined the importance of social factors in investigating and predicting how interactions take place in public areas and buildings. To suggest that design will have particular behavioural outcomes without considering the predisposition of a population is highly controversial. Providing no change occurs, if there is no popular intention to participate in a certain activity, then it is unlikely that the behaviour shall take place, no matter how coercively the environment is designed (Lang, J. 1987). Therefore the assumption that design may lead to change might only take place only by prior knowledge of the motivations of a population.

In this light, the research has demonstrated that social activities in outdoor spaces are an integral part of Cairene lifestyle. The opportunity to meet friends outdoors is considered as the dominant aspect of Cairene social expectations, particularly within urban space. Therefore this form of control may be helpful as a guide for designers in determining

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required behaviours. That is to say, if the environment restricts social activity, designers should attempt to modify the place in order to allow this behaviour to take place.

11.2   Theoretical Conclusion: Variation and Adaptation

The above discussions suggest that in order to enhance interactions, environmental variation is required, which would have the added benefit of further diminishing segregation. It would also challenge accustomed behaviours and consequently create varying types of outdoor activities. Furthermore, both the implications of variation and theories relating to adaptation have been helpful in deducing a conceptualisation of space, which are collectively deduced from both conceptions. **Figure 11.1** and **figure 11.2** attempt to create particular goals for designers to achieve. The equation introduced here (see **figure 11.1**) is originally derived from **figure 2.2** within **Chapter 2**.

More Variation	$=$	More freedom in choosing the desired behaviour	$=$	Facilitates a higher level of compatibility between various people and place	$=$	More urban spatial equality
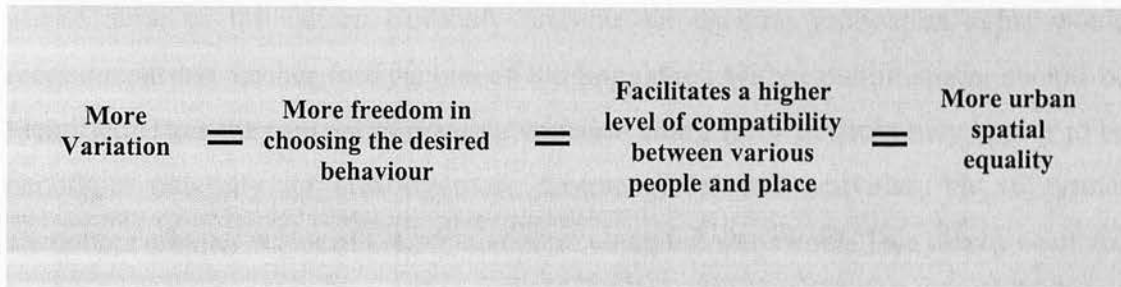
Figure 11.1: Formula illustrating that higher level of variations increases the compatibility between people and places. This in turn further provides more choice and public equality.

This equation presents a model for increasing the opportunity to make places more compatible for people from different backgrounds having different needs. This conceptualisation arises from the reasoning that a higher level of variation in the environment increases the level of choice and therefore provides a more proactive platform for adapting to the environment. Underlying the ability to choose alternative behaviours is the increase in urban spatial equality, with the greater ability for different groups to choose the desired place configuration in order to participate in desired activities.

Furthermore, **Figure 11.2** specifically highlights the main results relating to people and context and the objectives of the framework. The upper half of the diagram illustrates the outcomes of the research, which results from a less compatible situation between man and the environment. This situation results in more rigid and rather more confined interaction with space. The bottom half of the illustration suggests a need for a design

framework that would allow for more variation to take place, therefore for more interactions to take place in the environment leading to greater pan-social interaction. This would also allow for the greater opportunity to choose appropriate behaviours. In turn this would allow for greater compatibility between man and the environment.

Therefore a design strategy should incorporate a functional and social approach within its physical presentation in order to allow or impede certain behaviours. That is to say that it is possible to direct a people towards certain activities through physical arrangements such as inward or outward seating arrangements dispersed or grouped kiosks etc. This would therefore make it possible for the design to contain facilities that appeal to a large sector of the population or to certain groups. But this is the limit to how environmental designers can affect the social lifestyle that may develop within a public area, as the design can only promote an existing motivation. This would recommend that further motivations of the population within public space, should be identified. Thus the concept of creating variation along the waterfront may appear to be beneficial not only for creating more diverse places and activities, but to further encourage a larger sector of the population in using the waterfront. This can be achieved by determining the more appealing and appropriate activities along the waterfront and within other public areas. This in turn may help as a guide for designers to regenerate public areas along the waterfront.

Thus the study here attempts to highlight how physical conditions along the waterfront can promote, maintain or impede particular behaviours. In contrast to the more functional approaches of a physical framework, this outlines the conditions that are necessary for the more deeper and meaningful contacts.

Therefore various activities along the waterfront and social behaviour must be viewed on several levels. The prerequisites of individual areas together with the varied interests and needs of different groups should be accounted for. In this case urban design can be used to impede or facilitate a desired activity. This can be implemented through not creating boundaries, as private clubs tend to do, but by the use of particular design configurations and architectural artefacts.

HUMAN		CONTEXT
Different patterns of behaviour and the need for out door social activity. Confined perceptions and behaviours to particular areas. Social-class perception of space.	Rigid interactions resulting from Private and Public space.	Lack of Variation along the waterfront and within Cairo. Lack of Public Space. Centralised activities.
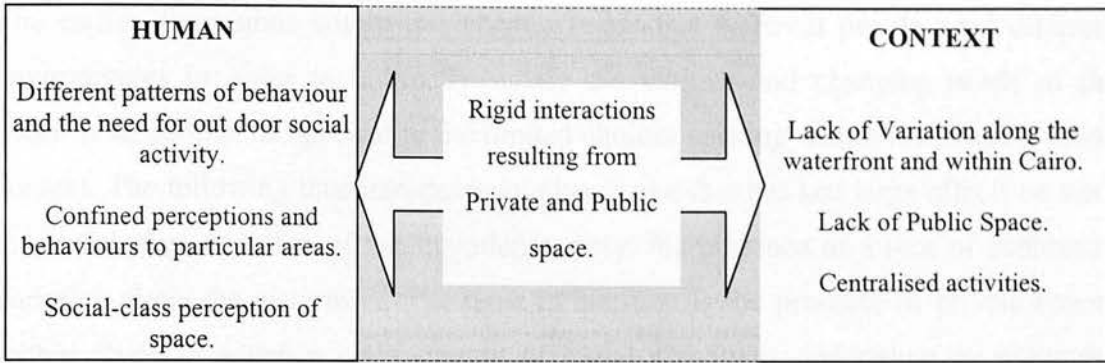
Less Compatible situation
between people and context
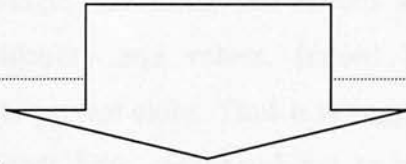
More Compatibility between
different people and context

HUMAN		CONTEXT
More choice and outdoor opportunity to interact.	Create design framework that allows for more variation hence, more interaction	More Variation in type of space
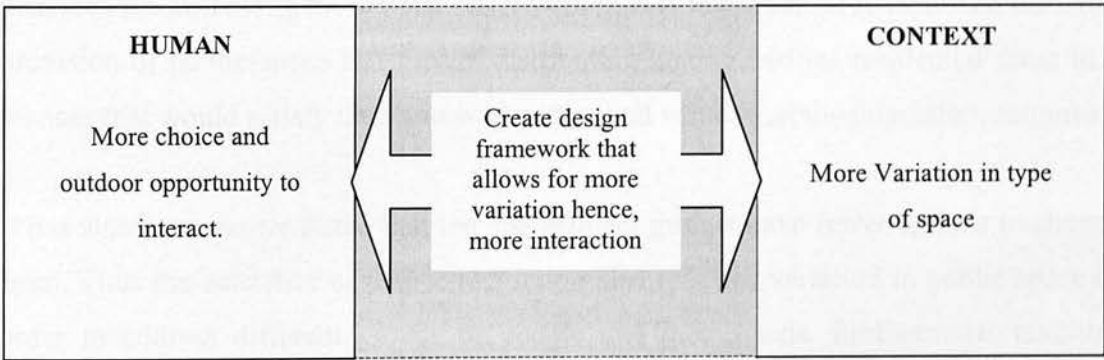
Figure 11.2: Diagram illustrating the relations between the main outcomes of the research and the objectives of the proposed design framework.

11.2.1 Counteracting Segregation by Creating Environmental Variation

The earlier discussions within this chapter imply that different people need different environments in order to indirectly satisfy the various and changing needs of the majority of people, as opposed to the limited choices existing within the existing urban context. The following thus introduces another theme that has had large effects on both the social class structure of the Egyptian society: the presence of a lack of contextual variation along the waterfront. The issue in question is the presence of private spaces within Cairo in which a large amount of social activity is undertaken by particular classes.

The importance of private space not only lies in meeting interpersonal and social needs, but also in symbolic messages connoting self-esteem and affiliation needs. These messages reflect status, identity and values. Indeed large cross-sections of the population do not affiliate to private clubs. Thus it is suggested here that various areas along the waterfront can vary from neighbourhood to neighbourhood, hence partly reflecting various symbolic and socio-cultural values. The existing areas along the waterfront area cannot solely satisfy these goals in comparison to the population densities situated along the waterfront. However, it is important to recommend the extra provision of public space and further distribution among various residential areas in a manner that would satisfy the various identities and values that the population acquires.

It has also been earlier stated that the less affluent groups have fewer options to choose from. Thus the existence of choice restriction also requires variation in public space in order to address different groups of people and their needs. Furthermore, land-use segregation has affected both the social and physical urban phenomena and leads to zones of increasingly homogeneous recreational and social use. This has lead to the decline of inter-social behaviour and activity.

Diversity in the environment here attempts to satisfy a variety of groups acquiring a multiplicity of needs. "Diversity is the key factor in maintaining flexibility and adaptability in a system" (Lozano 1990 p.143). Public areas should particularly satisfy the demand for larger numbers of people who have less choice in places to visit. In Cairo, public space occupies small and scattered areas within the city. Weekends and

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festivals witness over-crowding of the public zoo, not for purposefully viewing animals but for it being one of the last affordable places to visit.

Yet the development strategy within Cairo seems to threaten diversity as it seeks to propagate more homogeneous residential areas. The creation of the new high-class residential areas earlier mentioned mirrors the U.S. example of creating clear spatial distinctions. "In the United States your address is an important cue to status (this implies not only to one's home but to the business address as well)" (Hall, E.T. 1966 p.129). Therefore the socio-economic demands are seen to curtail the existence of diverse environments.

Reflecting upon ecological systems, diversity depends upon a variety of groups and the level of equality among those groups (Eugene P. Odum 1969), within urban systems this can be translated into social equality (Lozano E. 1990). Creating diverse places affords a wider range of opportunity for a variety of groups to socially interact. This diversity can be achieved by addressing the needs of different groups inhabiting the waterfront area. The waterfront here is considered as the backbone for public social and recreational activity, where every part develops according to a model which allows a variety of places to differ, not only in their physical appearance but by also promoting variations in activity. It is important to indicate that the waterfront here is not to be considered as exclusive to a particular group or residents of a particular place. The main intention is to create a socially heterogeneous waterfront addressing the multiplicity of the Cairenes' needs and further addressing the various social classes. A more diversified urban environment attempts to limit the trend of creating homogeneous and segregated social patterns that are currently prevailing in Cairo. This variation along the waterfront would not only address a multiplicity of groups but it would also prevent the waterfront from taking a more monotonous nature. Increasing the diversity of public space does not only counteract the widespread trends of segregation but also maximises the richness and quality of the urban environment.

11.2.1.A   Objective 1: Creating Variations of Space

The research has highlighted two contrasting environments with clear physical distinctions between them (see **chapter 4** and **chapter 7**). Two polarities are visually

apparent in Cairo, one relates to the old / newly built areas within Cairo and another is the central / peripheral configuration of Cairo. The first polarity embodies the existence of the old city areas, with narrow streets, traffic, and scarce open space. Old building styles usually appear with high population densities containing narrow views and are far from the central and more modern parts of the city[18]. These places basically exist far from central areas of the city and may at times be empty and in other instances describe highly populated areas inhabited by the lower classes. These old areas may also be descriptive of unpopulated rural areas existing to the far North and South along the waterfront where no night lighting exists.

The opposing and more contrasting environments are the more modern areas, containing shopping facilities and which are easier to reach as they are centrally located where commuting is easily facilitated to these central areas. Wider views are comparatively more common within these areas. Furthermore, the contrasts between private and public spaces add on to the numerous bipolar situations existing within the city, having limited variations between these extremes. Thus Cairo in general witnesses many dichotomous and contrasting environments with limited variations in space. Simply speaking, though the public is currently extensively using the Corniche, decision-makers have not approached it as one of the final resorts for out door space, particularly within central areas of Cairo. This is as the waterfront can partly accommodate for the required variation in recreational/social space.

Indeed many experiences can be granted from within the urban context. Places that allow for greater urban richness, complexity and choice would reflect an increase in social contact. Enriching diverse experiences for individuals is here considered as a main goal for achieving a rich urban life, as Réné Dubos (1967) wrote;

> "One can take for granted that the latent potentialities of human beings have a better chance to become actualized when the social environment is sufficiently diversified to provide a variety of stimulating experiences, especially for the young. As more persons find the opportunity to express their biological endowment under diversified conditions, society becomes richer in experiences and civilisations continue to unfold. In contrast, if the surroundings and ways

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[18] See **figure 4.2, chapter 4** and **fig 10.1, chapter 10**.

of life are highly stereotyped, the only components of man's nature that flourish are those adapted to the narrow range of prevailing conditions" (cited in Lozano E. 1990, p.135).

This would suggest that in more diverse environments, people could benefit from a wider range of experiences. Furthermore, it confirms our proposed argument as it suggests that if one looks at the environment in terms of the variety of behaviours it affords, one might determine why different groups differ in perceptions and needs. Only then could one indicate the particular requirements relating to interaction in public areas. One can be certain that different people cannot perceive all affordances within a particular environment. The affordances, even though perceived, may depend on various variables determining the nature of the people involved, such as their motivations, experiences, values, perceived costs and rewards (Lang J. 1987). Thus an affordance does not exist until it is recognised. It is an internal recognition of the potential for any object to enhance circumstances.

The planning and design of public space can largely create a recognisable variety of outdoor experiences. The choice of materials and colour may help in creating noticeable variations in visual experiences, but it is equally possible to create different places by introducing varying patterns of activity. This is as the results constantly highlighted that various interactions with places govern people's behaviours and perceptions, thus following more of a participatory approach. After highlighting the importance of the Corniche area, it seems important to suggest that designers need not only create new public areas along the waterfront, but should also allow for various types of places to become distinguished, varying in material, colour, location and most important of all, interaction.

The goal here is to create conditions for desired outdoor activities for the purpose of generating more lively places accommodating various types of interactions. The basic conditions needed to create these places as has been earlier suggested by the research, initially requires the reduction of traffic, creating accessible spaces, meeting places and close access to the water etc[19]. This would facilitate the public's use of these places and

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[19] See **Chapter 7** and **Chapter 8** for tables relating to liked places along the waterfront.

would further allow for a greater fit between people and their required needs in order to utilise these places.

11.2.1.B   Objective 2: Identifying Unique Aspects of Places.

Day (1999) describes the importance of the provision of public space and further suggests the significance of creating diverse places by determining the unique qualities of places.

> "A return to greater public provision of public spaces will not resolve these perceived dilemmas of privatisation. To enhance accessibility, diversity and so on, we should focus on characteristics of particular space experiences consistent with these objectives" (Day, K. 1999 p.161).

This indicates that it is important to abstract the desirable qualities of individual places along the waterfront. Thus each place should be uniquely studied in order to derive its desirable quality and character with reference to how it could be used. But it is reasonable to emphasise the association of this objective to the general conclusions of the research, relating to the waterfront. The issue of social segregation and the lack of variation have both been raised as its main contextual problems. Both these issues reflect how Cairo's public space is utilised. These results have stressed the fundamental aspects relating to Cairenes' perception and behaviour within places, which are a result of the lack of public space and the further lack of variation in different spaces within the city. These findings suggest that various areas along the waterfront should be separately researched in order to determine individually unique aspects of these places, thus creating more diverse environments.

Thus the environment can consist of various behavioural settings varying in affordances recognised by different people. Different patterns and designs of places may vary in material, texture, colour, form etc., and therefore encourage or impede a particular affordance. These affordances can either promote a certain activity or at least connote a particular symbolic gesture. It can therefore be said that the environment can provide both physiological and socio-cultural affordances. This would suggest that the environment is construed through the way it can be utilised. This again implies that

people's previous experiences with the environment, determine how people may further utilise places to which they are newly introduced[20].

Provided convenient social space does not exist, people are compelled to be highly adaptive in their social activities, by socialising within their homes or neighbourhood streets. Nevertheless, Lang (1987) points out that the ability of an individual to adapt reduces, the more restrictive and more oppressive an environment becomes in terms of behavioural opportunities. This restriction can lead to high rates of mental illness (Klee et al. 1967). It has also been hypothesised by Lawton (1977) that when the built environment requires fewer adaptations from an individual then it becomes too comfortable and less challenging and leads to the decline in the individual's abilities. On the other hand, more challenging environments lead to the learning of new things, by pre-requiring the adjustment of the individual's behaviour. At times these challenging environments may reach a point to cause the individual to adapt to stressful situations which may exceed the individual's adaptive ability (Burton et al. 1982). All of the above suggest the importance of creating individually unique places, which would correspond to more behavioural opportunities and contain a wider range of interactions in order to create diversified and richer experiences. The above discussions have attempted to highlight the need for variation based upon the fact that Cairo has limited and invariable public space. Variation in the environment would individualise how Carienes currently construe places and further enrich a multitude of experiences, visually, perceptually and behaviourally. It would increase the predominantly limited existing perceptual stimuli and further enlarge the range of adaptational experiences. This in turn would reduce the highly stereotyped conditions of Cairo. This discussion consequently suggests reducing the existing centralised situation of the urban waterfront (see **fig 11.3**).

As discussed above, a considerable lack in public space exist and most of those existing contain few functions and contribute to the monotonous condition along the waterfront. These areas usually consist of long and narrow strips of walkways with side rails and are a common case along Cairo's waterfront. Narrow strips of walkways are widespread

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[20] This again confirms the importance of the Participatory approach, as it is based upon the notion that the environment is perceived according to the various activities that can be afforded and previous experiences with the environment.

and are distinct for their mono-functional appearance. However, the Cairene residents still tend to visit these waterfronts during the evening hours.

Due to the existing physical configuration of the waterfront and people's varying lifestyles, it is evident that regenerating the Nile edges in Cairo needed. This should be achieved by allocating and providing various functions to the existing water edges that would attempt to address the varied behavioural expectations of the visitors to the Corniche. It is also necessary to further enrich how people perceive the waterfront. **Figure 11.1** is a hypothetical illustration of the existing monotonous centralised situation of the waterfront juxtaposing the required situation of the waterfront, which consists of a more dispersed and varied configuration.
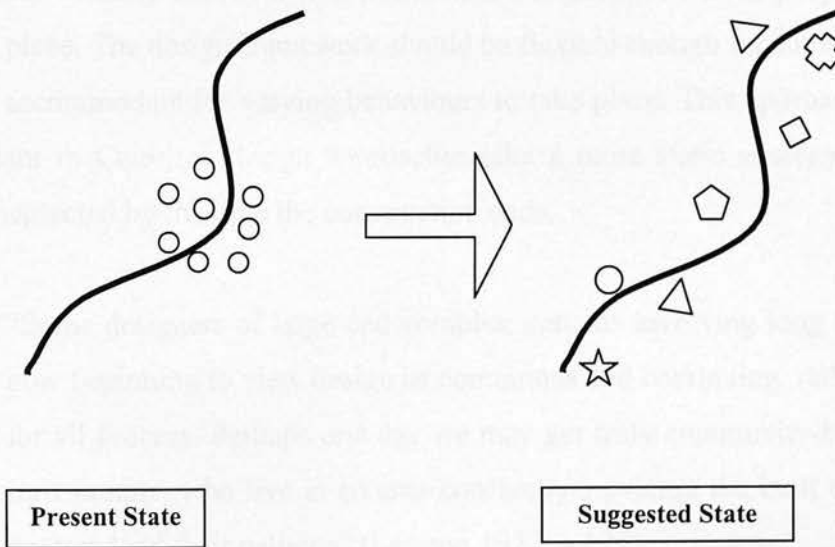
Figure 11.3: Hypothetical representation of the urban waterfront in Cairo.

11.3   Recommendation 1: Creating a Flexible Design Framework

This final part of the research suggests a flexible design framework for the purpose of creating more varying environments. This is based on the conception that it is difficult for the public to manipulate the fixed physical environment, therefore a variety of behaviours will result in an attempt to adapt to a particular environment. Therefore designs should not initially attempt to restrain behaviour, rather take a more evolutionary nature by initially accommodating various types of activities. The design should later attempt to restrain or promote a particular activity depending on how people interact with the place and the individuality of the place. This individuality can be achieved by determining the unique aspects and activities taking place within a place in relation to other points of attraction.

This would actually illustrate that places and designs learn from people's behaviour within a place. The design framework should be flexible enough for future alterations in order to accommodate for varying behaviours to take place. This approach is definitely not evident in Cairo, as design approaches take a more static strategy as places are usually neglected by the time the construction ends.

> "Some designers of large and complex systems involving long time-scales are now beginning to view design as continuous and continuing, rather than a once for all process. Perhaps one day we may get truly community-based architects for example, who live in an area constantly servicing the built environment as doctors tend their patients" (Lawson 1977, p.125)

The notion of 'flexible' and adaptable environments was popular for some time within the schools of architecture. This notion has previously been criticised within architecture as creating bland, anonymous and neutral buildings that fail to provide sufficiently positive urban environments (Lawson, B. 1997). Habraken (1972) and his followers pursue this model and go far as to suggest that architects should provide design structures by only providing shelter, support and services. This would leave future users free to create their own homes and express their own identity by arranging kits of parts that fit within these structures. These ideas remain largely theoretical and need to overcome many technological, political and economic barriers for implementing

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genuinely adaptable and flexible buildings. It is important to highlight that it is not suggested here to create physical architectural artefacts that the users find easier to manipulate. Nevertheless, our proposition implies flexibility in the design strategy that would acknowledge the responsibility of designers and decision-makers to overview previously implemented designs. The American architect John Johansen (Lawson 1997) suggests that we should write programmes that would accommodate for future changes to the present states, thus confirming that the design of buildings should be capable of changing. A built example of this is Richard Rogers' design to the Pompidou Centre in that it incorporates a technical solution that involves many moveable components and partitions that would accommodate for future change.

However, this study deals with a more out-door urban context, which is a far different matter than the more fixed forms of building structures. Furthermore the waterfront context deals with a wider range of users and thus further stresses the importance of flexibility within our suggested design framework. This is in order to address the various backgrounds of the users. It also highlights that designers should acquire a further extended capability to update and redesign places in order to correspond to the users' changing needs and behaviours. This may also require moveable and reusable structural components.

11.3.1 The Design Process and Flexibility

Other factors that highlight the importance of having a flexible design framework are related to the nature of design solutions. Lawson (1997) suggests that there are inexhaustible numbers of different solutions to any design problem. Furthermore, another issue involves the fact that there are no optimum solutions to design problems since all solutions often involve a compromise. In other words a designer's solution is often optimised by suffering some losses elsewhere.

> "There are no established methods for deciding just how good or bad design solutions are, and still the best test of most design is to wait and see how well it works in practice" (Lawson 1997, p.123)

Therefore design solution can never be perfect which further implies that the required design framework should attempt to observe from its earlier solutions. Furthermore, as

design solutions are further observed, it extends the designers' knowledge, which enables both decision-makers and designers to develop their ideas in a more examinable way.

Underlying the ability to examine earlier designs is the fact that design solutions should have the potential of not only solving solutions but to further create new ones (Lawson 1997). This fact should always be acknowledged among decision-makers and designers. This design approach insinuates that design is an endless process that acknowledges the fact that the designer's job is never really done and can possibly be modified to do better. However, at times after considerable experience and judgement, it seems plausible to define the end of a design process for a specific time. This is due to the realisation that there is no longer much reasoning to further make significant modifications and improvements to the previous solution. This does not mean that the design has reached its optimum solution at that time, but it may be the fact that it is the most convenient solution at a specific moment in time.

Finally, a problem that seems to defy the suggested framework is that designers commonly approach their proposals in terms of what should and what should not be. This conceptualisation restricts any framework to a more linear and goal orientated approach, which is rather static in its objectives. As a result, the time dimension is neglected causing the framework to inherit a more static nature, with the misconception that design is an end product. This contrasts with a researcher's stance, which constantly attempts to determine how and why a particular phenomenon occurs. This also implies that a vital communication link between researchers and designers should be enhanced, an issue widely raised within the research literature.

This above discussion and proposed framework also suggests that finding and solving the problem emerge together, in contrast to the more traditional linear school of thought, where one part is logically a result of the other. This suggests that the introduced framework is less linear and therefore supports the diagram presented below in **figure 11.4**.

11.3.2 Design Strategy

The results have indicated that sports club members have less desire to visit the waterfront. The environmental designer's task is to encourage various groups of the population to use public space, thus addressing the need for inter-social interaction (see **chapter 10**). This can be implemented not only through specific design details but also through creating a multiplicity of varied areas that may prompt different cross section of the population (age, gender, class, etc.) into using the waterfront. This task is by no means as easy as it may sound. To achieve this target the suggested flexible design framework should incorporate not only the physical factors of space but also include the element of time.

Therefore the most appropriate urban design framework incorporates an adaptation approach, hence including the ability to observe the latest adjustments of people to place achieved through observing public interactions within relevant contexts. It should be made clear that flexibility does not only relate to the physical configuration of the place but it also addresses the design strategy. Here, the design-strategy enables places to 'learn' from the differing interactions of people within different places. As design strategies usually and constantly attempt to design ahead, the notion of being able to predict interactions seems to make less sense. This suggests that places and people should evolve together without restricted preconceived assumptions about behaviour. In this case a design framework should acknowledge attributes of time and change, should never be fixed in a goal orientated manner and should require the ability to continuously change by adjusting places to people's changing behaviours.

Figure 11.4 presents a model for determining place configuration based upon the above argument that reflects interactions of people in place over an open period of time. This would address aspects of change and the fact that people evolve and adapt their behaviours to places. It also acknowledges that people are flexible and do not maintain fixed behaviours from generation to generation.
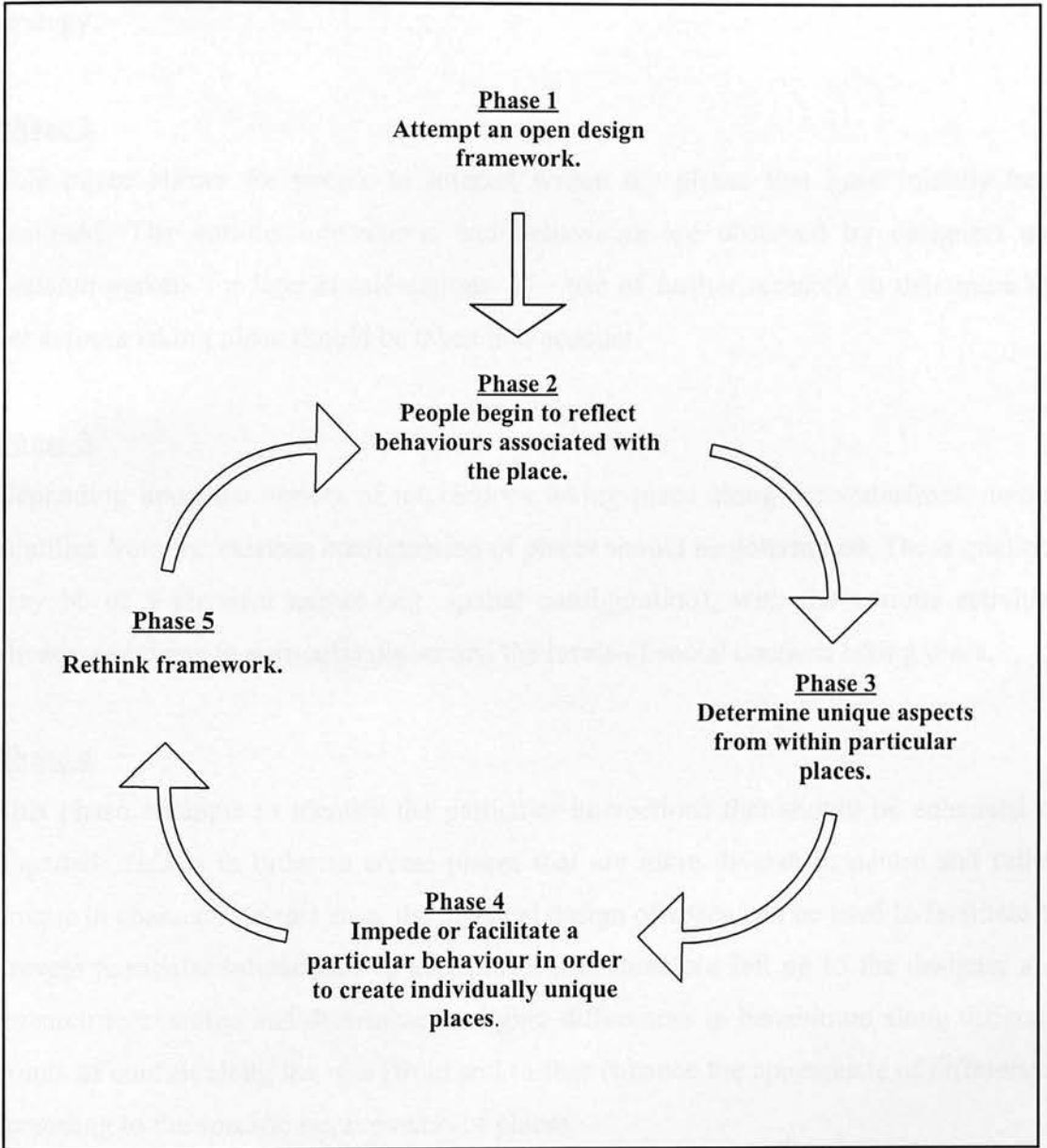
Figure 11.4: Design framework that attempts examine unique aspects places and of people's behaviour within places.

Phase 1

As a flexible outlook at a particular proposal initiates the design strategy, it acknowledges that change in designs should inevitably take place. This suggests that designs may not necessarily reach their final completion within the early stages of the strategy.

Phase 2

This phase allows for people to interact within the places that have initially been designed. The various interactions and behaviours are observed by designers and decision-makers for later considerations. The use of further research to determine the behaviours taking place should be taken into account.

Phase 3

Depending upon the variety of interactions taking place along the waterfront, unique qualities from the existing configuration of places should be determined. These qualities may be of a physical nature (e.g. spatial configuration), with the various activities already occurring in particular places and the levels of social contacts taking place.

Phase 4

This phase attempts to identify the particular interactions that should be enhanced or impeded. This is in order to create places that are more diverse in nature and rather unique in character. In this case, the physical design of space can be used to facilitate or prevent particular interactions to take place. It is therefore left up to the designer and research to examine and determine emerging differences in behaviours along different points of contact along the waterfront and further enhance the appearance of differences according to the specific requirements of places.

Phase 5

It is to be attempted in this phase to overview the various outcomes of implementing the previous design in order to rethink and make alterations to the earlier proposals. This would also be helpful in re-adjusting the designs to emerging changes in behaviours resulting from other environmental factors.

It is important to note the above diagram is a general overview of the framework, hence it may contain more stages inherent between the main points. Furthermore, the model

allows for the observation of various types of interactions to take place e.g. inter-social interaction (between people from various classes) and observation of interactions taking place between people and the physical configuration of place.

In order to create a more diverse and varied environment, the above framework should take place within various places along the waterfront. By observing behaviours within other areas along the waterfront the framework attempts to individually create unique qualities of places. This can only be implemented by cross-checking how areas evolve in relation to each other in order to create varying visiting points. **Figure 11.5** below attempts to show how designs should evolve by observing individual characteristics of places.

The illustration presents a moment in time where decision-makers observe the context at a stage of observation (pre-transformation of context). Within this stage interactions are taking place between people and the physical configuration of the place at hand. The designer should examine different places (places A, B, C, etc.) all in respect to each other. This examination relates to the particular behaviours emerging as a result of people's interactions within these places. The choice of the individual physical and behavioural characteristics of each place depends upon the existence or non-existence of similar characteristics within other places, thus following the design strategy in **figure 11.4**.

This procedure allows and acknowledges the influence of other added environmental factors upon individual contexts, which can later be considered within the following stages of observation (post-transformation of context). The places are then collectively considered as the design framework further allows for interrelated transformations to take place. As a result the choice of the individual transformations should evolve more individually, as it is the designer's task to determine the individually unique aspects of places and consequently promote them to crystallise. This suggests that designers should also have stronger communication links with researchers, as this would help identify the unique qualities of these places.
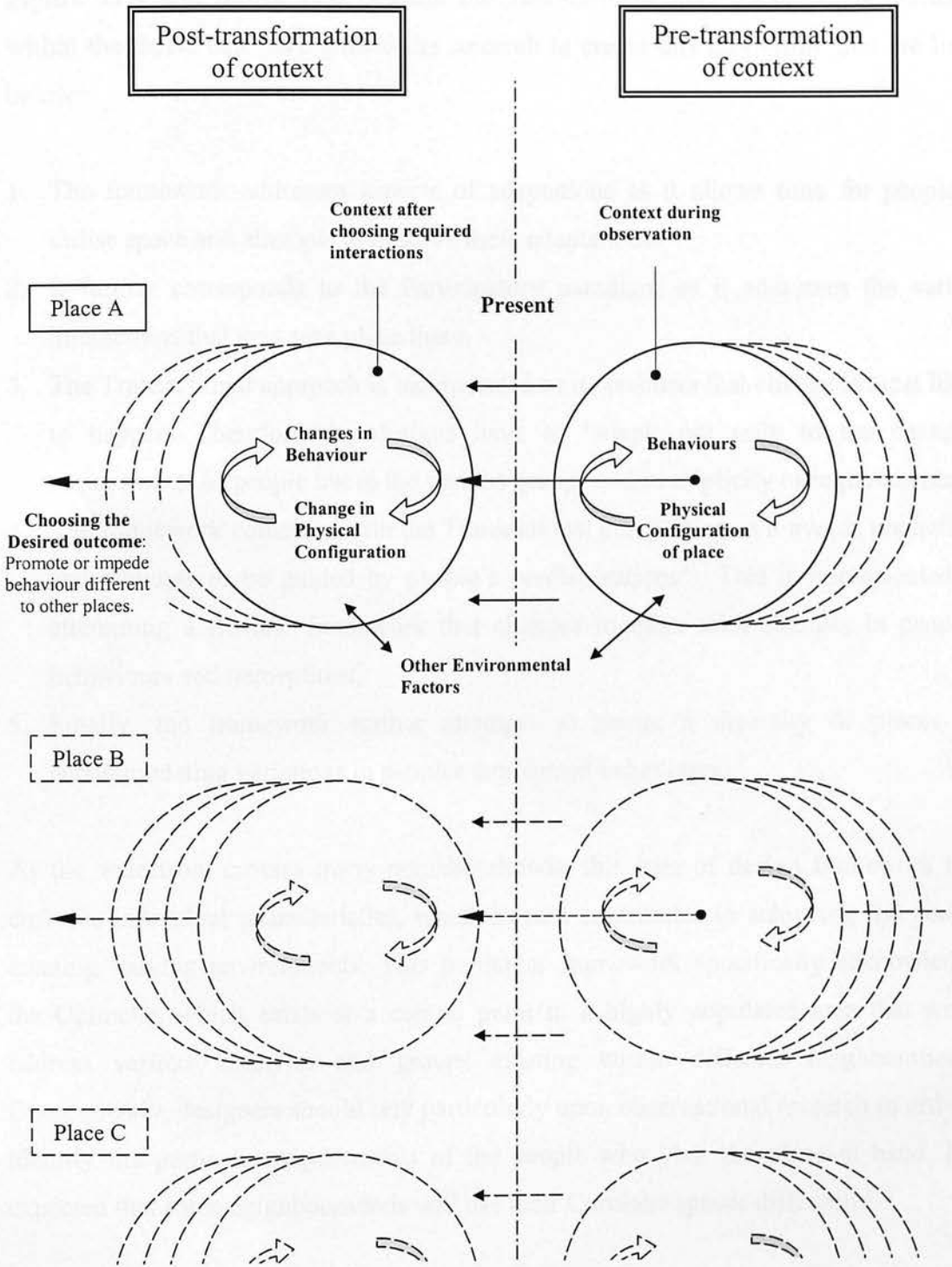
Figure 11.5: Illustration presenting how the design framework should individually be applied on different places in order to create more individuality.

Figure 11.4 and figure 11.5 confirm the various theoretical backgrounds discussed within the thesis that have guided the research to create this framework and are listed below:

1. The framework addresses aspects of adaptations as it allows time for people to utilise space and attempts to observe these adaptations.
2. It further corresponds to the Participatory paradigm as it addresses the various interactions that may take place there.
3. The Transactional approach is incorporated as it considers that change is most likely to happen. Therefore the designs have to 'adapt' not only to the changing requirements of people but to the various groups and multiplicity of requirements.
4. The framework coincides with the Transactional perspective as it avoids predictions and attempts to be guided by people's predispositions[21]. This is implemented by attempting a flexible framework that changes together with changes in people's behaviours and perceptions.
5. Finally, the framework further attempts to create a diversity of places for accommodating variations in peoples anticipated behaviours.

As the waterfront crosses many neighbourhoods, this type of design framework may embrace individual characteristics, which in turn contributes in achieving the goal of creating varying environments. This particular framework specifically acknowledges the Corniche, which exists at a central point to a highly populated area that would address various lifestyles and groups existing within different neighbourhoods. Consequently, designers should rely particularly upon observational research in order to identify the particular requirements of the people who visit the place at hand. It is expected that some neighbourhoods will use their Corniche spaces differently.

It is important to highlight here that the basic conceptions underlying the framework of the model are stated as a general overview. This indicates that this is not at all a finalised model rather a mere projection of the implications of the deduced results. Thus the above framework is considered as a primitive 'prototype', which suggests that more detailed research upon specific criteria relating to the model should be investigated.

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[21] See **Chapter 3** for description of Transactional research.

Specifically speaking, research determining the type and kind of potentially different qualities of the environment should be applied in order to achieve more varying environments.

1. The framework addresses aspects of adaptations as it allows time for people to utilise space and attempts to observe these adaptations.
2. It further corresponds to the Participatory paradigm as it addresses the various interactions that may take place there.
3. The Transactional approach is incorporated as it considers that change is bound to happen. Therefore the designs have to 'adapt' not only to the changing requirements of people but to the various groups and multiplicity of requirements.
4. The framework coincides with the Transactional perspective as it attempts to guide and attempts to be guided by people's predispositions, as these are interrelated with attempting a flexible framework that

11.4 Recommendation 2: Facilitating Participation and Social Contact through Spatial Variation

The research results identified many concerns relating to the waterfront that would facilitate more adaptations to develop within well-used and unused public areas which, if considered by designers, would convenience more interactions. The following attempts to create a guide for designers in order to improve the existing context of the waterfront in accordance with the research results. It is therefore important to note that the issues raised below are intentionally presented without specific design details, as these are left up to the designers' creativity. It is also important to highlight that the dimensions listed below are considered as a guide for designers in order to change the physical configuration of the context and for further maintaining variation within the environment. Furthermore, many of the dimensions listed below are interrelated and should be manipulated in a holistic manner.

The results of the research have covered different dimensions that can be used as tools in order to determine the type of variations required. As earlier mentioned within Phase 3 and Phase 4 of **figure 11.4**, variation embodies *spatial configurations*, *type of participation* and *level of social contact*. The three dimensions have been derived from both the model and the research results as they deal with man, environment and interactions (see **figure 7.5** and the paradigm categorisation of **table 7.3** and **table 9.2**). This part illustrates for environmental designers how both participation and social contacts can be used as tools for guiding the design of Cairo's public spaces particularly its waterfront areas.

At this point, the author found it appropriate to introduce the critiques that Gehl (1987) used to describe city design and planning and their impact upon the assembly or dispersal of people and events. These critiques are identified as; *to assemble or disperse*; *to integrate or segregate*; *to invite or repel* and *active or passive* and in our case relate to social contacts and participation. Furthermore, as Gehl's measures contain bi-polar descriptions, it was found convenient by the researcher to utilise them in order to create variant situations along the line of each bi-polar description. This is as it is required to guide designers to create various spatial configurations that would correspond to creating variations. Therefore, Gehl's critiques shall be considered, as

practical scales on which the 'participation' and 'social contact' dimensions can determine various types of spatial configurations required for addressing variation. The critiques are considered as the yardstick upon which environmental designers can attempt to articulate and determine required levels of variations. Thus the overall intention is to determine spatial configurations that would achieve variation by determining the requirements for social contact and participation within urban space.

Table 11.1 illustrates with the aid of Gehl's critiques (see far left column), the main facets that configure space, required to be achieved. The table highlights specific requirements from environmental designers that can be used as design guidelines to manipulate the spatial configuration of the place in order to respond to the different variations in participation and social contact. These issues are individually described below within the four rows.

	Spatial configuration	**Participation**	**Social Contact**
1	Assemble – Disperse	● Location of activities	● Locations for social contact
2	Integrate – Segregate	● Mix in activities	● Mix in social contacts
3	Invite – Repel	● Facilitate or impede activities	● Facilitating or inhibiting social contacts
4	Active – Passive	● Type of activities	● Level of social interaction

Table 11.1: Determining spatial configurations in relation to variations in participation and social contacts using Gehl's (1987) critiques.

Tables **11.2** and **11.3**, highlight the spatial requirements of places in relation to both public and semi-public spaces (e.g. restaurants and ticketed parks) respectively. They illustrate the independent measures used to describe public space and semi-public space. The descriptions highlight the various qualities of these types of spaces with reference to both participation and social contact. Though the measures listed within the tables are valuable for describing differences between both types of places, nevertheless it is important to acknowledge that closely following to the guidelines of the table may lead to more clear cut and individualised public and semi-public areas, another bi-polar situation. This can be overcome by attempting to create transitional zones (as shall later be described) between both public and semi-public spaces, in order to create an intermediary type of area that accommodates as a transitional space between both types of spaces. Therefore following the individual descriptions of the various dimensions listed within the tables, a further detailed description of transitional zones shall be elaborated.

Semi-public Space

Participation	Social Contact
Dispersed dispersed locations for activities	**Dispersed** dispersed locations for contacts – e.g. further along the waterfront
Segregated isolated activities – less mix in types of activities	**Segregated** confined social interactions – meeting close friends
Repel discourage activities	**Repel** more intimate social contacts
Passive passive participation	**Active** active socialising – meeting familiar people

Table 11.3: Spatial configuration of Semi-public Space in respect to Participation and Social Contact.

Public Space

Participation	Social Contact
Assembled assembled locations for activities	**Assembled** assembled locations for contacts – e.g. central area.
Integrated more people – larger mix in types of activities	**Integrated** mix in social contacts – meeting unknown people
Invite allow activities to take place	**Invite** allow more public contacts
Active active participation	**Passive** passive socialising – meeting new people

Table 11.2: Spatial configuration of Public Space in respect to Participation and Social Contact.

11.4.1 Critque 1: Assemble or Disperse

As many responses dealt with the convenience in reaching a particular location, therefore it is found necessary to propose that much public space should be well distributed around the city. The convenience of the waterfront can easily address this requirement as it extends in a north south direction within the city. The Corniche in this case is a natural space that can address the required dispersal of public spaces within the city.

However, as central areas are natural locations for people and activities to assemble, it is important that their spatial configurations are spacious in response to the large numbers of people visiting these areas. Crowding increases can also be minimised through the dispersal of activities, by providing other activity points remotely located from central waterfront areas with further and different opportunities to interact. Therefore a required level of dispersal of activities within central areas is an important task to be determined and achieved, as it can reduce the high levels of crowding witnessed during public holidays. By dispersing activities along different locations, crowding can be avoided through the creation of further activity points. This implies that areas remote from the centre can also help in reducing crowds as they can act as other focal points for assembling people and activities.

Similarly, as social interaction is considered an important behaviour within Cairene outdoor lifestyle, the distribution of public areas would allow for more convenient locations for social contact, thus reducing the need to resort to commuting for regular outdoor social interactions. The dispersal of social contact points along the waterfront would also satisfy the social requirements of different residential areas along the waterfront. On the other hand, assembly points for social interactions to take place occur as a supplement to the locations where particular group activities and events are also assembled. In this case social interactions require a rather different spatial setting, particularly one that responds to larger numbers of people. Therefore variation in the spatial configuration of the waterfront takes place by distributing or assembling locations for activities and social contacts.

11.4.2 Critique 2: Integrate or Segregate

Integrate here implies that various types of activities and social contacts are allowed to function together. Segregate refers to separate activities and social interaction between various groups of people. As activities are usually concentrated along central waterfront areas, it therefore requires that remote areas should also do their share of integrating groups of events and activities. Nevertheless, it is important to maintain other calm areas with few, even little functions. Therefore, maintaining and creating places with integrated activities and places with segregated activities can enhance variation in spatial configuration.

Social contacts are here treated rather differently, as they deal with the integration and segregation of various groups of people. This can be achieved by creating a variety of spatial configurations that maintain a level of privacy or intimacy particularly within semi-public spaces, such as restaurants and cafeterias or by the spatial design of a particular setting. The designer can create higher levels of privacy within public space in order to encourage other groups to use the waterfront, particularly regular club members. Semi-public areas can also be achieved within non-central areas and can develop along the narrow widths of the river as more passive activities already take place there. Integrating people within public space is also a requirement, thus public space must encourage a large cross-section of the society to interact within provided public spaces. This can be achieved by encouraging unique activities to develop within public spaces. It can also enforce the use of public space by restricting entry to private spaces within public space, as shall later be described. Therefore, designing places that facilitate or impede the integration of particular groups would in turn create spatial variations corresponding to the different levels of inter-social contacts required.

11.4.3 Critique 3: Invite or Repel

Inviting places within the city should be designed to allow activities and more public social interactions to take place, thus moving away from more private and quieter spatial settings. As buildings dominate the city structure, public spaces should contain a convenient level of openness, not only in space but also in views. Places containing wide views invite many people to visit the place, hence it can be used by designers as a

tool to encourage large or small numbers to visit a certain place. In turn this type of encouragement can be utilised to create public spaces with more or less inter-social contacts. This can be implemented particularly by designing spaces that offer for close interaction with the waterfront. Inviting' infers that people have clear sight of the location and activities that take place there, as this would tempt more people to use the place. Here, contacts between people take place more frequently and are considered to involve larger numbers from the public. In contrast places that repel should be designed with more intimate social contacts (e.g. between close friends), these spaces can be manipulated with less emphasis on being visually well identified.

This indicates that a variety of spatial configurations can be achieved by encouraging or discouraging activities to take place within space. This further illustrates that places that invite activities should allow for more public social contacts (less intimate social contacts). On the other hand, places that repel activities allow for more socialising between close friends to take place (i.e. intimate social contacts), hence maintaining a more quiet and intimate atmosphere for social activities.

11.4.4 Critique 4: Active or Passive

Activities can range from active to passive and require the designer's articulation in identifying the possible types of activities that may take place, thus following the design strategy that has previously been stated.

Sports functions are here considered as elementary active participations, encouraging a wide variety of recreational participation to take place. It is not suggested here to re-create sports clubs along the waterfront, but the encouragement of other types of recreational sports activities to take place unique to the waterfront would encourage more people to use the waterfront, leading to a further enhancement of inter-social interactions. These sports may already exist in the form of canoeing, sailing etc.[22], but need to be more open to the general public, rather than being confined to particular members of clubs situated along the waterfront. Active participation should take place

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[22] Canoeing takes place through club membership, thus denying spontaneous involvement in the activity. In a similar fashion, sailing only takes place by hiring a trip ride. Both deny the publics' actual participation in these activities.

in more spacious spatial configurations that are used by larger numbers of people. On the other hand, passive activities should be located within places that contain less crowding allowing for greater levels of active and intimate social contacts. In this case, walking, sitting, fishing, etc. can be considered as more passive activities and should avoid encouraging large numbers of people to get involved in more active involvement.

Public spaces should allow for social contact to develop between friends and groups (active contacts – involving familiar people and intimate contacts) and inter-social contacts to take place (passive contacts – involving more public contacts). That is to say that designers should create active or passive encounters by increasing or decreasing the level of contact between people. Establishing more contacts can be implemented by providing larger opportunity to meet – a prerequisite of public space, allowing for more social mixing and integration. This does not mean that contacts should be maximised within public space, rather enhanced on various levels. Space should be created in order to accommodate for a range of contacts, ranging from passive contacts – meeting unknown people – by promoting more spontaneous contacts, to more active contacts – meeting close friends – by prearranging a contact. This requirement needs a closer look at the point raised above – how space can be manipulated to segregate and integrate contacts. Here, spatial configurations should attempt to meet both requirements, not only for the creating spatial variation but also for encouraging other groups to use public space for casual encounters.

11.4.5 Transitional zones

The above discussion shows the importance of creating transitional zones for maintaining differences between public and semi-public places, in order to maintain the level of variation within the environment. The importance of this type of space lies in promoting variations in interactions to take place within space. It is suggested here that in order to minimise the 'polarised' situation of private and public social/recreational space, it is important to create transitional zones between both types of spaces. These zones would act as spaces acquiring intermediate levels of the measures listed within **tables 11.2** and **11.3**, creating an added type of space dissimilar to purely public and more private types of spaces with intermediary qualities. The transitional zones are set to satisfy two interrelated objectives, one relating to inter-social mixing and the other relates to creating variations between public and semi-public spaces.

It is important to highlight that in many cases the surrounding settings of the restaurants and cafeterias situated along the waterfront deny access and views to the water-edges. Their spatial nature is that of a bordered configuration, allowing sole access to the waterfront from within their spaces. Therefore, all the following illustrations highlight this issue and the required relation between public and semi-public spaces.

Semi-public spaces

Access

Public spaces
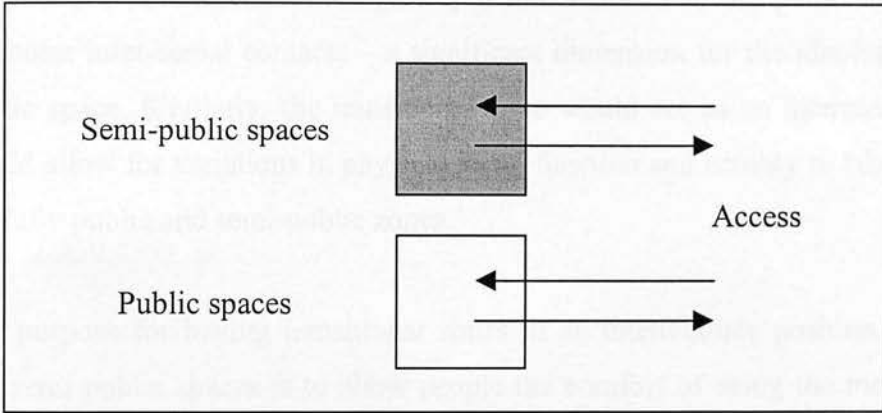
Figure 11.6: Hypothetical illustration of segregated access.

Figure 11.6 illustrates how access to both fully public areas and semi-public areas along the waterfront are completely segregated. **Figure 11.7** specifically shows three common examples of how particular settings along the waterfront are shaped. All three cases show how public space is in less use by people who go to restaurants and cafeterias along the waterfront. Access takes place here directly from the back roads to these places. This strongly inhibits public mixing and inter-social contacts to develop.

Case A shows how at times cafeterias and restaurants occupying water edges deny public access and use of these spaces. **Case B** illustrates a more convenient example, which presents how current developments are taking place along the waterfront to provide public access to the waterfront. Unfortunately access to both public and semi-public areas remain segregated within this case. **Case C** presents an illustration of how large stationary ship restaurants occupy the water, allowing public access to adjacent water edges but unfortunately remaining in isolation from public spaces. These types of restaurants deny views to the opposite banks. All three cases highlight how access is segregated, thus suppressing interactions between people and within public spaces. The three cases again reflect the many bi-polar situations of private versus public spaces witnessed within Cairo.

Figure's 11.8 and **11.9** show the required situation where entrances to these places take place within public space and from within various transitional zones. Transforming entry points from within the public areas enforces the use of public space for entry to the semi-public spaces. This allows and encourages more public participation and inter-social interactions along the Corniche's public areas. In turn, this encourages the notion earlier presented that addresses the significance for people to acquire new behaviours from the environment[23]. Consequently it forces people to use public space and further promotes inter-social contacts – a significant dimension for the ideological makeup of public space. Similarly, the transitional zone would act as an intermediate space that would allow for variations in physical form, function and activity to take place between the fully public and semi-public zones.

The purpose for having transitional zones in an intermediate position between public and semi-public spaces is to allow people the comfort of using the more private areas from within public space. This therefore reduces the level of exposure from more active, integrated and assembled areas of activity, less desired by private space seekers. This would in turn, preserve the unique qualities and attributes of both semi-public and public areas.

The functions of the recommended zones are to maintain completely public and completely semi-private areas and to further sustain variation along the sharp contrasts between public and semi-public space. This can be achieved through designs that create intermediary areas, which are open to the public, but may differ in function, elevation, boundaries, etc., thus achieving various levels of privacy. These boundaries should be flexible, neither completely private nor completely public, in order to act as connecting links. This would require changes in the cafeterias and restaurants original boundaries and points of entry.

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[23] See **chapter 2** and for explanation on how the environment provides the potential for people to acquire new behaviours.

CASE A: Semi-public area occupying the water edges.
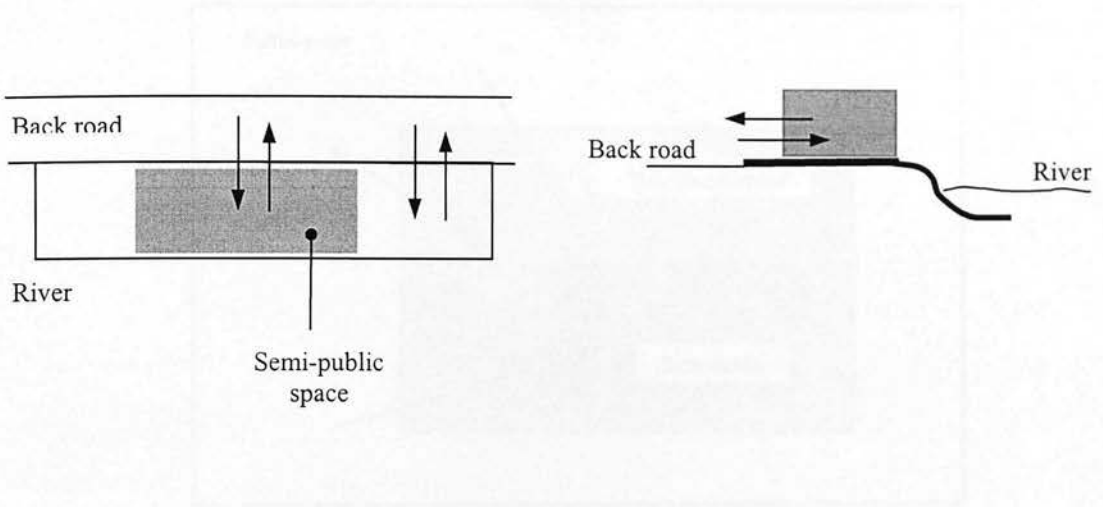
CASE B: Semi-public area allowing public space to occupying the water edges.
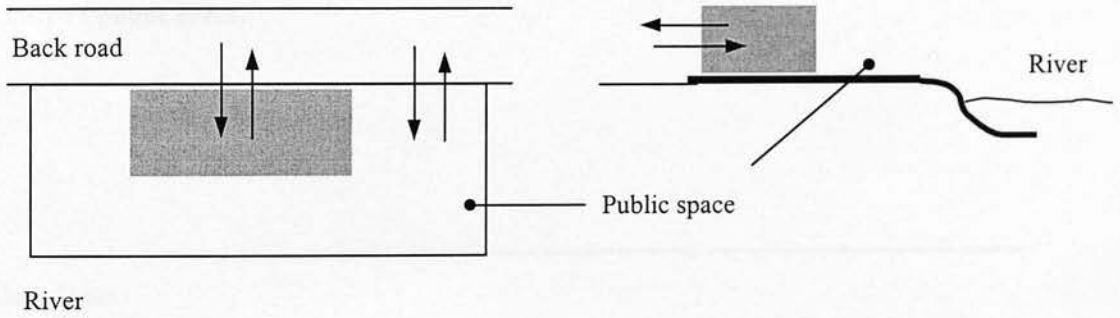
CASE C: Semi-public space occupying the water.
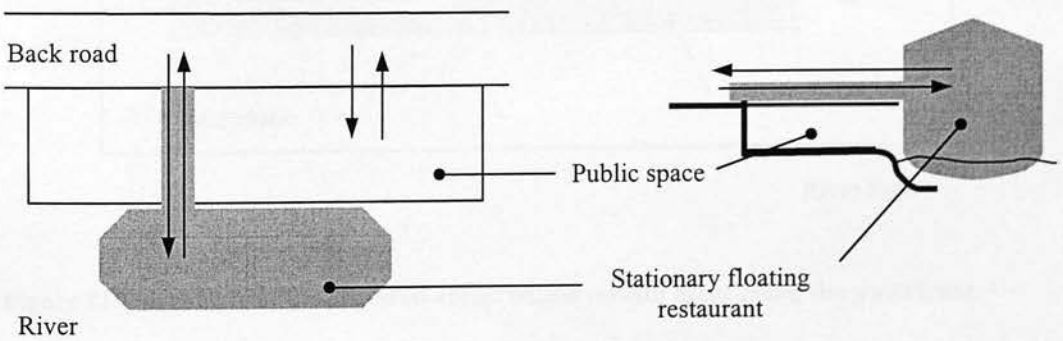
Figure 11.7: Illustrations presenting various cases of segregated access to both public and semi-public spaces.
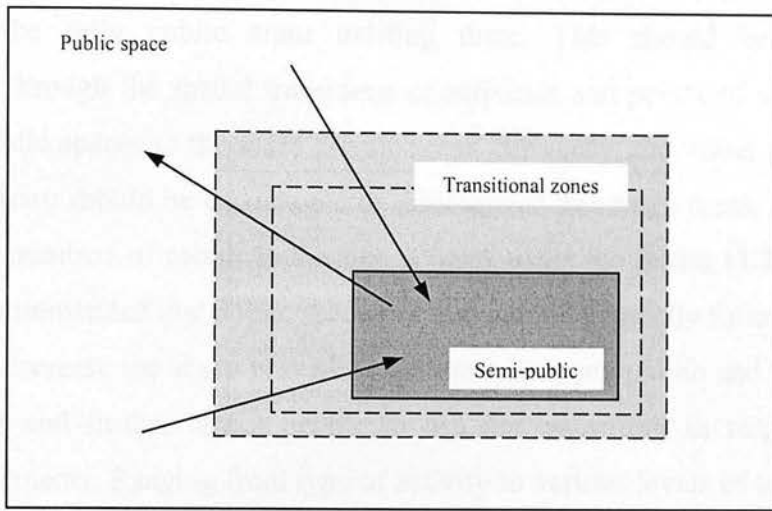
Figure 11.8: Hypothetical illustration of the required access (can generally be applied within Cairo's public areas).
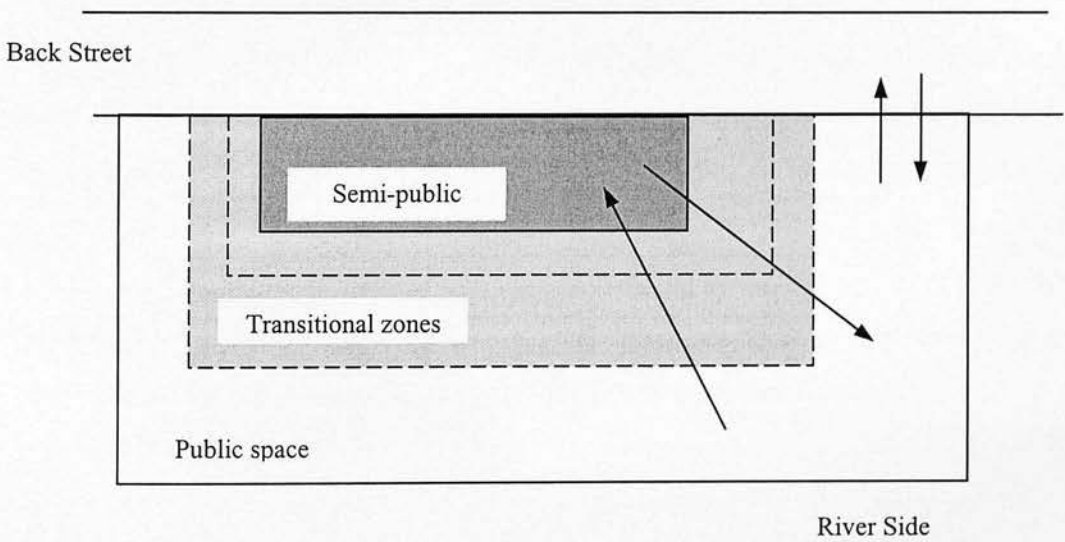
Figure 11.9: Example of the required access within certain areas along the waterfront.

The zones are required to incorporate a required level of privacy along the water-edges, adjacent to the fully public areas existing there. This should be evident and demonstrated through the spatial transitions of activities and points of social contacts, from fully public spaces to the more private areas. Similarly, the visual progression of space and activity should be encouraged or discouraged in certain areas, so as to invite large or small numbers of people to the area at hand, using the **tables 11.2** and **11.3** as a guide. It is recommended that public space in Cairo should generally follow **figure 11.8**, which would decrease the sharp prevailing contrasts between public and private spatial configurations and further attract people to use the waterfront in response to their diverse requirements. Ranging from type of activity to various levels of social contacts. Spaces as such inherent the capability of diminishing the wide gaps between public and private outdoor lifestyle and behaviour.

11.5   Final Remarks

It is here attempted to highlight the final statements that are of great concern to the thesis. This includes various reflections upon individual theories and approaches used within the thesis and are considered as final remarks based upon the achieved deductions. Finally the author individually highlights various dimensions associated with the research methodology and technique and further articulates his opinion on the results more comprehensively within the final statement. The following contains many individual points that have been represented within the research and reflect the opinion of the author, in theories of participation, variation and transactional approaches, and the technique applied. Therefore they were found important to address.

11.5.1 Place Construal through Participation

The model presented within the thesis is originally based upon the Transactional approach, which is holistic by nature. Nevertheless, the introduced model (see **chapter 3**) attempted to make the Transactional approach more specific as it identified the element of variation, which was argued to have a direct effect upon the level of change and choice within the environment. Within this reasoning, it was highlighted that changes in behaviour are considered to be relatively fixed and slow within an environment that displays less choice resulting from lower levels of variation. Furthermore, underlying the theoretical reasoning to identifying the level of variation is the fact that changes in behaviour can only result from the ability for people to interact within the environment. This gives credit to research paradigms that acknowledge that interaction and experiencing places is a fundamental approach in determining environmental evaluations, thus breaking away from the Formal and Biological Aesthetics approaches, mentioned within **chapter 1**. This does not mean to say that they have an insignificant effect upon perception, but it is the researcher's view that research approaching environmental evaluation has frequently undermined Experiential and Participatory approaches. In contrast, the deducted results have numerously emphasised the importance of the Participatory approach.

Indeed it is difficult to estimate how people construe places and the basic drives for place judgement. But the derived results indicated that differences in perception were a

result of social differences between people and the places they visit. It has not come as a surprise that judgement and perception to the waterfront differs according to different groups. A role-related (occupational) difference between groups was extensively highlighted in this research. The preliminary interviews highlighted that not many differences appeared between the professional and the lay group. Therefore the role-related division of the subjects was dropped and all the interviewees were treated as of the same sample. In comparison, the results highlighted that groups differ on the basis of outdoor interaction and activity as a result of club membership. This revealed that both club members and non-club members interact differently within the city, thus further indicating that the means by which we conceptualise places are an integral part of our interactions within these places, thus supporting a more participatory approach. The results indicated that both groups' differing perceptions are linked through varying modes of participation underlying the social class behaviour and lifestyle. The present situation of private versus public areas existing within Cairo seems to confine and restrict the varying lifestyles and social behaviour of the groups to particular places, hence altering how they construe the environment. Similarly, the non-club member group, have evaluated the whole waterfront area in Cairo, with concepts that were particularly confined to Kasr el-Nil. This indicated that the level of variation existing along the waterfront has limited the existence of a variety of visual and experiential stimuli, thus limiting the variation of constructs used in describing these places. As earlier mentioned, this has increased social learning (i.e. people learning from each other) and as a consequence, it has confined place perceptions to the stimuli experienced within a particular area.

The results in total highlight two basic drives for participation within outdoor space in Cairo, the social-class classification of areas and the need to socially interact in public areas. These two drives respectively represent the two different groups, club members and non-club members (see **figure 11.10**). The drives, as earlier represented by Canter (1977), reflect anticipated behaviours within a setting[24]. This in turn identifies how the waterfront area can be potentially utilised for social interaction. It further identifies that the club member group's anticipated social interactions along the waterfront are only embodied in taking walks along the Corniche[25]. It further highlights that interaction

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[24] See the 3 points that attempt to identify the Participatory Approach within **chapter 1**.

[25] See **Chapter 9**, point no.1, 3, 4 and 5 in **section: 9.4.10 Results** and **Conclusion: Theory**.

along the waterfront largely depends upon club membership, as members only visited the Nile at restaurants and hotels.

Non-Club members	Club members
Type of social Participation — Mainly conducted in out door public space.	Mainly conducted within sports clubs
Anticipated behaviour along the waterfront. — Social interaction (Informal places along the waterfront)	Taking walks Visiting cruising restaurants and hotels situated along the waterfront.
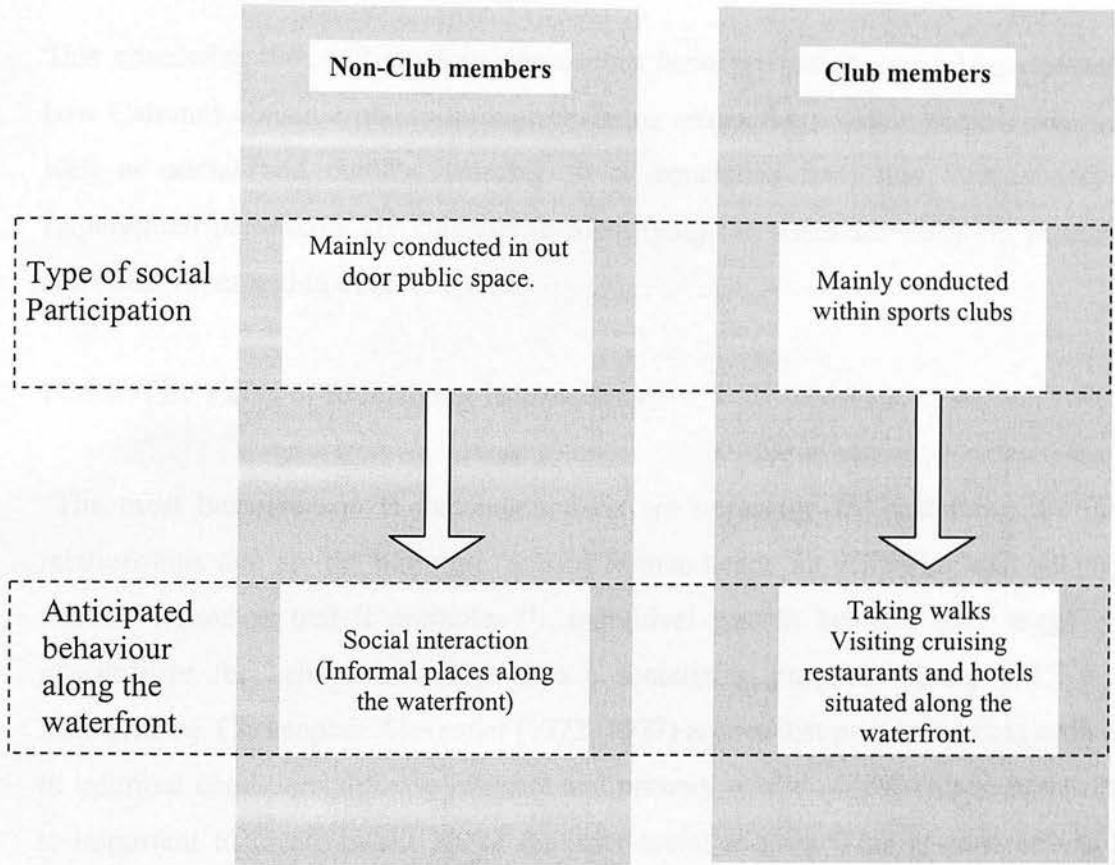
Figure 11.10: Diagram illustrating that the different types of social interactions result in different anticipated behaviours along the Nile

The diagram generally shows that the different locations for out door social interactions have consequently affected people's anticipated behaviours along the waterfront, hence, how they construe the waterfront.

> "The processes of perception, cognition and spatial behaviour are affected by the competencies of the individual and the group of which he or she is a member, as well as the structure of the built environment" (Lang 1987, p.103).

Relating to Man and Environment as a unit to be analysed, the Experiential and the Participatory paradigms reflect the interactional dimension that study both human perception and context as a result of people's interaction with the environment. Thus,

participatory approaches acknowledge various types of interactions that are complementary to the transactional model. Consequently, the design framework implied that people's perceptions and behaviours within places result from their interactions within places and thus may vary accordingly.

This concludes that participatory approaches have proved successful in determining how Cairenes construe places through differing interactions within the environment as well as social and cultural learning. It is concluded here that Participatory and Experiential paradigms are valuable in identifying the bases for differing perceptions and behaviours within outdoor space.

11.5.2 The Value of Identifying Interactions

"The most basic reason is that interactions are necessary for sustaining the human relationships that are the basis for meeting human needs for affiliation and belonging" another reason is that it promotes "…individual growth because they suggest new possibilities for behaviour - they save a socializing purpose" (Lang 1987 p.163). Furthermore, Christopher Alexander (1972, 1977) argues that people meeting each other in informal conditions develop intricate and primary relationships. This suggests that it is important to create public space for inter-social mixing. This is as it affects how people behave and perceive each other (people in relation to people).

A situation where club members and the more affluent groups are accustomed to and have adapted to the environment has been presented. The environment in their case affords them the ability to choose from a finite multiplicity of recreational, social and residential habitats. It is certainly not our intention to deny them these privileges, but the case remains that the lower middle and the lower classes have less opportunity to select social, recreation and residential space. The thesis was therefore specifically concerned with the creation of outdoor social and recreational space, in order to satisfy the larger domain of the Cairene population.

It has been argued that not only is the provision of space necessary, but also the provision of space that encourages a higher level of inter-social interaction. It is the researcher's personal belief here that, by encouraging a larger cross-section of the population to use these spaces, it consequently leads to the development of healthy

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interactions and relations amongst the population and greater opportunity to acquire new behaviours. Nevertheless, it further confirms and states the need for public space for inter-social interactions. This would help 'diffuse' Cairenes' polarised perceptions of public space into a more multi-social, multi-functional, multi-experiential environment.

In other words, by creating variations in public space the polarisation of Cairenes' perceptions to space from old to new, central to peripheral or from private to public space, can be changed. This would also correspond to various groups, class, age, gender, occupation, etc. In turn, this would not only create urban spaces promoting an extra richness to people's lifestyles along the public areas of the waterfront, but also encourage and enhance variations to be created within other public areas within the city. Consequently, this would lead to a further increased variation in outdoor recreational lifestyles by affording all groups the choice of more suitable places to interact resulting in more urban spatial equality among classes.

11.5.3 The Concept of Variation and the Transactional Approach

As transactional approaches examine changing relationships between people and their environment, the concept of variation is presented here as an intrinsic aspect of the Transactional approach. The concept of variation proved valuable while determining relationships between people and the environment. The relationships were presented in the level of interaction taking place between various groups and the environment. It therefore showed reduced levels of participation within outdoor public spaces both from club members – as they were confined to outdoor social/recreational behaviour within their clubs – and non-club members – as they were confined to outdoor activities within central parts of the waterfront. By determining the level of variation within the environment both these results were derived and further proved to be valuable. This suggests that further research from a transactional stance, can be applied for the purpose of determining changes in human behaviour and perception, particularly by determining 'the level of variation' within the required area of study.

11.5.4 Transactional Theory and Perception

It is clear now that the Transactional theory emphasises the role of interaction in the environment and focuses on a dynamic interplay between people and the environment. It has also been suggested in **chapter 3** that the observer's perception is a result of the transactions between the observer and the environment. Therefore the environment and the observer are mutually dependent upon each other. The Transactional approach within this research has reflected a number of assumptions that are inherent in the nature of the approach and are listed below.

1. Place perception is multi-modal. Hence it takes place not only in formal/physical aspects of the environment but also through experiencing and interacting with the environment.

2. Perceiving places is a more active rather than passive process. This was reflected in the importance of the waterfront as having the potential for socialising rather than for its mere physical sensory qualities.

3. Place perception cannot be explained by separating the observer from the observed. This is reflected in the choice of the model that deals with *human perception* and the *context*.

4. Man-Environment relationships function dynamically as they are determined through various types of interactions with the environment. This dynamic relation can only be determined by acknowledging changes in the relationship.

5. The observer's image of the environment depends upon past experiences with various places. This is reflected in the club members' use of social class as an elementary variable in describing places. It also reflects the wide use of the 'Corniche' concept within different cities and areas.

6. Past experiences are also projected onto places thus reflecting one's needs in a place. This is illustrated as the non-club members felt the need to socialise and to locate parking space along the waterfront, which was different from the club members' needs.

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The overall results indicate that the information people obtain from the environment are validated through actions. This indicates what Lang (1987) describes of the transactional approach:

> "The information obtained from the environment has symbolic properties that give it meaning, ambient qualities that evoke emotional responses and motivational messages that stimulate needs. An individual also assigns value and aesthetic properties to it. Because human needs need to experience the environment as a pattern of meaningful relationships, past experiences form the basis for understanding the new" (p.90).

The importance of transactional theory arises as it recognises that interactions shape how people construe the environment. **Chapters 1, 2** and **3** indicate that we should not look at the environment as an object but rather as multidimensional, interdependent and as the interplay of dynamic processes. This would address that any theory of aesthetics should in fact recognise the importance of these interactions taking place within the environment. As any given environment comprises a diversity of behaviours, it is therefore too simplistic to adopt stimulus-response models for human behaviour.

11.5.5 Technique

The technique illustrated how people describe and visualise the waterfront area. This was helpful in mapping the areas by the aid of the constructs, which were used to describe places as they clarified where the descriptors lay in the map with respect to the liked and disliked areas. It was also found helpful in describing why these areas were disliked or liked in relation to the various functions and activities taking place along the waterfront. The introduced technique (see **chapter 5**) relied on transforming the interviewees' descriptions into numbers. This technique depends upon the notion that people are able to locate any given entity on an attribute by relating it to the extremes of that attribute (Canter, D. 1975). Therefore each construct was converted into a seven-point scale, of which the two extremes are defined by opposing polarities (e.g. built / natural, maintained / neglected, central / peripheral and dirty / clean). This was achieved by asking the subjects to estimate where a place lies between both extremities, and so

on. This was implemented in order to transform their constructs into simple computable numbers, in this case, ranging from one to seven.

The point made here is that the subjects identify places by choosing a point within the gradation between both extremes. This method has proved to be of great importance as the constructs used and applied on the places were individually derived from the subjects' personal experiences. This again highlights that the research technique was complementary to the required investigation, which attempted to derive judgements and perceptions resulting from collective experiences with the environment.

Though the initial intention was to investigate differences between professionals and laymen, this preliminary investigation was later dropped, as there was no clear difference between the two groups worth investigating, they were considered as one group. Other research that tested between professionals and laymen usually found basic differences between the two groups (Groat, L. 1982; Hubbard, P. 1996).

It is speculated that this result may have been due to two different reasons, operating collectively or separately. Either core differences did not exist between either groups, or the chosen interviewing technique did not allow for professional judgement and bias to take place. This came about as the technique avoided any suggestion on behalf of the researcher, where the subject's personal constructs are identified from the individual's own and personal interactions with places. This would suggest that the technique suppresses the possibility of any academic influences within the interviewing sessions as it targets personal experiences from individual's interactions with places. This is again in favour of avoiding the use of pictures in interviewing sessions as they confine judgements to certain elements within the pictures, promote purely visual characteristics and do not relate to the individual's interactions with the proposed places.

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& Taylor, J.G.

GLOSSARY

GLOSSARY

Constructs	Are mental filters, from which people perceive the world (Kelly 1955)
Interaction	The study of the prediction and control of behaviour and psychological processes.
Model	Framework set up to be followed: used to shaping the sequence of the research.
Paradigm	Conceptual framework within which scientific theories are constructed: used within the thesis to refer to the paradigms of perception and evaluation.
P.C.T	Personal Construct Theory: theory regarding P.C.P (see P.C.P.)
P.C.P	Personal Construct Psychology; deals with the structure of the individual's personality.
Privatised Public Space	Privatised public areas, refers to privately owned spaces, such as restaurants, shopping malls, etc.
Self Action	The study of individual, mind or psychological processes.
Social Class	Regarded as the categorisation of people on the basis of occupation, due to the interrelationship between social class with income and educational level.
Transaction	The study of changing relations among psychological and environmental aspects of holistic unities.

APPENDCIES

Emotional

The table below has been grouped in accordance with various feelings or emotions. The elicited constructs illustrated within this group, contains a rather small amount of constructs. The constructs shown here deal with the subjects' differentiation between places in terms of emotions associated with certain places. They mainly describe different levels of satisfaction with particular areas along the Nile cornice. The subjects' relaxed feeling within a particular area usually related to the amount of traffic existing within the area.

EMOTIONAL	Professionals Over 30		Professionals Under 30		Laymen Under 30		Laymen Over 30		Sub-total
Feel Proud/Not					C	1			1
Get easily bored /Not	B								1B
		1			C	1			2
Feel lost/Not	A	1A							1A
		1							1
Relaxing/Not				1A	A	1A			2A,1B
			A	1		1	B	1	3
3A+2B+2C Total = 7	1A+1B		1A		1A+2C		1B		
	2		1		3		1		

Table 6.18

Historic Significance

There are many historical sites in Egypt, thus the historic significance of a place may be of a relatively obvious outcome. Since most of the places dealt with the Nile and the Nile being of obvious historic, patriotic and cultural significance as it is mentioned in the national anthem. It was unexpected that there would be few responses regarding this issue in differentiating between places. This significance could have been embodied in the classification mentioned earlier (places close/far from the Nile) not only for its aesthetic quality but also for the cultural significance.

HISTORIC SIGNIFICANCE	Professionals Over 30	Professionals Under 30	Laymen Under 30	Laymen Over 30	Sub-total
Preserves History + Culture/Not		1A			1A,1B
		A B 2			2
Historical/Non-historical	C		B		2B
	C 2		1	B 1	4
1A-3B-2C	2C	1A-1B	1B	1B	
6	2	2	1	1	

Other Physical Descriptions

The following constructs were categorised for describing the physical attributes of the mentioned places.

OTHER PHYSICAL DESCRIPTIONS	Professionals Over 30	Professionals Under 30	Laymen Under 30	Laymen Over 30	Sub-total
Isolated/built area				C 1	1
Place has boundaries /Not				C 1	1
Desert place/not				C 1	1
Flat land/Not	C				1
	1				
Water Edges are built/Not				1A	1A
				A 1	1
1A-4C	1C			1A-3C	
5	1			4	

OTHER	Professionals Over 30	Professionals Under 30	Laymen Under 30	Laymen Over 30	Sub-total
Bldgs/Property abide regulations/not				B	2B
	B 1	C 1		1	3
Economic level of place,		1A			1A
	A 1				1
Old/New Place					1
		C 1			
Colour fits surroundings or not			B		1B
			1		1
Attractive Place/not					1B
			B 1		1
Well known place/ Unknown place			B		1B
			1	C 1	2
3A-5B-4C	1A-2B	1B-1C	1A-1B	1A-1B-3C	
12	3	2	2	5	

1.

Questionnaire

Age: _____
Occupation: _____
Gender: _____
Place of Residence: _____
Education: _____

Insert ✔ in a circle in order to indicate the places you like on the given map and mention the names of the chosen places:

_____
_____

Why have you chosen these places?

_____
_____

Insert ✗ in a circle in order to indicate the places that u don't like on the given map and mention the names of the chosen places:

_____
_____

Why have you chosen these places?

_____
_____

If we assumed that you were to visit the Nile cornice 100 times, How many times would you see people participating in the following activities;

People meeting each other	_____ times	People going to restaurants	_____ times
People sitting	_____ times	People in Nile falookas	_____ times
People using the water bus	_____ times	People involved in fishing	_____ times
People in tourist ships	_____ times	People having walks	_____ times

Choose the times you would prefer to visit the Nile cornice (choose one or more).

Early morning ( )   Midday ( )   Evening ( )   Night time ( )

Why have you chosen these times?

_____
_____

I usually visit the Nile cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I would like to live far from the Nile cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

Please mention why?_____

I would like more places to be located close to the Nile cornice in order to meet friends there.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I would like to work close to the Nile cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like the open views at the Nile cornice area.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

Clubs and restaurants should be increased along the Nile cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I don't like visiting the Nile because there are not many activities to get involved in along the cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like visiting the Nile for it's historic significance.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like visiting the Nile cornice in order to see people.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I usually visit the Nile cornice for participating in recreational activities.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like visiting the Nile cornice for viewing the Nile boats.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I visit the Nile cornice for meeting friends.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like visiting the Nile cornice for the Air breeze.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like visiting the Nile cornice for seeing the river's water.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like going to the Nile cornice for having walks.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like visiting the Nile cornice for viewing the nice night light existing at this area.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like visiting the Nile area for the nice hotels existing along this area.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

Other than intentionally visiting the Nile cornice, what reasons make you come across this area?

Do you get in contact with the Nile on your way to or from work?

O Yes   O No

I work close to the Nile cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I live close to the Nile cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

Are there any other reasons for coming in contact with the Nile cornice? Please explain

_____

_____

The Nile cornice needs more vegetation.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

The trees along the Nile cornice needs cutting and more concern.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

It is easy to reach close to the water of the river.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

From your own experiences, which places have the best views to the Nile?
Are they from;

the surrounding hotels?

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

the bridges and flyovers?

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

the Nile boats?

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

the adjacent roads?

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

Please mention any other places that you think have nice views to the Nile.

_____

The night light at certain places along the Nile River lessens the quality of the cornice.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

I like having walks along the Nile cornice.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

I do not like the Nile cornice areas within Cairo because of the high levels of air pollution.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

The water edges need more maintenance.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

It is important to increase public walking and seating areas.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

The social class of the residents of some areas in Cairo influences the quality of the place.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

I like seeing the industrial areas along the Nile.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

It is important to reduce the amount of traffic along the Nile cornice.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

The existence of restaurants along the Nile obstructs my views to the Nile river.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

The behaviour of people at some places along the Nile is not appropriate for the place.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

If you agree upon <u>the</u> above statement, please mention these places;   6.

_____

_____

The level of cleanliness along the Nile cornice is generally appropriate.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

The way the Nile is used along some areas of the Nile is not appropriate.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

If you agree upon <u>the</u> above statement, please mention these places;

_____

_____

Contrasting styles of buildings exists at the Kasr El-Nil area.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

The high rise buildings that exist along the Nile cornice improves the quality of the place.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

I like visiting places that are highly residential.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

I like viewing the Nile fountain.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

It is important to provide more shopping areas along the water edges.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

The traffic along the roads adjacent to the river is well organised.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

I like the places along the Nile from which I can see vegetation on the opposite banks.

Agree very much   Agree   Don't agree   Don't agree at all   don't know
        O   O   O   O   O

Some places along the Nile cornice are not safe.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

If you agree upon <u>the</u> above statement, please mention these places;

_____

_____

I like the places along the Nile from which I can see hotels.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

The existing Nile cornice does not help to get involved in various activities.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

Enough parking areas exist for visitors to the Nile cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

I like visiting the places along the cornice that are far from the city centre.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

The tourist areas are the worst places existing along the cornice.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

The buildings currently at the Nile cornice are in harmony with the surroundings.

Agree very much	Agree	Don't agree	Don't agree at all	don't know
O	O	O	O	O

If 1 represents the most frequently visited place and 5 represents the least frequently visited place, choose the appropriate number for the following categories.
Circle the appropriate number;

The International Gardens	1 2 3 4 5	Your sports club	1 2 3 4 5
The zoo	1 2 3 4 5	The Nile cornice	1 2 3 4 5
Cinema or Theatre	1 2 3 4 5	The Pyramids area	1 2 3 4 5
The fun park	1 2 3 4 5	The city centre	1 2 3 4 5

Tick in order to determine the level of importance of the following statements:

It is important to provide meeting places along the Nile cornice.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

The water edges need more walking areas.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

It is important to increase areas that allow for more recreational activities.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

It is important to increase the night-light along the Nile cornice in some parts such as Imbaba cornice.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

It is important to reduce the number of floating boat restaurants existing along the water edges because they block the views to the opposite banks.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

It is important to provide more areas open to the public along the Nile edges.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

It is important that the visiting place is cheap or for free.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

It is important that the place to visit is located close to my home.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

It is important that any place I visit has open and wide views.

Very important   Important   Not important Not at all important   don't know
    O   O   O   O   O

It is important to have wide walkways.

Very important   Important   Not important   Not at all important   don't know
    O   O   O   O   O

It is important that the walkways are shaded.

Very important   Important   Not important   Not at all important   don't know
    O   O   O   O   O

It is important that the walkways at the Nile cornice are located close to the water.

Very important   Important   Not important   Not at all important   don't know
    O   O   O   O   O

What is the level of importance towards the following building features that, in your opinion, influence the quality of places? (Please give your opinion upon the following).

The building organisation and order.

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

The distances between the buildings at the Nile river.

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

Building colour.

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

Building heights (skyline).

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

Building style (old or new style).

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

Building condition.

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

Harmony of buildings with surroundings.

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

Distances between buildings.

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

Building size.

Very important	Important	Not important	Not at all important	don't know
O	O	O	O	O

Use the letter (F) inside a circle to indicate on the associated map (following page), for the places that you know well.

Please mention the names of the chosen places;

_____

_____

Please explain why you chose these places.

_____

_____

Use the letter (S) inside a circle to indicate on the associated map (following page), for the places that are in your opinion are important to leave in their original condition.

Please mention the names of the chosen places;

_____

_____

Please explain why you chose these places.

_____

_____

Do you think that there are any places along the Nile cornice in Cairo that need improving?

      ○ Yes   ○ No

If Yes, then please mention these places;

_____

What does the Nile river mean to you?

_____

_____

In your opinion, what is the shared feelings between the Egyptians upon visiting the River Nile ?

_____

_____

If you usually visit clubs, what is the usual sports and/or social club that you usually visit?

_____

Tables of results after applying the Spearman Correlation Test on the variables relating to the waterfront area.

Creating more night light.	Significance
Activity	
Visiting the Nile for the air breeze	$r_s = 0.3577$ (128), $p<0.001$
Visiting the Nile for a walk	$r_s = 0.3275$ (128), $p<0.001$
Locating seating and walking areas	$r_s = 0.3064$ (128), $p<0.001$
Scale	
The width of walkways.	$r_s = 0.2780$ (128), $p<0.001$
Maintenance	$r_s = 0.3550$ (127, $p<0.001$
The width of views in a place	$r_s = 0.3401$ (128), $p<0.001$
Modernity of buildings and condition	
The buildings having an old/new style	$r_s = 0.2540$ (127), $p<0.004$
The condition of the buildings	$r_s = 0.3071$ (128), $p<0.001$
Colour of buildings along the Nile cornice	$r_s = 0.2506$ (128), $p<0.004$
Harmony of the buildings with the environment	$r_s = 0.2915$ (128), $p<0.001$

Scale	Significance
modern/old place	$r_s = 0..3982$ (128), $p<0.000$
Width of views.	$r_s = 0.4276$ (129), $p<0.001$
Social class of residents.	$r_s = 0.2983$ (129), $p<0.001$
Safety	$r_s = 0.3364$ (129), $p<0.001$
Activity	
The need for more walkways	$r_s = 0.3551$ (129), $p<0.001$
The existence of night light in a place.	$r_s = 0.2780$ (128), $p<0.001$
Building condition.	$r_s = 0.2576$ (129), $p<0.003$

Width of views	Significance
Activity	
Viewing the running water.	$r_s = 0.2898$ (129), p<0.001
Locating public walking and seating areas.	$r_s = 0.3333$ (129), p<0.001
Visiting the Nile cornice for having walks	$r_s = 0.3992$ (129), p<0.001
Far/close from centre	
Viewing natural sites on the opposite banks.	$r_s = 0.3283$ (126), p<0.001
Views from the bridges	$r_s = 0.2471$ (127), p<0.005
Building type	
The building condition.	$r_s = 0.2793$ (129), p<0.001
The harmony of buildings with surroundings	$r_s = 0.2729$ (129), p<0.002
Scale	
Width of walkways.	$r_s = 0.4276$ (129), p<0.001
Views being blocked by the floating restaurants	$r_s = 0.2742$ (126), p<0.002
cheap/dear place to visit	$r_s = 0.3050$ (129), p<0.001
Maintenance	$r_s = 0.3912$ (128), p<0.001
The importance to locate night-light.	$r_s = -0.2744$ (129), p<0.002
Residential density within a place.	$r_s = -0.2744$ (129), p<0.002
The density of the traffic.	$r_s = 0.2468$ (128), p<0.005

Modern/Old	Significance
Activity	
Locating places with a variety of things to do.	$r_s = 0..3365$ (126), p<0.000
Locating clubs and restaurants.	$r_s = 0.2468$ (128), p<0.005
Meeting friends	$r_s = 0.370$ (128), p<0.003
Existence of shopping areas	$r_s = 0.2411$ (127), p<0.006
Scale	
Building size	$r_s = 0..3982$ (128), p<0.000

The existence of Shopping areas	Significance
Modern/Old	$r_s = 0.2411$ (127), p<0.006
Locating walkways close to the Nile	$r_s = 0.2472$ (127), p<0.005
Activity	
Locating recreational places	$r_s = 0.2432$ (128), p<0.006

Difficult/Easy to reach	Significance
Need for vegetation	$r_s = 0.2377$ (130), p<0.006
Social class	$r_s = 0.2653$ (130), p<0.002
Safety	$r_s = 0.3618$ (129), p<0.000
Activity	
How the place is used.	$r_s = 0.2617$ (127), p<0.003
The existence of a variety of activities.	$r_s = 0.3997$ (127), p<0.001

Residential density	Significance
Maintenance	$r_s = 0.4271$ (128), p<0.000
Far/close from centre	
Viewing natural sites on the opposite bank.	$r_s = 0.2472$ (127), p<0.005
Width of views	$r_s = -0.2744$ (129), p<0.002

Width of views	Significance
Activity	
visiting the cornice for having walks	$r_s = 0.2618$ (129), p<0.003
Far/close from centre	
Viewing natural sites on the opposite bank.	$r_s = 0.3283$ (126), p<0.000
Scale	
Width of walkways	$r_s = 0.4276$ (129), p<0.000
Views from the bridges	$r_s = 0.2471$ (127), p<0.005
Maintenance	$r_s = 0.3912$ (128), p<0.000
traffic density	$r_s = 0.2468$ (128), p<0.005
locating walking and seating areas	$r_s = 0.3992$ (129), p<0.000
residential density	$r_s = -0.2744$ (129), p<0.002
Floating restaurants may block the views	$r_s = 0.2742$ (126), p<0.002
locating public areas	$r_s = 0.5617$ (128), p<0.000
Dear/cheap visiting places	$r_s = 0.3050$ (129), p<0.000
closeness of walkways to water	$r_s = 0.3939$ (128), p<0.000
Building condition	$r_s = 0.2793$ (129), p<0.001
Buildings in harmony with site	$r_s = 0.2729$ (129), p<0.002

Traffic density	Significance
Maintenance	$r_s = 0.3095$ (127), p<0.000
Activity	
Locating walking areas.	$r_s = 0.1534$ (128), p<0.004
Locating recreational areas.	$r_s = 0.2717$ (128), p<0.002
width of views	$r_s = 0.2468$ (128), p<0.005

Visiting places close/far from the Nile	Significance
Frequency of visiting the Nile	r_s = -0.2451 (127), p<0.005

Activity	Significance
Locating clubs and restaurants	r_s = 0.2468 (128), p<0.005
Visiting the International Gardens	r_s = 0.2674 (125), p<0.003
Scale	
Building size	r_s = 0.3982 (128), p<0.000

Existence of People	Significance
Activity	
Visiting the cornice for recreation	r_s = 0.3732 (129), p<0.000
visiting to view the boats	r_s = 0.3611 (127), p<0.000
visiting to meet with friends	r_s = 0.3244 (128), p<0.000
visiting for having walks	r_s = 0.3029 (129), p<0.000
views from the restaurants	r_s = 0.2519 (127), p<0.004
Level of Cleanliness	r_s = 0.2825 (128), p<0.001

APPENDIX 4

Origins of Segregation and Class Structure

During the 11th century Al-Qahirah (Cairo) was a well designed community, divided into separate quarters according to ethnic origins and liberally endowed with gardens and palatial residences. During the Fatimids Al-Qahirah had a social system that influenced the form of the medieval city. One of the elements of this social system was reflected in its internal organisation, which was in accordance to occupation.

During late Roman and Byzantine times, the various trades and crafts in the urban centres throughout the empire had been organised into occupational corporations or 'guilds', where membership was compulsory and through which commercial activities were closely regulated by the state. During the Arab conquest of Egypt, these occupational corporations persisted through the end of the ninth century and remained intact. This system remained chiefly as a means of maintaining public regulation over merchants, tradesmen and artisans (Boak 1932, cited in J. Abu-Lughod 1971). According to Abu-Lughod J. (1971) a guild was,

> "...a form of social organisation congruent with the technical level of production, but one which was modified, shaped and utilized in different fashion by different cultures and even by the same culture over time" (p.23).

Therefore specialised markets were distributed within the city, each market associated with a quarter, where production and distribution was combined with residences and inns

for the tradesmen. Therefore, Al-Qahirah had been configured into occupational cells with peripheral residential quarters.

This pattern of organisation, by which groups (and their affiliations) were structured and continued for several centuries, thereby influenced the pattern of the physical environment. This organisation of an occupationally linked grouping system reflected a structural pattern of behaviour by which functional affinities of interest was the determinate of social lifestyle and space. As Cairo's evolution during the Middle Ages was merely occupationally linked, it is of interest to the research that the social groupings and the physical form of the city were closely related. Therefore urban lifestyle was inherently linked to occupation, which left evidence in the physical form of the city, a phenomenon which has lasted to this very day.

Aristocracy, Residential Areas and Movement

At the beginning of the sixteenth century, the Mamluk aristocracy preferred to choose areas close to the Citadel as their residential areas. Unfortunately the Citadel, usually the target of many foreign attacks, was an insecure area. This gradually led aristocracy to move to the more attractive area of Birkat al-Fil, which contained nearly half of the Mamluk Bays. By the end of the Turkish period, the desertion of the Mamluk aristocracy to the citadel area increased and the South-eastern part of the city gradually deteriorated and was mainly inhabited by the city's destitute.

During the Turkish rule, the city boundaries did not undergo any significant changes, yet there was a Westward shift of the communities towards the new areas. The qasabah was formerly the main market place (*suq*) of the entire city, but its importance later somewhat declined. This was due to competition that emerged from the western side of Khalij Misri.

By the 18th century this gradually gave the zone of Azbakiyah the privilege of being an élite residential area in comparison with its rival Birkat al-Fil. The Azbakiyah was the

main attraction point for the élite and became an aristocratic zone by the mid-eighteenth century. The bourgeoisie residents shared this zone with the lower ranking officers and the incoming aristocracy. Upon the arrival of Napoleon, these areas had been chosen by him to settle in and from then on it was the undisputed aristocratic area.

The new growth towards the West left the eastern area of the city in decay, which was then occupied by the poorest constituting village migrants. This decay has been more or less inherited today and is typical of present day planning, which leaves parts of the city to deteriorate. During the French occupation, Bulaq, to the west of Cairo on the Nile, had been utilised as a major transport and a wholesale area. Bulaq was also connected to the Azbakiyah quarter, where the French headquarters existed.

During the French occupation and according to the statistics of the French scholars that went about documenting Egypt's situation and conditions at that time, 90 percent of the total population were Muslims and the remaining 10 percent were divided among Christians and Jews of various sects. The Christians consisted of 10,000 Christian Jacobites (Copts), 5000 Greek and Maronite Catholics, 5000 from other Greek splinter sects, 2000 Armenian Christians and 400 Roman Catholic and Protestant Europeans, in addition to 3000 Jews (Jomrad 1882, cited in Abu-Lughod 1971).

The Muslim majority consisted of Egyptian-Arab Muslims who made up just under four-fifths of the total population. The Muslim foreigners who were of both high and low status accounted for around 13 percent of the total population. The elitist groups consisted of 10,400 Mamluks and 10,000 Turks, whereas lower status groups were of 12,000 Blacks, who were from Nubian and Ethiopian origin and were brought to the city as menial.

The Mamluks, who were the ethnically distinct ruling class, landlords, international traders and proprietors, accounted for the middle class. African and rural Egyptians shaped the lower classes and were involved in domestic service or unskilled labour and agriculture. Therefore there was an apparent congruence between occupation, ethnic

identity and class. At that time, these groups were basically confined to their own city quarters.

Cairo's medieval heritage is underlined by a physical organisation, that is correlated with a pattern of social organisation, which still exists and is fully inhabited to this present day. The physical organisation of medieval Cairo was embodied in the growth of its three centres, Al-Qahirah, Bulaq and Misr al-Qadimah. Cairo's evolution has developed within those areas and is strongly associated with the connections between these three communities.

The main Coptic quarter existed just to the North of Azbakiyah at the former port of al-Maqs and also within Qasr al-Sham, which is part of Misr al-Qadimah. These existing residential areas were related to occupation, as Coptic occupations were of scribe, account-keeper and customs official, which part the areas. The Jews and the Greeks remained within the Fatimid walls of the old city, since they tended to serve the ruler and their location thus remained within the walls for protection. Therefore money exchangers, jewellers and goldsmiths remained confined within their quarters, even after the ruling authority moved to the Citadel.

Two Greek settlements existed: the first "Harat al-Rum" located to the North-east of the Fatimid Eastern Palace; the second, developed before the 11th century, lay just to the South of Bab Zuwaylah along the Southern wall of the city. Both were then simultaneously labelled as the "Inner Greek Quarter" (Harat al-Rum al-Juwwaniyah) and the "Outer Greek Quarter" (Harat al-Rum al-Barraniyah). Several centuries later, by the time the French had come, another colony of Greeks had begun to form at the North-western quadrant near to the native Christian communities.

To the Southeast of Cairo was Misr al-Qadima, which had been neglected, had a declining population and had no longer been the important city it had been during the Islamic times. This area contained a large number of Christians, Coptics and a large

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minority of Jews. The rest of the city was occupied by Muslims, which numerically dominated the city areas.

The mansions of the élite were located at the most desirable residential zones of the city, Birkat al-Azbakyah and Birkat al-Fil. During the 15th century after the Salim's Turkish conquest, the Turkish community spread within the previously élite areas of the Mamluks, where many of them were merchants and had not established a headquarters within Cairo. The middle classes were the local Egyptians that were basically merchants, craftsmen and artisans who configured the bulk of that class. Furthermore, the impoverished, unskilled Muslim labourers occupied the semi-rural peripheral areas north of "Al-Hussaynayah", which were of declining importance and on the Eastern fringes at the foot of the Citadel.

To this day, many details of population distribution of these areas remain as they were, with only little changes occurring to the functions involved within these areas. This is reflected in the area of Shobra being a relatively new area and stemming out of the old North-western Christian area of the city and dominated by Egyptian Christians. Garden City, an extension from al-Muski and Azbakiyah quarter, contains European type residents. Abbasiyah extends from al-Hussaynayah: the zone at the foot of the Citadel has been extended Westward to Sayidah-Zaynab and contains Muslim middle and lower class residents.

The medieval times had shaped much of the functional and occupational distribution within Cairo. Pottery, kilns, slaughterhouses and tanneries were situated near Misr al-Qadimah. Recreational areas for the Mamluks sporting activities were located outside the city in semi-marshlands to the West and North. Government offices were concentrated in the Citadel. Commercial functions were confined to the linear strip of qasabah, which extended from Bab al-Futuh to beyond Bab Zuwaylah. Trade and manufacturing centres were located within specialised areas, following functional requirements. Books and religious artefacts associated with al-Azhar Mosque. Armour and metal items for battle were associated with Mamluk concentrations to the South. Fruits, vegetables and poultry

were located near the Northern entrance of the city, from which peasants accessed the city. Thus the district specialisation of medieval (pre-industrial) Cairo had been highly evolved.

As place of residence was closely related to work, pre-industrial Cairo had been working in a sense, more efficiently than a typical modern city which spends much of its effort on providing links between functionally related and spatially remote areas, whereas the former relied simply upon mere walking distances. Residences, workshops and retail in medieval Cairo all combined, which is rather different than that of a modern industrial city. This combination exists to the present day, and is reflected at the scale of a district 'harah'[1] and to the smaller extent 'darb'[2]. A darb or group of several 'durab' would have been involved with a particular craft. These areas were highly specialised and contained production, retail and distribution networks. In addition the unit may include the merchants' luxurious homes, the dwellings of the master craftsmen and the poorer quarters of the apprentices, unskilled labours and menials. This segregation was different than that of land-use or income segregation, and means that there is little urban delineation along the lines of prosperity other than the large numbers of poverished and unskilled abandoned along the South-eastern sides of the city.

Since the mid-thirteenth century, a foreign élite had constantly ruled Cairo. The ruling Mamluk Bays were the groups that usually maintained themselves apart from the population and passed down their military feudal power to later generations. They largely separated themselves from the Arabs and Egyptians whom they governed and exploited. Yet again, this segregation would also become clear in the locations of their residences.

The Ottoman Turkish rule had witnessed the construction of 216 monuments. During this time, the divide between the rulers and ruled had narrowed, due to marriages between the sons of the Mamluks and Egyptians, who had formerly been excluded from any rights of succession. Under the Ottoman rule the former Mamluks no longer had Turkish names,

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[1] harah: an area consisting of a narrow way that cut's off of a main road.

[2] darb: Group of dwellings closely combined and collected around a common alley.

and therefore preceding generations shared Arabic names with the rest of the Egyptians. This gave the Mamluks the privilege of joining in with the military to higher ranks, together with inheriting their fathers' positions in Mamluk society. This consequently strengthened the relationship of kinship by sustaining ties throughout several generations, which managed to bridge the former wide gap between the alien élite and the indigenous population.

As rulers and their dependants were concerned with their own interests, the exploitation and ownership of farmed lands, their produce and the implementation of high taxation, little attempt by the rulers and bourgeoisie was spent on learning the Arabic language. They thus remained confined to their own community with neither loyalty to Cairo or Egypt. The ruled population similarly had no affiliation to their remote foreign rulers. Thus municipal interests were directed to private interests rather than the public domain. Each quarter of the city had to provide for its own needs. The community by then had been subdivided into Muslim brotherhoods and those of different ethnic origins in order to react to the public interest and achieve a level of security within an unpredicted hostile feudal system.

The existence of a diverse occupational, social and ethnic division, inherited from the medieval city, is reflected in the Modern City of today and is apparent in its segregated physical form. The Modern City, in the same way, has also contributed to this fragmentation. Therefore the basis of the social system had stemmed from national, religious and regional differences. Abu-Lughod (1971) further described the origin of social and ethnic divisions within Cairo as follows:

> "Perhaps one of the most significant differences between cities of the industrial era and those of the feudal or pre-industrial order is the critical role which sub-group identification plays in sorting and segregating the inhabitants of the latter type. In the pre-industrial city, not income but "ethnic" division according to the dual criteria of religion and place of origin is the basis for social class, occupation, and place of residence within the community. The ecological

organization of pre-modern Cairo conformed well to this hypothesis. The distribution of population within the city was governed by the principle of social order rather than economic segregation, although economic distribution was often a function of this social identity" (p.58).

During the nineteenth and early twentieth century, a shift occurred to a different type of élite, which consisted primarily of Europeans. In both these centuries Cairo never had the opportunity to develop a municipal system of self-government because a foreign élite ruled both city and country. Both the bourgeoisie and the masses remained withdrawn, with little responsibility to the city as a whole. Due to the non-existence of a municipal administration dedicated to public rather than private interests, each city quarter tended to look after its own needs.

> "Little co-ordination was required because the élite lived in an entirely different world from the bourgeoisie and the masses, each group being independently organized for continuity and having, fairly superficial and formal relations with the other". (Abu-Lughod J., 1971, p.71)

The end of the nineteenth century witnessed the major construction of areas, which widened the distinction in physical form and districts between the classes. The European styled city with its "modernised" Western form clarified the physical distinction between the old and new areas. The demographic growth of Egypt put pressure on the demand for larger residential areas, together with a major transport system. Consequently, Cairo experienced recurring cycles of demographic growth, which led to later development of residential areas, Nasr City and Muqqatam City.

At the early 20th century and during the British occupation universities were predominantly preserves of the established groups, exclusively from the upper classes. At this time special attention was drawn to a person's antecedents during interviewing sessions. British exclusiveness was carried out to great extremes, which led to resentment from the Egyptian populace. The British rarely associated with Egyptians on a social

level, to the extent that senior officials lectured young English recruits on basic principles, which was to never associate themselves with Egyptians outside their working parameters. This led to the containment of the British residents, who occupied areas in isolation from the Egyptians.

During the British rule, the British exclusively held top executive positions, where few Egyptians were given opportunities to work at levels commensurate with their educational attainments. Egyptian colonial service attracted upper segments of the middle classes, which resulted in a certain amount of racial arrogance towards the less fortunate classes. Egypt attracted more from the upper classes of English society than most of the other overseas possessions (Tignor R., 1966).

According to Husssein M. (1973), it was the later British interests that undermined the middle classes such as artisans and manufacturers, which had been a basis for independent development, and thus forced the country to specialise in agriculture. This therefore disrupted the social strata within Egypt, and hence widened the gaps between the classes.

As Egypt became more subordinated to British policies controlled from London, a huge proportion of wealth was redirected and the Egyptian labouring masses remained dictated by European monopolies. Egypt's further dependencies were pursued by a local ruling class made up out of big landowners and the bourgeoisie who were mainly Turkish in origin and had ties with the palace. This class was backed by the army of the British occupation, which carried out the maintenance of the country's integration with the capitalist world market (Hussein, M. 1973).

British exclusiveness as earlier mentioned was embodied in two of its social and sporting clubs. The Gezira and Turf clubs founded earlier in the occupational years were almost completely barred to the Egyptian population. Membership in either clubs was exclusively reserved for the British during this period. Furthermore it was considered as being extremely bad taste to bring an Egyptian to the club as a guest. Both clubs later

became objects of envy and hatred among the Egyptian population (Wolf, L. 1961). The British controlled the population by extolling their racial superiority, maintaining their isolation from the Egyptians and treating Egyptians as inferior people (Hussein, M. 1973).

Before the British occupation in 1880, Egyptian society was actively undergoing change. There were two important groups involved in the modernisation of Egypt. The first was involved in the foreign commercial and financial class that was attracted to Egypt by its developmental and investment opportunities. The second was a small number of Western-educated Egyptian intellectuals, trained in westernised schools in Egypt and Europe. Furthermore, native Egyptian men who were fortunate to gain an education pushed their way to gain access to the upper levels of bureaucracy and the army. Within the army, there existed another struggle to open the upper ranks of the army to all sectors of the society that had for long been exclusive to the upper classes (Tignor R., 1966).

According to Hussein, M. (1973)[3], the big bourgeoisie[4] was made up of two historically distinct branches where the older branch, which was not Egyptian, and was of European origin Greeks, Armenian and Jews from various countries. The colonial rule relied upon them, as they were isolated from the Egyptian nation. Furthermore, its role could help the prevention of the growth of a national commercial bourgeoisie. The newer Egyptian commercial bourgeois were from a rural origin, and as a result of World War II, a number of speculators and functionaries of non-rural origin became part of this bourgeoisie. The petty bourgeoisie occupied the middle position between the proletariat and proleterianised classes[5]. They possessed a small amount of capital in the form of a small

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[3] Mahmoud Hussein (1971) in his book, Class Conflict in Egypt: 1945-1970 describes the struggles of oppressed classes within the Egyptian population from World War II until Nasser's rule. The book further attempts to re-evaluate Nasser's regime within a proletarian, revolutionary conceptual framework.

[4] The terms, "big bourgeoisie" and "petty bourgeoisie", have extensively been used by Mahmoud Hussein, and in turn these terms are re-used within the thesis as it is the intention to present the contrasting differences between classes existing at that time.

[5] Mahmoud Hussein's use of the term "proleteriat" and "proleterianised" describe the ruling and ruled classes, where his choice of terms is relevant to his conceptual framework and approach discussed in his book.

plot of land, specialised training or just through utilising and managing their own financial or technical skills without using other labour powers (Hussein, M., 1973).

Class Transformation

Cutting the historical accounts short, the nationalistic movement that consequently appeared held the promise of independence from the West. Doctors, engineers and government clerks spearheaded an elitist movement for ending the locals' inferiority status. Other classes at this stage were still excluded due to lack of organisation because of their unawareness of the movement. As large landowners sent their sons to the government schools, many of them also became nationalists. It was also the case that some of the landowners connected to the nationalists and made peace with members of the group. Nationalism had been portrayed as a movement that would break down racial discrimination and further integrate the different strata of Egyptian society.

It is important to underline that Egypt had later witnessed and was effected by various political movements, largely embodied in the Nasser era which propagated major transformations within the classes. Nasser attempted to change the balance of class power in order to develop a state bourgeoisie as opposed to the traditional bourgeoisie. This allowed for new groups to achieve responsibility and control over certain economic and political levers of the country. The groups consisted of officers, engineers, economists and intermediate-level civil servants (Hussein, M. 1973). This largely modified the class structure at the expense of the traditional bourgeoisie and significantly increased the role of the state bourgeoisie.

The above historical events all showed patterns of segregation between people, which are embodied within the physical pattern of the environment. Rulers and occupiers demonstrated this as they were largely confined to certain areas while the lower classes were confined to other areas that have expanded throughout the years.

The above history describes political and economical movements that have had a major effect upon the social structure of Cairenes. During the British colonial era, Ismail's plans[6] had been residented by the foreign élite and the Egyptian upper classes. It was found important to highlight that Ismail's plans influenced the ruling class areas of residence, which is largely present to this day. Although Nasser's government has changed the social structure of Egypt, the new bourgeoisie continue to occupy Ismail's areas. **Fig 4.2** in **Chapter 4** illustrated that the new plans of Ismail also reflected a departure from the old city structure, which led to the creation of a newly planned city for the more affluent.

Throughout long periods of multiple occupation it had usually been the case that a foreign élite ruled Egypt, either taking Cairo as the capital base of power and in other instances a base for exploitation. Allocating the various transactions built up in layers since the medieval times largely configures the social and ethnic organisation of Modern Cairo. It demonstrates that the segregated social structure is based upon three different domains; religion, ethnic origin and occupation, which are closely interrelated and shape both the social and physical organisation of Cairo. As residency was closely related to employment, it is evident that many cultural groups were closely confined to different areas. Thus, later generations also inherited segregated patterns of occupancy and, in a sense, cultural groups were confined for many generations within certain areas.

Central Cairo mainly consists of two distinct physical communities divided by a single street extending from the railway to Abdin Palace. The "European" Cairo contrasts greatly with the old Egyptian Cairo and this manifests the city's physical and cultural duality. This dual form of Cairo presents the discontinuity between Egypt's past and future. To the East lies the native city with pre-industrial technology and social structure, and to the West lies the colonial city with its faster pace and wheeled traffic. The western side was planned in a grid like pattern, more or less a prototype of European cities, with

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[6] See **Chapter 4**, **fig 4.2**.

long and straight streets in total contrast to the old city 'labyrinth' of unpaved harat and durab.

Abu Lughod (1973) attempts to illustrate the existence of subdivisions in the city of Cairo according to lifestyle and the physical form. Her work is considered one of the earliest and most detailed, statistical and illustrative analysis of the historic, demographic and physical anatomy of Cairo. She derived a map from the statistical abstraction of data she had collected and from first hand knowledge of the city (see **Fig 10.2**) [7]. The map shows that Cairo had been subdivided into major districts that were direct consequences of the successive historical transformations that Cairo has undergone.

Fig. 10 shows 13 sub-cities of contemporary Cairo, these divisions have currently and massively undergone extensions to the North-south and East-west directions[8]. The situation at this present day exposes numerous clearings of slums, particularly at the waterfront area in *region I*, where tall office buildings and hotels have occupied certain pockets of urban slum. Furthermore *region VII* on the West Bank of the Nile has largely been extended to the West and South, 'pushing' *region VI* Westward. It is important to highlight on this map the area of Kasr el-Nil existing within the urban high area, illustrated within the map[9]. It has become the main attraction point for the visitors of the waterfront and was usually referred to by the subjects as a high social class area.

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[7] Abu-Lughod highlights the fact that the boundaries are only approximate, where the margins of some of the sub-cities lack homogeneity.

[8] Abu-Lughod's statistical analyses of Cairo at her time are currently considered out of date. The concern of this part of the thesis is not with the exact delineation of the different sub-divisions of Cairo. Therefore, it was only found appropriate here to highlight the evident existence of these subdivisions, in terms of the physical form and lifestyle, which exist in Cairo to the present day, but not with the exact boundaries of these places.

[9] This area had largely been referred to by the subjects during the interviewing sessions and is largely visited by the Cairene public. Furthermore, Kasr el-Nil occupies the area between dotted lines included within *region VII*

Figure 10: Map of different zones, according to lifestyle.

Source: Abu-Lughod, J. (1971)