Crime and Urban Planning in Egypt
Case Study: Greater Cairo

A Thesis Submitted in Partial Fulfillment of the Requirements of
M.Sc. Degree in Architecture (Urban Planning)

By

Arch. Heba Adel Ahmed Hussein
B.Sc., Department of Urban Planning and Design
Faculty of Engineering - Ain Shams University

Supervised by

Dr. Mohamed A. Salheen
Associate professor - Department of Urban Planning and Design
Faculty of Engineering - Ain Shams University

Dr. Randa A. Mahmoud
Assistant professor - Department of Urban Planning and Design
Faculty of Engineering - Ain Shams University

2011
الجريمة والتخطيط العمراني في مصر
دراسة لأقليم القاهرة الكبرى

رسالة مقدمة كجزء من المتطلبات للحصول على
درجة الماجستير في الهندسة المعمارية (تخطيط عمراني)

إعداد
م/ هبه عادل أحمد حسين
بكالوريوس الهندسة المعمارية. شعبة التخطيط والتصميم العمراني
كلية الهندسة. جامعة عين شمس

تحت إشراف
ا. م. د. محمد عبد الكريم صالحين
أستاذ مساعد - قسم التخطيط والتصميم العمراني
كلية الهندسة. جامعة عين شمس

د. رانده عبد العزيز محمود
مدرس - قسم التخطيط والتصميم العمراني
كلية الهندسة. جامعة عين شمس

2011
ABSTRACT

This study discusses the relationship between crime and different elements of the urban environment within the Greater Cairo Region (GCR). It is worth mentioning that several researchers in the past have tried to understand this relationship at the level of different areas, in their forefront: Jane Jacobs (1961); who indicated that the feeling of safety could be achieved by increasing the number of people using a particular area, and Oscar Newman (1973); who introduced his new idea of “Defensible space” and contradicted Jacobs’ concept.

To achieve the purpose of this study, the researcher depended on social and physical analysis of the urban environment on both districts and neighborhoods levels and the extraction of the common factors that probably led to increasing crime rates as follows:

- For the districts level, the main agglomeration districts were investigated in detail; including both social and physical characteristics. Based on the correlation between crime rates as dependent variable and the social/spatial factors as independent variables, analysis showed that increasing socially deteriorated areas within a district helps in increasing the district’s criminals and the crimes committed within the adjacent ones. Analysis also showed that grid street network, weak or exaggerated natural surveillance are the key factors in increasing crime rates.

- For the neighborhoods level, the neighborhoods in which the Maadi’s serial killer committed his incidents were selected to be analyzed. Comparing the studied neighborhoods showed that the existence of grid street network, low population density, deficiencies in spaces’ hierarchy, linear tissues and high-rise buildings could enhance opportunities for crime.

Comparing the previous results showed that improving the physical environment through the good street layout which induces the natural movement, in addition to upgrading of population socio-economically; especially within the socially deteriorated areas, are the most informative tools in decreasing crime rates within the GCR.

Finally, the study recommends the need for cooperation among legislators, local governments, planners and designers, criminologists and organizations within different ministries in order to get a secured, well-planned environment with lower crime opportunities and the minimum number of criminals.
Heartily dedicated to:

My late grandmother,

my beloved parents, and

my wonderful sister

for their endless love, support and sacrifice throughout my life
**TABLE OF CONTENTS**

DEDICATION .................................................................................. I
TABLE OF CONTENTS ..................................................................... II
LIST OF FIGURES ........................................................................ V
LIST OF TABLES ........................................................................... VIII
LIST OF ACRONYMS ..................................................................... IX
ACKNOWLEDGMENT ..................................................................... XI
ABSTRACT ...................................................................................... XII

Chapter One: INTRODUCTION
1.1. RESEARCH PROBLEM ............................................................... 1
1.2. RESEARCH HYPOTHESIS ......................................................... 2
1.3. RESEARCH IMPORTANCE ......................................................... 2
1.4. RESEARCH OBJECTIVES ......................................................... 2
1.5. RESEARCH BOUNDARIES ....................................................... 3
1.6. RESEARCH METHODOLOGY ................................................... 4
   1.6.1. Theoretical Method ......................................................... 4
   1.6.2. Descriptive Method ......................................................... 4
   1.6.3. Analytical Method ......................................................... 5
1.7. RESEARCH STRUCTURE .......................................................... 6

Chapter Two: LITERATURE REVIEW
2.1. INTRODUCTION ........................................................................ 8
2.2. SOCIAL ASPECTS AND CRIME DISTRIBUTION ....................... 8
2.3. ENVIRONMENTAL ASPECTS AND CRIME DISTRIBUTION ...... 14
   2.3.1. The Routine Activity Theory ......................................... 14
   2.3.2. The Crime Pattern Theory ............................................ 15
   2.3.3. The Rational Choice Theory ......................................... 16
2.4. URBAN DESIGN THEORIES AND CRIME ......................... 17
2.5. CRIME FACTORS .................................................................... 25
   2.5.1. Social Factors .............................................................. 25
      a. Social disorganization .................................................. 25
      b. Attitude of residents toward crime and toward law enforcement .................................................. 25
   2.5.2. Physical Factors ............................................................ 26
      a. Physical environment .................................................. 26
      b. Natural environment .................................................... 31
   2.5.3. Anthropological Factors ............................................... 32
      a. The organic constitution of the criminal ...................... 32
      b. The mental constitution of the criminal ...................... 32
      c. The personal characteristics of the criminal ................ 32
2.6. CRIMINAL’S BEHAVIOR: THE RELATIONSHIP BETWEEN CRIME’S LOCATION AND CRIMINAL’S BASE .......... 33
2.7. CONCLUSION ......................................................................... 36
Chapter Three: THE GREATER CAIRO REGION

3.1. INTRODUCTION ................................................................. 37
3.2. DEFINING THE GREATER CAIRO REGION ....................... 37
3.3. POPULATION ........................................................................ 39
3.4. GOVERNANCE AND URBAN MANAGEMENT STRUCTURES 41
3.5. NATURAL ENVIRONMENT .................................................. 41
   3.5.1. Geographic Location ............................................... 41
   3.5.2. Topography .......................................................... 41
   3.5.3. Weather Conditions ................................................. 41
3.6. SOCIAL CHARACTERISTICS ............................................... 42
   3.6.1. Population Density .................................................. 42
   3.6.2. Rate Scramble ........................................................ 44
   3.6.3. Educational Condition .............................................. 45
   3.6.4. Economic Condition ............................................... 46
   3.6.5. Internal Migration Rate ............................................ 47
3.7. PHYSICAL CHARACTERISTICS .......................................... 48
   3.7.1. Street Network ........................................................ 48
   3.7.2. The Urban Fabric/Physical Tissue ................................ 50
3.7.3. Land Use ...................................................................... 52
   a. Residential area ........................................................ 52
   b. Non residential areas including: .................................. 59
3.8. CRIME RATES ................................................................. 62
   3.8.1. Earlier Studies Of Crime ........................................... 62
   3.8.2. Public Security Bureau (Psb) Statistics ......................... 65
   a. Average crime incidents over Egypt .............................. 67
   b. Average Crime incidents over the GCR ....................... 69
   c. Crime rates over the GCR ............................................. 72
3.9 CONCLUSION ..................................................................... 74

Chapter Four: UNDERSTANDING CRIME AT THE DISTRICTS LEVEL

4.1. INTRODUCTION .................................................................. 75
4.2. IDENTIFYING THE STUDIED DISTRICTS ............................ 75
4.3. SOCIAL ANALYSIS .......................................................... 76
4.4. PHYSICAL ANALYSIS ....................................................... 79
   4.4.1. Street Network ........................................................ 79
   a. Drawing methodology ................................................. 80
   b. Space syntax analysis ............................................... 83
   4.4.2. Land Use .............................................................. 95
   a. Residential areas ....................................................... 95
   b. Other land uses ........................................................ 97
4.5. CONCLUSION .................................................................... 98

III
LIST OF FIGURES

Figure (1-1) The Total Number Of Urban Crimes In Egypt During (1970-2008)2
Figure (1-2) The Percentages Of 2008’s Urban Crimes Over The Egyptian Governorates ..........................................................3
Figure (2-1) Balbia And Guerry Maps Comparing Crime And Instruction .......9
Figure (2-2) The Concentric Zone Model.................................................10
Figure (2-3) Crime Pattern Theory And The Basic Crime Triangle..............15
Figure (2-4) Architect’s Vision Of Communal Corridor and Actual 3rd Floor Communal Corridor of Pruitt-Igoe........................................19
Figure (2-5) Location of Pruitt-Igoe & Carr Square Village......................20
Figure (2-6) Current Situation In Pruitt-Igoe............................................21
Figure (2-7) Subdividing Space To Achieve The Territorial Control............22
Figure (2-8) Potential Pedestrian Paths On Large Blocks Vs. Potential Pedestrian Paths On Short Blocks.........................................26
Figure (2-9) Cul-de-sacs vs. Well-connected street network ......................27
Figure (2-10) Hierarchy Of Spaces..........................................................28
Figure (2-11) The Relationship Between The Increase In Crime And Increased Building Height. .........................................................29
Figure (2-12) Comparison Of A Visible Lobby Represented By Highbridge Houses and Invisible One Represented By Bronxdale Houses..........30
Figure (2-13) Comparison Of Two Ways To Subdivide The Same Building Envelope To Serve The Same Number Of Families ......................31
Figure (2-14) Center Of Gravity.............................................................34
Figure (2-15) Center Of Minimum Distance............................................35
Figure (2-16) Circle Theory.................................................................35
Figure (2-17) Commuter And Marauder Models .....................................36
Figure (3-1) Different definitions of GCR ..............................................39
Figure (3-2) Classification of studied districts........................................40
Figure (3-3) Governorates structure of the Greater Cairo Region ..............42
Figure (3-4) Population densities over the study area districts ..................43
Figure (3-5) Rate scramble over the study area districts .........................44
Figure (3-6) Illiteracy rates over the study area districts ..........................45
Figure (3-7) Unemployment rates over the study area districts .................46
Figure (3-8) Internal migrants rates over the study area districts ...............47
Figure (3-9) The intersection among different social factors ....................48
Figure (3-10) Different types of street networks.....................................49
Figure (3-11) Examples of different types of street networks ...................50
Figure (3-12) Examples of nolli maps ..................................................50
Figure (3-13) Dot shape pattern in 6th of October district and Nozha districts 51
Figure (3-14) Linear shape pattern of Mataria district and Al-Abagia housing in Khalifa district ................................................................. 51
Figure (3-15) Compact shape pattern in Gamaleya district and Manshiet Nasser district ................................................................. 52
Figure (3-16) Districts with old deteriorated residential areas ........................................... 54
Figure (3-17) Old deteriorated residential areas in the downtown ..................................... 54
Figure (3-18) Districts with public housing areas ............................................................ 55
Figure (3-19) Public housing in Misr El-Qadima district ................................................ 55
Figure (3-20) Districts with shelter housing areas ............................................................. 56
Figure (3-21) Shelter housing in Manshyet Nasser District ............................................. 56
Figure (3-22) Example of an informal residential developed on privately owned land (Arab El-Hesn, Al-Mataria district) ........................................... 57
Figure (3-23) Example of an informal residential developed on an agricultural land (Ezbet El-Asal, Shobra district) ........................................... 57
Figure (3-24) Unsafe area in a landslide area- Manshiat Nasser district ............... 58
Figure (3-25) Buildings made of ad-hoc materials (Ezbet el-Haggana – Madinet Nasser district) ........................................................................................................... 58
Figure (3-26) Districts with informal housing areas ........................................................... 59
Figure (3-27) GCR landuse............................................................................................... 61
Figure (3-28) The relation between informal settlements population and robbery ................................................................................................................................. 63
Figure (3-29) Percentages of studied crime incidents’ over Egypt during the study period (2004-2008) ........................................................................................................... 68
Figure (3-30) Distribution of average crime incidents over the Egypt during the study period (2004-2008) ........................................................................................................... 69
Figure (3-32) Percentages of average crime incidents’ over the GCR during the study period (2004-2008) ........................................................................................................... 71
Figure (3-32) Distribution of crime incidents’ average over the study area (2004-2008) ................................................................................................................................. 72
Figure (3-33) Percentages Of Crime Incidents’ Rates Over The Gcr (2004-2008) ................................................................................................................................. 73
Figure (3-34) Crime Rates Over GCR during The Study Period (2004-2008) .................. 74
Figure (4-1) Agglomeration Districts Classification .......................................................... 79
Figure (4-2) Example Of Wide Planted Middle Islands, Khalifa Ma’mon St., Misr Elgadida District .................................................................................................................. 80
Figure (4-3) Example Of Narrow Middle Islands, Sudan St., Dokki District ... 81
Figure (4-4) Examples Of Nodes And Open Areas, Roxy Square- Misr El-Gadida District And Galaa Square-Dokki District ................................................................. 81
Figure (4-5) Example Of Fenced Private Areas, Madinet Nasr 2nd District .... 82
Figure (4-6) Example Of Building Open Spaces That Impede Visibility, Emtad Ramisis Buildings - Madinet Nasr 2nd District

Figure (4-7) Spatial Analysis Of Mataria District

Figure (4-8) Spatial Analysis Of Manshyet Nasser District

Figure (4-9) Spatial Analysis Of Boulaq Dakrour District

Figure (4-10) Spatial Analysis Of Misk El Gadida District

Figure (4-11) Spatial Analysis Of Madinat Nasr 2nd District

Figure (4-12) Spatial Analysis Of Dokki District

Figure (4-22) Street Network Patterns

Figure (5-1) Potential Incident Sites

Figure (5-2) Similarities Between Lombroso’s Description (Left) And The Criminal’s Physical Characteristics (Right)

Figure (5-3) Crime Trips Direction

Figure (5-4) Methods Used To Define The Relationship Between Incidents And The Criminal’s Base

Figure (6-1) Recommendations For Improving The Urban Environment
LIST OF TABLES

Table (2-1) The Defensible Space Concepts..................................................22
Table (2-2) The CPTED Principles.................................................................24
Table (3-1) No. of Districts, Land Area, Population, Inhabited Area And Population Density In The Study Area.........................................................40
Table (3-2) Informal Settlements Within The Study Area..............................58
Table (3-3) Average Crime Incidents Over Egypt During (1952-2002).............63
Table (3-4) Crime Rates Over The Five Years Of El-Miligy Study...............64
Table (3-5) Crime Rates Over The Last Year Of El-Miligy Study......................65
Table (3-6) Crime Rates Over The Five Years, Last Year Of El Miligy Study65
Table (3-7) Gcr’s Studied Crimes.................................................................67
Table (3-8) Numbers And Percentages Of Crimes During The Study Period (2004-2008).................................................................................................68
Table (3-9) Average Incidents Numbers And Ranks Over Egypt’s Governorates During The Study Period (2004-2008)........................................70
Table (3-10) Numbers And Percentages Of GCR Crimes During The Study Period (2004-2008) ........................................................................71
Table (4-1) rates of change between the highest and lowest values of different social factors according to the last census results (2006).............75
Table (4-2) the correlation between crime and different social factors according to the last census results (2006).....................................................77
Table (4-3) social characteristics of the selected districts and their crime data during the study period (2004-2008)......................................................80
Table (4-4) correlation values between space syntax measures and crime rates within districts generating criminals during the study period (2004-2008)..............90
Table (4-5) correlation values between space syntax measures and crime rates within districts attracting criminals during the study period (2004-2008).................91
Table (4-6) correlation values between street patterns and crime rates during the study period (2004-2008)..............................................................94
Table (4-7) correlation between the existence of studied formal housing areas and crimes rate during the study period (2004-2008).................................95
Table (4-8) correlation between the existence of informal housing areas and crime rates during the study period (2004-2008)..........................................96
Table (4-9) correlation between studied land uses and crime rates during the study period (2004-2008)...............................................................97
Table (5-1) The Social And Physical Factors Of The First Neighborhoods Group.............................................................................................................106
Table (5-2) The Social And Physical Factors Of The Second Neighborhoods Group........................................................................................................114
LIST OF ACRONYMS

AKTC     Aga Khan Trust for Culture.
CAPMAS   Central Agency of Public Mobilization and Statistics.
CBD      Central Business District.
CG       Center of Gravity.
CMD      Center of Minimum Distance.
CPTED    Crime Prevention Through Environmental Design.
ECWR     Egyptian Center for Women's Rights.
GCER     Greater Cairo Economic Region.
GCMA     Greater Cairo Metropolitan Area.
GCPR     Greater Cairo Planning Region.
GCR      Greater Cairo Region.
GOPP     General Organization for Physical Planning.
ISDF     Informal Settlement Development Facility.
JICA     Japan International Cooperation Agency.
MOHUUD   Ministry of Housing, Utilities and Urban Development.
NUC      New Urban Communities.
NCSCR    National Center for Social and Criminological Research.
PSB      Public Security Bureau.
ACKNOWLEDGMENT

First of all, praise to Allah, the giver of all knowledge, for giving me the strength and ability to complete this study.

I would like to express my sincere gratitude and acknowledgment to those without whom this thesis would not have been completed. I am very grateful to my supervisor, Dr. Mohamed A. Salheen, for his guidance, understanding and invaluable advices. I cannot forget his constant support throughout this long trip. It has been an honor to pursue this study under his instruction. To him, I offer my genuine respect and gratitude.

Special thank goes to Dr. Randa A. Mahmoud for her kindness, encouragement, advice, supervision, and crucial contribution that improved the quality of this study.

Besides my advisors, I would like to thank the rest of my thesis committee: Prof. Dr. Youhansen Eid and Dr. Hany Ayad, for their insightful comments and helpful suggestions.

I would like also to thank the director of the criminal statistics department at the Public Security Bureau: Major-general Mohamed Khalil for providing me with the information I need and the fruitful discussions which guided me at the analytical part of this study.

My thanks also go to the Department of Social Planning at the Higher Institute of Social Service in Cairo, specifically to Dr. Khaled A.Fattah for his time, effort, and cooperation that were necessary for the completion of the social part of my dissertation. His contributions are greatly appreciated.

I also would like to thank the Space Syntax Laboratory at University College London (UCL) for providing UclDepthmap software; through which I conducted some of the analysis involved in this dissertation.

Finally, I would like to express my sincere gratefulness to my father, mother, sister and all my supportive family for their encouragement, patience, tolerance, and support.

Heba Adel Ahmed
Chapter One

INTRODUCTION

1.1. RESEARCH PROBLEM
1.2. RESEARCH HYPOTHESIS
1.3. RESEARCH IMPORTANCE
1.4. RESEARCH OBJECTIVES
1.5. RESEARCH BOUNDARIES
1.6. RESEARCH METHODOLOGY
1.7. RESEARCH STRUCTURE
1. Introduction

Crime is not considered a new phenomenon in our community, it is a part of any social system; defined as ‘a pattern of social acts committed in violation of law’. Crime has been known by human communities since its origins. It differs from community to another, even within the one community as it doesn't occur in all places with the same rate and the same way. It also concentrates in some places than others, sometimes increases, sometimes decreases etc.

Previous researches have proved that crime rate has a significant correlation with different social factors such as levels of education (Adriano Balbi and Andre Michel Guerry, 1829), poverty rates (Marx and Engels, 1848) and the lack of social organization (Shaw and Mckay, 1942), while others have drawn the attention to its relation with the built environment (Jacobs, 1962; Newman, 1973; Hillier, 1984). They proposed that crime occurs in places where opportunities are available for criminals to commit their crimes in addition to the presence of criminals themselves. Here comes the role of this study to identify different urban circumstances which might be related to crime occurrence and the ways to reduce it either through decreasing the available opportunities for criminals (by giving them the feeling of being watched which in turn spells out potential trouble for those attempting to commit any criminal act) or facilitating their arrest if the crime has been already committed by giving them no chance to escape.

1.1. Research problem

Statistics show that the total number of urban crimes in Egypt has significantly increased in the last few years (2004-2008). According to the Public Security Bureau’s reports, the number of those crimes during the early seventies till the mid-eighties showed a significant decrease, followed by a slight increase lasted till the early nineties. Shortly, a new decrease appeared and lasted until the beginning of the millennium. Since that time, there was a rapid increase in incidents numbers which reached its peak in 2008. Figure (1-1) shows the total number of urban crimes in Egypt during the mentioned period.

---


2 A criminal activity occurred in an urban space, usually in a public area, including homicide and attempted murder, assaults including battery with injury or death, kidnapping, sexual harassment, rape, robbery and arson.