

MEDIA, NEIGHBORHOOD CONDITIONS, AND TERRORISM RISK: WHAT
TRIGGERS FEAR OF TERRORISM?

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ABSTRACT OF THE DISSERTATION

Media, Neighborhood Conditions, And Terrorism Risk: What Triggers Fear Of
Terrorism?

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Fear is an emotional personal response to crime and symbols evoking crime. Criminologists have long endeavored to explain how and why crime (and fear as a response) exists in societies. Fear of terrorism is a relatively more specific degree of fear of crime, however terrorism fear is an understudied topic within criminology, and its correlates need to be explored in the light of what is currently known about fear of traditional crimes.

Extant literature suggests that fear of crime may result from individual differences, neighborhood conditions (environmental context and level of crime in neighborhoods). It is also argued the mass media influence the level of fear. Besides, there is a gap in the literature on spatial aspect of fear. Do the people fearful of terrorism live in places of actual terrorist incidents?

Drawing on the individual perceptions of local conditions and the prevalence of the actual crime (terrorism), the basic purpose of the dissertation is to examine fear of terrorism at various levels (individual and neighborhood) in Istanbul. The focus is on four main points: (1) the relationship between the neighborhood context and its residents' fear

of terrorism, (2) a possible overlap between neighborhoods with terrorism risk in space and their residents' levels of fear (3) the impact of the media on fear of terrorism, controlling for other correlates, (4) the comparison of terrorism fear to the fear of traditional crimes.

Three datasets are used for this purpose: (1) a cross-sectional survey of a random sample of 1874 residents, (2) incident summaries of terrorist acts committed between 2008 and 2012, (3) geo-referenced datasets on infrastructure. The results suggest that certain social (e.g., subcultural diversity), environmental (e.g., disorder), and individual (e.g., gender) factors remain significant predictors of crime fear while terrorism fear is associated with the extent to which participants consume terrorism related media coverage. Policy implications and future directions are discussed in the thesis.

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List of Abbreviations

ANOVA	Analysis of Variance
DHKP/C	Revolutionary People's Party/ Front
DK	Revolutionary Headquarters
GIS	Geographic Information Systems
HLM	Hierarchical Linear Modeling
IBDA/C	Great Islamic Raiders / Front
IPD	Istanbul Police Department
MKP	Maoist Communist Party
MLKP	Marxist Leninist Communist Party
PKK	Kurdistan Workers Party
RTM	Risk Terrain Modeling
RTMDx	Risk Terrain Modeling Diagnostics Tool
TIKB	Revolutionary Communist Union of Turkey
TKIP	Communist Labor Party of Turkey
TKP/ML	Communist Party of Turkey/Marxist Leninist
TNP	Turkish National Police
TUIK	Turkish Statistical Institute
VIF	Variance Inflation Factor

CHAPTER I : INTRODUCTION

More than 2000 years ago, Chinese scholar Sun Tzu stated, “when you kill one, you threaten all”. Over the millenniums following this statement, the world has experienced the various forms of violence, and there have been systematic threats to humanity. Targeting innocent civilians, terrorism has become one form of security problems in the contemporary world. It has threatened the national security of many countries. In addition to the ruthlessness of its actors, terrorism has caused fear in individuals. People are fearful of terrorism because they feel their life or properties are under the threat of being lost or damaged. This feeling of fear related to terrorism might arise from various factors, one being consumption of terror-related coverage in the media. In fact, terrorism has intensely been introduced and publicized through the mass media (Lynch, 1996), though the frequency of terrorist activities is relatively rare in many countries. As such, the media are often exploited by terrorist groups as a means of communication (Schmid & Graff, 1982).

News in the media on crime has been related to fear of crime. Existing research argued that what people have seen and experienced shapes their level of fear along with some individual characteristics, and media has contributed significantly to this process (Chiricos et al. 1997). Similar to the traditional crimes, the broadcasts of terrorist attacks may spread fear of terrorism across the masses (Schmid & Graff, 1982). However, there is very few empirical studies that have compared different aspects of fear of crime to fear of terrorism along with the exposure to media.

Apart from the scope of terrorism problem and who gains from terrorism-related coverage, there is, in the academia, the discussion that fear of terrorism may be a result of

the experience of violence as a consequence of terrorist acts, which has resemblance to the fear of traditional crimes in this respect.

Being a byproduct of crime, fear is a personal response to crime, showing a variation based on the individual characteristics and the environment where an individual is living. Fear of crime also includes a concern for safety (Taylor, 1999). For several decades, researchers have paid significant attention to the individual and environmental factors that drive fear of crimes, and the negative effects of this fear (Karakus, et al., 2010). Specifically, they have offered four major models (including individual and contextual variables) to account for the variation in fear of crimes among individuals; the victimization model, the disorder model, the community concern/control model, and the subcultural diversity model. Although these models have emerged in western societies, research on the fear of crime in Turkey also suggested similar impacts of fear of crime models on the variation in fear among individuals in Turkey. Hence, these models are likely to have explanatory power in an analysis of fear of terrorism among Turkish citizens.

Another aspect of fear of crime and terrorism is its relationship with built environment. The environment in which crimes occur is important to influencing levels of fear of crime in land users (Nasar & Fisher, 1993). However, whether there is an overlap of crime locations with neighborhoods where fearful residents are living there needs more probation in any society.

Profiting from the above-mentioned frame of references, this dissertation is an effort to understand the nature of fear of terrorism in another context outside the US. There are three points to be focused on throughout the research process: (1) the

relationship between the neighborhood context and its residents' fear of terrorism, (2) a possible overlap between neighborhoods with terrorism risk and their residents' levels of fear (3) the impact of the media on fear of terrorism among residents of Istanbul. The main thesis is that the impact of the media would be largest in shaping fear of terrorism because of the disproportionality of the frequency of terrorist incidents to the levels of fear in individuals.

I.A. Purpose of The Study

This study basically seeks to examine various sources of fear of a specific crime, terrorism. As terrorism is a rare event relative to such other crimes as burglary or robbery, the consumption of the media coverage about terrorism is assumed to play a key role in shaping fear of terrorism. But, a mere examination of the relationship between media and fear of terrorism would be deceptive as the literature suggests that the fear of traditional crimes has other individual, societal, and environmental correlates. Therefore, this study takes socio-environmental context as well as the prevalence and risk of terrorism into account in the analysis of fear of terrorism.

There is a difficulty in doing such an analysis because extant literature doesn't suggest a clearly articulated theoretical background for fear of terrorism. On the other hand, scholars who studied fear of terrorism have suggested that a combination of personal characteristics and the features of the environment contribute to the level of fear of terrorism. For example, Ally and Green (2010) asserted that fear from a terrorist attack "is directly related to the perceived threat of terrorism and presence of a certain stimuli in the individual's proximate environment that induces a fear response" (p.272).

To the best knowledge of the researcher, the relationship between fear of terrorism and the features of the physical landscape in their neighborhoods has not been empirically studied yet. Beside, the empirical support is scant to safely conclude that neighborhoods with residents fearful of terrorism are the ones with high-risk places in respect for terrorism. Hence, the current study attempts to explore the spatial aspect of fear of terrorism.

In this framework, drawing on the individual perceptions of local conditions and the prevalence of the actual crime (terrorism), the basic purpose of this dissertation is to examine individual fear of terrorism living different neighborhoods of Istanbul, Turkey. In other words, this study probes fear of terrorism given known correlates of fear of crime while taking the impact of media, actual risk and neighborhood context into account.

I.B. Significance of The Study

This study aims to investigate the relationship between fear of terrorism and exposure to terrorism news in the media, borrowing the other causes of fear of crime and the impact of the media on this fear from criminological literature. Extant research involves a variety of factors that shape fear of traditional crimes in persons, which include individual (e.g. gender), environmental (e.g. disorder or crime), and contextual (e.g. collective efficacy) variables. Research on the fear of crime in Turkey also reported a similar impact of these factors on the variation in fear among individuals. Consistent with findings reported in Western literature, for example, empirical research found that females had higher levels of fear of crime compared to males in Turkey. Moreover, prior victimization and neighborhood disorder facilitated fear of crime whereas neighborhood

integration and satisfaction with police inhibited fear of crime among Turkish citizens (Karakus et al., 2010).

As detailed later in this study, the literature is helpful in creating an understanding of the relationship between fear of crime, media, and other contextual factors. Much prior research and theorizing about the fear of crime and the impact of the media on this fear, however, has focused on the fear of certain violent and property crimes. On the other hand, various scholars have placed an emphasis on the need for an examination of the fear of different crimes separately, as each crime might have different theoretical mechanisms (Ferraro, 1995; Wilcox Rountree, 1998). In fact, little is known about the predictors of terrorism-specific fear (Forst, 2007) as the fear of terrorism has been subject to relatively little empirical research. Fear of terrorism, hence, represents an understudied dimension of fear of crime in both the Western and Turkish literature. That's why, the present study aims to extend the research on this crime-specific fear. In addition, the relationship between the personal exposure to terror-related media coverage and fear of terrorism is an understudied topic in the literature. Still, theoretical approaches to explain fear of crime need to be tested in different societies for different crime types.

Taken together, this study is expected to contribute to the literature by (1) identifying correlates of fear of terrorism (2) measuring the impact of the media on this fear (3) testing the association of fear and terrorism risk in space.

CHAPTER II: THEORETICAL FRAMEWORK

Sociology of Crime & Fear

Fear is an emotion that exists in every individual. The conceptualization of this feeling, however, requires an in-depth thinking. Such concepts as anxiety, anger or despair have been interchangeably used in the psychology and life sciences to equate with fear (Bursick & Grasmick, 1993; Warr, 2000). Likewise, there has not been a clear distinction between emotion, perception and cognition. According to Warr (2000):

"Although fear may result from the cognitive processing or evaluation of perceptual information (e.g. a judgment that an approaching male is armed, or that a sound signals danger), fear is not itself a belief, attitude, or evaluation. On the contrary, fear is an emotion, a feeling of alarm or dread caused by an awareness or expectation of danger...(p.453).... In short, fear is not perceived risk; by all indications, it is its consequence." (p.454).

In a similar vein, Ferraro and LaGrange (1987) defined fear as "negative emotional reactions generated by crime or symbols associated with crime" (p.73). Hence, fear of crime can be qualified as a negative emotion stemming from crime and the symbols evoking that crime. On the other hand, judgments and risks are also different from fear in that they involve cognitive response to victimization or a calculation of the likelihood of victimization (Ferraro, 1995; Hale, 1996). Be it noted that a conceptual differentiation of fear of crime from other types of fear is a source of confusion. Leaving the detailed discussion of conceptual discrepancies aside, criminological aspect of fear is discussed in this chapter.

Criminologists have long endeavored to explain how and why crime (and fear as a response) existed in societies. While some criminological theories have sought explanation of criminal behavior in individuals' characteristics, others have placed an emphasis on socio-environmental factors. For the purpose of the current study,

criminological theories that explain criminal behavior and crime fear are considered to be key to understand fear of terrorism. In this vein, Social Disorganization Theory, Routine Activity Theory, and Broken Windows Theory may help to understand why crime as a problem and fear as a response flourish in communities. In addition to these three theories, Cultivation Theory is helpful in examining the role of the media in shaping individual's fear of crime.

II.A. Social Disorganization Theory

Social Disorganization Theory basically contends that neighborhood conditions rather than individual ones contribute to the occurrence of crime in communities. Scholars in early 20th century contended that different fields of science such as the geography and ecology studied the city from their perspectives, but it was not examined within a social perspective (Park & Burgess, 1925). Hence, the city was in need to be handled with its habits and the customs of its residents because it was a living entity with a physical structure, moral order, and the economic aspect as the city's organization was based upon the division of labor. Since this living entity is open to changes, the change in the organization of cities brought about indirect (secondary) and direct (face-to-face) relations of individuals in the community. Unlike the dynamics of rural areas, interpersonal relations were weaker in urban areas. Weakened intimate and real relationships in the larger cities resulted in a weak control in the smaller local units that included neighborhood as the smallest unit in the social and political organization of the city (Park & Burgess, 1925).

To understand the dynamic changes at the city level, a definition of neighborhood was important. In 1926, Zorbaugh described the natural area as "a geographical area

characterized both by a physical individuality and by the cultural characteristics of the people who live in it” and as “...the unplanned, natural products of the city’s growth” (Zorbaugh, 1926, cited in Timms, 1975: 6). Inhabitants were to “...give to the area its peculiar character”. Robert Park later introduced the concept “neighborhood” and defined the natural area as an ecological collective and the neighborhood as a society (Timms, 1975).

Having followed those views and studied the problem of juvenile delinquency in Chicago, Shaw and McKay (1972) observed that some neighborhoods had a cluster of traditional delinquent behaviors over time regardless of their composition of race or socioeconomic status. Neighborhoods with a high economic deprivation were experiencing high rates of population turnover. These were undesirable residential areas, and once people living there had the economic opportunity, they were leaving it for a better neighborhood (Kornhauser, 1978; Wilson, 1987). As the composition of these areas was changing rapidly, they could not organize well to resist to the influx of different groups. As a result of this influx, racial and ethnic heterogeneity were common characteristics that have limited occasion to achieve common goals of their residents. This structure of community became a barrier to maintain effective social control. Therefore, the residents of an area could not develop ties to supervise local behaviors of people in public (Bursik & Grasmick, 1993; Shaw & McKay, 1972).

Social disorganization theorists assumed that ecological conditions which are low socioeconomic status, residential mobility, heterogeneity (ethnic and racial), and weak social networks were determinant in the presence or absence of crime in a neighborhood (Bursik & Grasmick, 1993), which resulted in a disadvantage at individual and

institutional level of social life, and increased crime rates (Wilson, 1987). In this respect, Social Disorganization was defined as “the inability of local communities to realize the common values of their residents or solve community experienced problems” (Bursik, 1988 p. 527). Later on, the definition was expanded by Sampson and Groves (1989) as “the inability of a neighbourhood to achieve the common goals of its residents and maintain effective social controls’ (p. 777).

Until Sampson and Groves` (1989) empirical study in Great Britain, the theory had never been tested. Drawing on data from two surveys, they found that crime and delinquency were associated with neighborhoods characterized by low socio-economic status, high residential mobility, ethnic heterogeneity and family disruption. In addition, they operationalized social disorganization by weak local friendship networks, low organizational participation and unsupervised youth groups as these factors limit the capacity of neighborhood residents to control behavior in public places. Later on, scholars also contended that the community structure has an influence on its ability to maintain public order, and constrain residents from breaking rules (Markowitz et al., 2001), which prevents crime and fear of people living in the society (Taylor & Covington, 1993).

Other scholars have had contributions to the Social Disorganization Theory as well. Bursik and Grasmick (1993) argued that the theory needed an explanation of how social control operates in a neighborhood. For them, social control is “the effort of the community to regulate itself, and behaviors of residents and visitors to the neighborhood” (Bursik & Grasmick, 1993: p.15). They integrated systemic model into the theory, in which “the local community is viewed as a complex system of friendship and kinship

networks and formal and informal associational ties rooted in family life and ongoing socialization processes” (Kasarda & Janowitz, 1974: p.329).

According to Systemic Model, primary relational ties (e.g. among family or friends) and secondary relational ties (e.g. among neighbors) in a community mediate the effect of neighborhood structural constraints on crime. Dense social ties affect levels of social control, which are private (e.g. control in a family) and parochial (e.g. control among neighbors). Social ties also impact the levels of solicitation of external resources, which determine level of public control in neighborhood (e.g. services provided by the police). Private and parochial controls influence the effective socialization in a neighborhood. While the informal control operates at the private and parochial levels, public control is related to formal control. Informal control in a community has three components that are informal supervision, movement governing rules (change in transportation or moving outside), and direct intervention (e.g. scolding rowdy teenagers). The system as a whole is determinant of crime rates in a neighborhood (Bursik & Grasmick, 1993). In this perspective, dense social ties may mediate between neighborhood factors and crime and fear. Social ties may stimulate or hinder the effort against crime in a particular locality.

The systemic model of social control proposes that crime and victimization is less likely when relational ties are strong in a neighborhood and residents are integrated to these networks. In respect for fear, Bursik and Grasmick (1993) suggest that fear of crime will be higher in those neighborhoods with strong relational ties as every crime and victimization will be spread through relational ties among residents. But, the social cohesion is supposed to decrease crime, hence, decreasing fear of crime.

Social networks are crucial in spreading the information about crime throughout the neighborhoods. The more one is embedded in social networks, the more likely he or she will be exposed to crime-related information, thus, being more fearful. In other words, what happened to others may affect the level of fear in persons. For Bursik and Grasmick (1993), crime-related news doesn't have an influence on individual fear of crime as these news are not informative to people, and people know that serious crimes occur in high-crime areas in a city. They further argued "the fear of crime also may be a highly symbolic emotional response to a much broader set of neighborhood characteristics than the crime-related news that is transmitted through these networks" (Bursik & Grasmick, 1993: p.93). Hence, people are not afraid of crime if the neighborhood is not a crime area, or crime didn't happen to someone in the individual's social network.

Bursik and Grasmick (1993) also argued that familiarity with the environment attenuates the impact of potentially threatening situations. Being a familiar context, neighborhood provides a feeling of safety, as people are dominantly not strangers. They supported this argument by drawing on Merry's (1981) findings that residents who know the offenders in their neighborhood are less fearful than those for whom the offender is anonymous.

Therefore the relations among neighbors matter to crime and fear, and these relations must be active in the form of collective efficacy. In their collective efficacy approach, Sampson et al. (1997) argued that socioeconomic factors influence the collective action in neighborhoods, and collective efficacy is defined as the linkage of cohesion and mutual trust with shared expectation of intervening in support to maintain

informal social control in a neighborhood (p. 919). It includes widespread and shared participation in social organizations, widespread and positive social ties, and willingness to intervene in troublesome situations. In their study, Sampson et al. (1997) found that collective efficacy has an independent effect on crime. They argued that collective efficacy mediates between the effect of structural constraints and crime.

In sum, social disorganization theory views crime and fear arising from it as a consequence of neighborhood conditions, relational ties among their residents, and their actions for neighborhood safety. Social disorganization theorists have viewed the strength of social ties and neighborhood cohesion as an alleviating factor for crime and fear. According to Bursik and Grasmick (1993), however, social disorganization theory lacks how crime is committed in a neighborhood, and how victimization happens, resulting in fear of crime. In other words, the convergence of offenders and victims in a neighborhood is not clear in the theory, which routine activity theory unfolds.

II.B. Routine Activity Theory

While neighborhood characteristics comprise one set of dynamics behind the crime and fear of crime, the opportunity structure in neighborhood for criminal behavior is another aspect. In the original work of Shaw and McKay, the background characteristics of neighborhoods existed, but their theory didn't place a detailed emphasis on ecological characteristics of crime-prone areas. More specifically, the spatially distributed ecological dynamics were not mentioned in a systematic manner.

About four decades after Shaw and McKay's study in Chicago, Routine Activity Theory proposed that social life in the cities is affected by urban growth that provides various opportunities to the people, which is based on division of labor. In this

perspective, the expansion of city brings about mobility, and the mobility makes it easy for individual to get rid of the influence of social control. The combination of the lack of social control in the city with the impulses of human may cause demoralization that results in crime (Cohen & Felson, 1979; Park & Burgess, 1967). On the other hand, potential offenders respond to the opportunities to commit crimes, and these opportunities are systematically related to the activities on which people routinely live their lives. In other words, social life and environment are in an interaction with respect to the incidence of crime, for both offender and victim.

Cohen and Felson (1979) argued that certain changes in the modern world have provided the motivated offenders an increased range of opportunities to commit crime. The changes in daily activities related to work, school and leisure place put people more in particular places at particular times. This situation increases availability of people as targets of crime. For them, changes in crime rates may be explained in terms of changes in the availability of targets and the absence of capable guardians. As the motivated persons exist, they commit crimes in certain places and times at which the opportunities and potential victims are available. Thus, a change in any one of these elements would reduce crime. In the actual incidences, crime requires the convergence in time and space of a motivated offender, a suitable target, and the absence of a capable guardian to prevent crime. Therefore, the control in the social life, be it formal or informal, is crucial as the organization of social activities in particular times, and places may turn the given criminal inclination into the action (Cohen & Felson, 1979). The major determinant of the convergence of these elements in time and space is the routine activity of people in the society "... at various times of day or night persons of different background,

sometimes in the presence of facilities, tools or weapons, which influence the commission or avoidance of illegal acts.” (p. 593).

In this framework, routines are daily activities, and it is the daily organization of the society and environment that influence the amount of crime rather than its pathological features. The widespread availability of opportunities makes it easy to commit infractions that give rise to the weakness of social control mechanisms. In this view, it is the available opportunity at a specific time and space that triggers this motivation into crime (Felson & Clarke, 1998:1). Consequently, people are at risk of victimization depending on their different routine activities because these activities structure people's convergence in time and space with motivated offenders, which is associated with fear of being victim of a crime within individuals (Rountree & Land, 1996).

In sum, people have their routine activities. They have the potential to come across crime in the environment. Hence, they might be victimized, and their victimization may result in restriction of their behaviors because of perceived risk and fear of crime. Routine Activity Theory assumes that potential victims similar to potential offenders may evaluate the risk and the threat in a place at a particular time, which makes them fearful (Brantingham & Brantingham, 1993; Ferraro, 1995). Therefore, this theory is deemed as useful in the analysis of the relationship between space, time and the distribution of fear (Ferraro, 1995).

II. C. Broken Windows Theory

Similar to Social Disorganization and Routine Activity Theories, Broken Windows Theory posits that a breakdown in social control among residents of

neighborhoods results in crime. Although, these theories appear to be very similar in their assumption that the social control is a key mechanism to crime control, they explain the causes of crime and how to respond to crime related problems in a different manner.

“Broken Windows” is a metaphor used to describe that a broken window, if left unchecked, causes people walking by to conclude that no one cares, and no one is in charge for this property, resulting in more broken windows. In their seminal article Wilson and Kelling (1982) argued that disorder indirectly eventuate in crime through a cascading sequence of events. Disorder is conceptualized as a two-dimensional concept. The first one is physical disorder that is “visual signs of negligence and unchecked decay in neighborhood settings” (Skogan, 1990: p.4). Examples are abandoned buildings, litter, or gang graffiti. The second one is social disorder that is “a boorish or threatening behavior that disturbs life, especially urban life” (Kelling & Coles, 1996: p.14). Examples are rowdy teenagers congregating around street corners, drinking in public, or prostitution.

According to Wilson and Kelling (1982), the unchecked physical disorder and untended disorderly social behavior cause residents of an area to be fearful. Under the influence of fear, people’s attachment to their neighborhood weakens. Those who can afford relocate themselves to a better and perhaps safer area, while those unable to do so change their daily routines of use of urban space (e.g. retreat indoors or shift in transportation regulars). Fear-induced withdrawal from streets results in a breakdown in informal social control and surveillance. Anonymity increases and social control lessens. More minor crimes and disorder transpire. This environment sends a cue to potential offenders that “the area is ripe for criminal invasion”. The neighborhood experience more

crime and decline because police and residents didn't work together for the safety. In this vein, it is police that can encourage residents to mobilize against neighborhood problems and discourage criminal to invade areas, interacting with residents. Police and residents know who the reputable people are and who are disreputable ones. If the police and community works together, and the police enforce strict rules against disreputable ones, then the neighborhood will recover from the decay.

Wilson and Kelling's original article didn't include any proposition about the causes of disorder. Skogan (1990) added that neighborhood structural factors (socioeconomic status, residential stability, and ethnic/racial heterogeneity) are determinant of levels of disorder in a neighborhood. He further argued that a neighborhood that reached at the bottom of the spiraling cycle of disorder couldn't be called as a neighborhood. In other words, disorder causes not only crime but also the decline of neighborhood as the area becomes undesirable for investment. Another contribution to the theory came from Kelling and Coles (1996), who argued that police should decide when to intervene in disorder by evaluating situation in context, based on seriousness of behavior and the potential risk to the victim and community. For example, a group of drunkard men would be scarier than a single person who is drinking alcohol in sack in an alley.

In sum, Broken Windows Theory posits that the source of fear is the disorder, and it is the police that have to formally take care of the neighborhoods to make the residents feel safer. There is a sequential relationship between disorder, fear, withdrawal from social life, the decline in social control, and invasion of criminals in a neighborhood.

Hence, the removal of disorder from a particular neighborhood would cause to live in a more cohesive and safer neighborhood.

So far, theories of crime have suggested that real life conditions contribute individual's fear of crime, which are the criminal victimization, neighborhood characteristics, and crime rates. Extant literature involves individual and contextual factors that are related to fear of crime. More specifically, while prior victimization and being woman or elderly are some of the individual factors; such factors as racial composition, crime rates, and disorder are neighborhood level factors that have impact on fear of crime. But, there is another source of fear of crime that is different from real life conditions. What happens if the media exposure is factored into the equation to evaluate individual level fear?

II.D. Cultivation Theory & Media Effect

In today's world, the stories people are told come from sources other than their relatives, schools, or neighborhoods. These modern sources are called as mass media (Gerbner 1998). The mass media has a dynamic role in the contemporary world as it is reflected in the words of Gerbner et al. (1986); the television is "taken for granted as an appliance, a piece of furniture, a storyteller, a member of the family." (p.17).

The media has various components that provide people with instant information. According to Cho et al. (2003) communication literature encompasses two types of media footage. Media delivers messages through print or audiovisual footage. While a newspaper is an example of print footage, television news uses audiovisual footage. Television news especially can employ close-ups, slow motions, video graphics, and sound. All these effects provide a feeling of presence to a viewer.

Depending on the level of access to mass media, Gerbner (1998) argued, people are able to learn what is going on in their vicinity, which enables a particular person to be kept posted about news. In the course of their business, mass media communicate their messages by means of images, audio and videos. For him, as the mass media is a socializing agent, it has a cultivating power on attitudes and judgments on the social world. Relative to the amount of time spent on media coverage, the reality in people's eyes may become what the media presents.

The cultivation power of media coverage can vary among sub-groups of the society through mainstreaming and resonance effects (Gerbner et al. 1994). Mainstreaming implies that heavy exposure to media coverage erodes differences in perspectives of people, which stems from the diversity in their culture, social class, and other influences. As a result, a similar outlook develops among people from different socio-economic backgrounds (Gerbner, 1998). The exposure to the media might also have a double-dose impact on those viewers with previous experience of violence. That is, the conditions in which viewers are living may resonate during the exposure to coverage including violence. Furthermore, a person living in an environment that is similar to that shown on a particular coverage could feel more fearful as the stimuli in the communication would evoke meaning in that particular person (Gerbner, 1998).

According to the cultivation theory, the media, however, depicts the world very differently from the real conditions. In order to obtain more public interest, the media exaggerates the realities. Especially, the coverage that involves frequent violence presents a dangerous world. Thus, reporting crimes in a distorted manner affects the audiences' perceptions about the incidents in the real world. In other words, the exposure to the

exaggerated media coverage of crimes may generate fear and concerns about being victimized (Gerbner et al. 1994).

II.E. Relevance of Theories

Consistent with the objectives of this research project, four theories are relevant to the question of what causes fear of crime in general, and fear of terrorism in particular. Fear of crime is closely related to the incidence of crime, and the causes of crime have been viewed as the underlying factors for the fear of being a victim of a crime. While Social Disorganization, Routine Activity, and Broken Windows theories have suggested crime and fear to be a result of contextual and environmental conditions, Cultivation theory ties the level of fear of crime in individuals to the exposure to media coverage on crime and violence in such a manner that erodes differences stemming from the diversity in people's culture, social class, and other influences.

CHAPTER III: LITERATURE REVIEW

Drawing on those theoretical approaches on crime and fear of crime, scholars have developed various models to analyze what causes fear of crime, which also involved individual characteristics of participants of the studies. Four different models have been salient in the extant literature to explain the underlying reasons for fear of crime.

III.A. Correlates of Fear of Crime

III.A.1. Previous Victimization

The first model is the victimization model. The model suggests that fear of crime results from the direct and indirect experience of criminal victimization (Skogan & Maxfield, 1981). While some researchers have indicated that previous victimization is a significant predictor of fear of crime (Bursik & Grasmick, 1993; Skogan, 1986; Skogan & Maxfield, 1981), others have suggested that there is none or a marginal relationship between fear of crime and criminal victimization (Liska, Sanchirico, & Reed, 1988; McGarrell et al., 1997). Empirical studies have also shown that higher levels of fear were reported by those who were least likely to be victimized, whereas lower levels of fear were observed in individuals who were most likely to be victimized (Bursik & Grasmick, 1993; Garofalo & Laub, 1978). These results pave the way for the indirect victimization model to account for these inconsistent and paradoxical findings. The indirect victimization model proposed that higher levels of fear result from the individual perception of physical and social vulnerability to crime. Accordingly, the model suggested that even if research found that women and the elderly are generally least likely to be victimized, those groups report high levels of fear as those groups perceive greater physical vulnerability to victimization (Taylor & Hale, 1986; Will & McGrath,

1995). In respect for social vulnerability to crime, the inverse relationship between fear of crime and income, and a positive association of race with fear of crime was a function of these groups' heightened risk for social vulnerability (Covington & Taylor, 1991; Skogan & Maxfield, 1981). The indirect victimization model also suggested that individuals with strong social ties reported higher level of fear of crime as they were more likely to learn about others' victimizations in their neighborhoods (Bursik & Grasmick, 1993). Furthermore, there are empirical studies that asserted that the individual perception of risk of victimization and fear of crime exceeds the actual occurrence of crime (Cozens, 2002; Liska et al., 1988; Miceli et al., 2004; Nelson et al., 2001; Smith, 1987; Taylor & Hale, 1986). In a similar vein, Warr (2000) argues that fear of crime is disproportionate to the objective risk of victimization.

III.A.2. Disorder

The second framework is the disorder model. Unlike the victimization model, the disorder or incivility model mainly emphasizes the social or macro level determinants of fear of crime. The model posits that the perception of high levels of physical and social disorder in a neighborhood is associated with higher levels of fear of crime (Bursik & Grasmick, 1993; Covington & Taylor, 1991; Lewis & Salem, 1986; Markowitz et al., 2001; McGarrell et al., 1997; Skogan, 1990; Taylor & Hale, 1986). As stated earlier, physical disorder mainly refers to visual signs such as trash, graffiti, vandalism, abandoned buildings, and broken streetlights, whereas social disorder is related to behaviors such as public drinking, panhandling, and drug dealing in a community (LaGrange, Ferraro, & Supancic, 1992; Ross & Jang, 2000; Skogan, 1990). Physical and social disorder may represent a breakdown in both norms of behavior and social control

in a neighborhood (McGarrell et al., 1997; Perkins & Taylor, 1996; Skogan & Maxfield, 1981). The prevalence of disorder in a neighborhood, hence, has consequences especially on law-abiding residents of this community. They might think that nobody in the neighborhood is concerned about what happens in their environment, and this causes them to withdraw from public life as they assume that the neighborhood is neither well-organized nor safe, causing fear in residents of the area (Lewis & Salem, 1986; Wilson & Kelling, 1982).

III.A.3. Community Concern

Similar to the disorder model, the community concern or control model is the third approach used to explain fear of crime. The community concern model theorizes that increased concern about a neighborhood decline plays a role in increasing fear of crime (McGarrell et al., 1997). In particular, residents with more concern about neighborhood deterioration exhibit more fear of crime than those with less concern (Taylor & Hale, 1986). The concern about the community firstly arises as a result of the rupture in commonly accepted values and social control in the community (Lewis & Salem 1981). But, the social disorganization doesn't increase fear in communities with members who are satisfied and attached to their neighborhood, as their familiarity with the area enables them to anticipate possible risks of crime. The other factor capable of alleviating fear of crime is "provincialism" (Lewis & Salem, 1981; p. 418). Similar to the public level control in systemic model (Bursik & Grasmick, 1993), provincialism mainly is the extent to which the local community and its organizations are able to influence public service providers (i.e., municipalities and public-private decision making agencies) for the allocation of resources to control neighborhood crime and disorganization. One

part of provincialism is the relationship between the neighborhood residents and the local police department. Empirical studies found direct and indirect negative impacts of the perception of satisfaction with police services (Box, Hale, & Andrews, 1988; Scheider, Rowell, & Bezdikian, 2003); police effectiveness (Box et al., 1988; Hawdon, Ryan, & Griffin, 2003; McGarrell et al., 1997; Renauer, 2007); police presence (Marvell & Moody, 1996; Zhao et al., 2002); and police visibility (Salmi et al., 2004) on the fear of crime.

III.A.4. Subcultural Diversity

The subcultural diversity perspective suggests people are more likely to be fearful of crime when they are concerned about the behaviors of “others” who look or act differently (Bursik & Grasmick, 1993; Covington & Taylor, 1991; Lane & Meeker, 2000; Merry, 1981). In this perspective, fear of crime is a result of residents’ worries about living in an environment where people are from different cultural, racial or ethnic backgrounds (Merry, 1981). Kennedy and Silverman (1985) argued that high levels of social heterogeneity decrease the intensity of interactions among residents of an area. In such an environment, individuals are afraid of others because it is difficult to interpret the manners and behaviors of “others”, and this uncertainty brings about fear. In a sense, the uncertainty is normal in a mixed community as members interpret social interactions “through the lens of their own culture” (Merry, 1981; p.149). Empirical studies have supported the subcultural diversity thesis. Merry (1981) observed that typically quiet Chinese residents found the loud Blacks dangerous. Liska et al. (1982) found that the racial composition in the cities has an impact on fear of crime across groups. Furthermore, racial and cultural diversity in communities were found to be positively

correlated with fear of crime (Covington & Taylor, 1991; Taylor & Covington, 1993; Lane & Meeker, 2000).

Overall, the literature relevant to fear of crime involves both individual and environmental correlates. While certain individual (e.g., prior victimization), and neighborhood (e.g., subcultural diversity or disorder) characteristics heighten fear of crime; collective efficacy, police effectiveness and satisfaction with public services can alleviate fear of crime, which are the potential measures of social integration and informal and formal social control in the community.

III.B. Fear & Environmental Risk of Crime

Earlier studies on fear of crime theorized that crime rates in a community are fair predictors of fear of crime (Ferraro, 1995). However, the analyses of the relationship between crime rates and fear in space showed that the fear and the crime-dense areas are not associated at the neighborhood level (Alkimim et al., 2013; Nasar & Fisher, 1993). Research in this area commonly examined the possible relationship between the places of crimes and the residences of citizens fearful of crime. In other words, hotspots of crimes have been compared to hotspots of the locations of fearful participants. On the other hand, these analyses were conducted without taking into account the physical infrastructure of the environment where crimes occurred.

Among other things facilitating the occurrence of crime, there is a risk of crime coming from the features of a landscape as these features co-locate and create a unique behavior settings for crime (Brantingham & Brantingham, 1981). The most risky areas in respect for a particular type of crime in a city, and the levels of fear among residents of these areas have not been probed in detail, perhaps because of the lack of a proper tool

for such an analysis. Being an innovative method for risk and crime analysis, Risk Terrain Modeling (RTM) enables to figure out the actuarial risk of a crime in a geography given the known correlates of a particular type of crime. The following discussion is an attempt to relate fear of crime to the patterns of the features of physical environment in urban areas.

III.B.1. Fear, Crime & Built Environment

The significance of the physical and built environment, and its effect on crime and fear of crime have long been acknowledged (Lynch, 1960; Newman, 1973). Just like criminal behavior, fear of crime is not abstracted from the geographic space. Crime and victimization take place in geographical areas, and the level of one's fear of crime is likely to be influenced by the geographic space s/he uses. Hence, it is not only the social interactions that affect the occurrence of crime, but also the interaction of land users with the physical environment plays a role in understanding fear of crime (Brantingham & Brantingham, 1993; Crowe, 2000).

Scholars have suggested that crime and fear of crime are not evenly distributed over time and space (Sherman et al. 1989; Smith, 1989). Crime and fear are likely to be concentrated in certain places (Brantingham & Brantingham, 1993; Warr, 1990). Sherman et al. (1989) defined a place as “a fixed physical environment that can be seen completely and simultaneously, at least on its surface, by one's naked eyes” (pg. 31). Maltz et al. (1991) contended that places with concentration of crime or fear might be called as “hotspots” regardless of the presence of criminal incidents (p.41) because an ongoing experience with the environment plays a key role for humans to develop mental maps of their surroundings (Nasar & Fisher, 1993: p.188). In addition to the actual

interaction between place and fear, such indirect experiences as media reports or crime stories have an influence on the mental map, which provides people with map-like qualities. These mental constructs contain information about spatial relationships, the location and the meaning of places. Such a cognitive process also affects how individuals identify objects, predict what will happen, evaluate consequences, and act (Nasar & Fisher, 1993: p.188).

In a similar vein, Innes (2004) argued that different crimes have a disproportionate influence on the extent to which these crimes connote criminogenic risk. Drawing on semiotics theory, he proposed that objects or acts are signs, and they provide different meaning in different cultures and situational contexts. These signals may change onlookers' feelings, thoughts, and behaviors. In this signal crimes perspective, signals may denote criminal incidents (Innes, 2004), for example throwing a Molotov cocktail into a branch of a particular franchise or an attack to a government building. Those signals indicate the presence of criminogenic risk (Innes, 2004), in this example the risk of terrorism. There are strong and weak signal crimes (acts or objects generating the perception of criminogenic risk). When people encounter these signals temporally or spatially in succession or combination, they are likely to have a higher perception of risk. Furthermore, the individual interpretation of a signal crime is related to characteristics and patterns of the social and physical environment. As a result, signal crimes trigger a cognitive or affective reaction, and causes feelings of heightened fear of crime (Innes, 2004).

Empirical studies have also tested whether crime-prone places and hotspots of fear of crime converge in space. In a study in Ohio, Nasar and Fisher (1993) observed

that hotspots of fear and crime didn't overlap at the neighborhood level. In another study, Alkimim et al. (2013) examined if the fear of crime is associated with reported urban crime in Vicosia, Brazil. The results of the study suggested that criminal incidents were clustered on the Downtown area of the city. Although the number of criminal reports were increasing at the time of the study, the level of fear of crime measured through a survey was common throughout the city. Researchers concluded that fear of crime is not directly related to the increase in the numbers of criminal reports.

However, Alkimim et al. (2013) took only crime rates into consideration to probe the relationship between fear and crime. The study followed the logic that the hotspots of fear and crime are spatially related if the neighborhoods with higher levels of fear of crime are associated with the areas with higher crime rates. Consequently, the values of crime in the equation only indicate how many crimes committed in a place, and it tests the relative influence of this concentration on fear of crime. But, such an analysis doesn't consider the spatial influence of physical features in an environment on the concentration of crime.

The spatial influence of a landscape feature "refers to the way in which features of a landscape affect places throughout the landscape" (Caplan, 2011: p.58). For example, earlier research in Turkey found the coffee houses, high schools and on-premise alcohol outlets as indicators of the level of business in a place were correlated to crime in Turkey (Duru, 2010). Turning back to the discussion of hot spots of fear and crime, such an analysis of crime has a shortcoming with respect to the spatial influence. While conducting a retrospective examination on the locations of crime, hotspots analysis ignores the environment in which crime occurs as the analytical concern is only on the

cluster of unrelated incidents over space (Caplan & Kennedy, 2010). For example, a hotspots analysis of terrorism in Istanbul would consider where the terrorist incidents were concentrated in the past. But, those incidents would have happened around diplomatic or religious facilities, or a particular banking corporation, showing a commonality in infrastructure over space. Hence, an analysis of crime places without adding those features of environment into the equation would lose accuracy. Such an analysis would also have implications for fear of crime as humans construct mental processes to evaluate the criminogenic risks in space. Therefore, the current study suggests to benefit from the Risk Terrain Modeling (RTM) to analyze the relationship between fear of crime and criminogenic risk in crime-prone areas.

III.B.2. Risk Terrain Modeling (RTM)

As stated earlier, the potential for crime is in association with the risk of victimization in space that has consequences for fear of crime. The characteristics of some urban places constitute, in a sense, a potential for being targeted. According to Caplan and Kennedy (2010):

"..opportunity varies in degrees and changes over time as public perceptions about environments evolve, as new crime occur; as police intervene; or as motivated offenders and suitable targets travel.....considering criminogenic opportunity as place-based risk makes theoretical and intuitive sense to all participants: offenders and victims know they take risks and these risks increase in certain locations .." (p.12).

In a similar vein, Brantingham and Brantingham (1981) stated " criminal events can be understood in the context of people`s normal movement through normal settings in the course of everyday life" (p. 2). As crime and violence is related to the perception of threat, it is likely that people construct certain emotional relations with the space creating

geography of fear. Hence, the use of crime data collected about space can be compared to the data involving features of those spaces. Similar to crime, fear concentrates in hotspots that have micro (proximate) and macro (neighborhood) levels, and it is possible to uncover broader patterns of fear of crime through a macro level analysis (Nasar & Fisher, 1993).

Being an extended version of hotspots analysis, Risk Terrain Modeling (RTM) enables to forecast crime by combining the actuarial risk prediction with ecological criminology (Caplan et al. 2011). The RTM identifies “where conditions are ideal or conducive for crimes to occur in the future given the existing environmental contexts” (Caplan & Kennedy, 2011, p.7). In this perspective, the physical structure and activity in public are assumed to have an impact on how crime occurs, and basically the RTM addresses empirically how this connection works (Caplan & Kennedy, 2010). The environmental features of a place constitute the nature of spatial criminogenic opportunities. Furthermore, these opportunities for crime are taken as risks of crime.

The risk is defined as “...a continuous dynamic value that increases or decreases intensity and clusters or dissipates in different places over time, **even places remote from a crime event**. Valuations of risk are tied to geography and, regarding crime, risk values are the measure of a place’s potential for a crime event to occur. Geographic risk is determined by a nexus of certain factors and it changes only as the characteristics and interactions of those factors vary.” (Caplan et al., 2011: p. 364)

Thus, risk means the likelihood of an event occurring given what is known about the correlates of that event, and it can be quantified with positive, negative, low or high ordinal values (Caplan & Kennedy, 2010: p.22). But, this risk of crime has never been zero in a place (Kennedy & Van Brunschot, 2008). In fact, there are different factors in geography that are related to crime, and the clustering of these factors forms

"environmental backcloth" (Brantingham & Brantingham, 1981, p.19). This backcloth is being used to the study of crime in the RTM (Caplan & Kennedy, 2011).

“What surrounds us in an urban environment includes centers of activity, roads and pathways, well-known landmarks, and parks ... We move around in the urban environment from one activity node to another sometimes with fixed location goals (such as a specific restaurant) and sometimes with general area goals (the entertainment district). This movement takes people through well defined areas with crisp, clear borders, and through less clearly identifiable areas. Crimes occur within this backcloth, and can even shape the backcloth. Individuals have personal nodes, paths, and edges that shape their activities within the backcloth. In the aggregate some nodes, paths, and edges stand out.....Common aggregate activity nodes that are studied in criminology are shopping areas, entertainment districts (including pubs or bars), and schools. Aggregate awareness spaces are likely to be located the areas around these types of nodes. (Brantingham et al. 2009; p. 93)

According to McCord et al., (2007) people have their activity spaces over which they move from one node to another. These movements also generate their awareness space, and these land use-activity intersections result in various risks for victimization. In addition, they contribute to land users` ideas and feelings about crime and area. Furthermore, “The closer someone lived to crime-relevant land uses, the more likely his or her awareness space would be affected by those land uses and the activities and events surrounding..”(p.298)

Using Geographic Information Systems, RTM is a model that assumes that crime is happening in these environmental contexts. The RTM uses features of infrastructure to understand environmental context where crimes are clustered. Being similar to hotspots analysis, RTM probes, in a broader way, whether the places with concentration of crime have also common patterns of infrastructure (e.g. government buildings or hotels). Then, it tests the significance of spatial association between crime and different layers of infrastructures (Caplan & Kennedy, 2011). As a result, the risk becomes a high

probability of occurrence of crime in a particular space where these patterns exist. Although RTM is mainly interested in forecasting crime in space and time, the model enables to identify risk values of a crime for particular spatial units (e.g., neighborhoods), in which "risk values are the measure of a place's potential for an event of some sort to occur" (Kennedy et al. 2012: p.7).

In respect for the current study, the features of the environment in which people navigate during their day-to-day life are important to fear of terrorism. For example, 9/11 terrorist attacks in New York have been etched in people's memory through the collapse of the Twin Towers in the city, which was communicated to the rest of the world through the media. When people walk around and see the actual environment in the city, they envision what happened on that day. Thus, the features of environment has a role to play in shaping people's perception and fear about terrorism. As the RTM takes the places of incidents into account within the environment in which they occurred, the terrorism risk that the model attributes to a spatial unit would be correlated with the levels of fear in residents of these places.

III.B.3. Environmental Risk Factors of Terrorism

The public life-style shapes how people spend their time in different places, and these routines creates exposure to the risk based on individuals' places of interest across the landscape (Kennedy & Ford, 1990). The landscape features that are correlated with terrorism have been rarely studied in the literature, although the incidence of terrorism is a threat that is unevenly distributed across geographical areas. La Free (2010), for example, argued that 27% of all terrorist attacks across the world have been concentrated on 2% of all the countries. Although criminology has adopted the environmental

approach to analyze crime, there is little empirical work on spatial aspects of terrorism (Smith et al. 2008), in which some argue that the importance of a place is a motivation for an attack, and symbolic areas do also matter in decision-making (Berrebi & Lakdawalla 2007).

Terrorists attack not only to the people but also to the business, government or diplomatic entities during the routine daily life. As stated earlier, one of the components of Routine Activity Theory is the suitable target. Cohen and Felson (1979) suggested that a target is viewed as suitable by its value, inertia, visibility, and access. Drawing on this suggestion, Clarke and Newman (2006) used the acronym “EVIL DONE” to identify potential targets of terrorism, which stands for Exposed, Vital, Iconic, Legitimate, Destructible, Occupied, Near, and Easy. They further argued that though terrorists behave differently from conventional criminals, terrorism functions similarly to ordinary crimes (Clarke and Newman, 2006; p.156).

Taken together, targets are important in terrorist events as they also have the potential of posing a risk to their surroundings, and the identification of risk factors for terrorist attacks requires an analytical process. Kennedy et al. (2011) proposed three ways to identify risk factors that are related to a particular outcome for which risk is being assessed, namely; literature review, professional experience, and practitioner knowledge.

To the best knowledge of the researcher, the most comprehensive study that listed risky facilities in respect for terrorism is the research of Libicki et al. (2007). They examined 14 incidents in which Al Qaeda played a role, and the terrorists targeted embassies and consulates, trade centers, synagogues, tourist hotels, banking corporation, and government buildings. As for risk of terrorism in Turkey, Rusnak et al. (2012) used

the number of mosques as a correlate of terrorism risk because " they may attract terrorist attacks from a religious terrorism ideology within Turkey" (p.8), and they found that Istanbul was the riskiest city for the future terrorist attacks. Their analysis of terrorist incidents in 2006 pointed out that terrorist organizations targeted media, government buildings, police/military facilities, religious facilities, and business in this particular year. In a similar study in Istanbul, Ozer and Akbas (2011) found that religious facilities, governmental buildings, and political party buildings were at the target of terrorists from different ideologies.

These findings were similar to the studies conducted in the US. Webb and Cutter (2009) analyzed the geographical aspects of terrorist events in the US between 1970 and 2004. They found that almost 81% of all terrorist event target types are businesses, health facilities, government, diplomatic entities, private property, police, and military. Even though more than three decades had passed, the businesses persistently represented 28% of the targets over the entire time period.

“Department stores, banks, hotels, and supermarkets were among those businesses that caught terrorists’ attention. Both government structures and officials were commonly targeted as well. The Capitol building, State Department, courthouses, and city halls were targets selected by terrorist groups.....More and more we are witnessing a shift to where terrorists are setting their sights on places and spaces of everyday activity such as supermarkets and banks....” (p.447)

Nunn (2007) research also sought an answer to what extent certain land uses can be linked to higher risks of attack. His analysis of terrorist incidents between 1997 and 2005 in the US pointed out that terrorists had targeted health facilities, government facilities, and commercial spaces that include offices, stores, businesses facility, office buildings, media office, and recreational space.

Using the expert knowledge drawn from an interview with intelligence officers of Turkish National Police who specialized in countering terrorist networks that were active in Istanbul, Ekici et al. (2008) examined the attractiveness of targets for terrorist offenses in Istanbul. Through a rating system for target attractiveness, the analysis was based on the actual targets of past attacks and comparison sites that tend to have points of vulnerability or attractiveness. The experts identified underground station, a high-rise hotel and shopping center building, a bank (HSBC), and a high-rise business center as the most risky places to be targeted by terrorist. The raters argued that terrorists might attack business centers as they are the symbols of the capital of the opposite ideology against which terrorists are in struggle.

Taken together, the relevant literature suggests that crime in general, and terrorism in particular, concentrates in space. Terrorists have targeted various features in the landscape, but the targets demonstrated some commonalities in different countries for different terrorist organizations. Those studies found that terrorist attacked to governmental buildings (city halls, police-military facilities, or court houses), banks, religious facilities (synagogues, churches, or mosques), business facilities (stores, supermarkets or restaurants), political party buildings, NGOs, health facilities, diplomatic entities, media offices and recreational space. Table 1 illustrates the summary of terrorist targets as the environmental risk factors for terrorism from the relevant literature.

Table 1- Environmental Risk Factors in The Literature

Terrorist Targets in Literature						
Target	Study					
	Rusnak et al. (2012)	Libicki et al. (2007)	Ozer & Akbas (2011)	Webb & Cutter (2009)	Nunn (2007)	Ekici et al. (2008)
Diplomatic Entity		✓		✓		
Religious Facility	✓	✓	✓			
Governmental Facility	✓	✓	✓	✓	✓	
Banking		✓				✓
Business	✓	✓		✓	✓	✓
Media Offices	✓				✓	
Political Party Office			✓			
Health Facilities				✓	✓	
Recreational Space					✓	

III.B.4. Summary

The relationship between fear and crime over time and space has been a topic of interest in the academia. The built environment has an influence on both crime and fear. Previous studies used crime rates or the cluster of a crime in a place as predictors of fear of crime. These analyses ignored the actuarial risk of crime in the places where residents were asked about their levels of fear. However, such an approach of actuarial risk involving other features of environment also matter to both incidence of crime and fear. A broader analysis of risk of crime in a place (given its known correlates) and its association with fear of crime may provide different results. The RTM enables to assign numeric risk values that takes landscape features into account to spatial units, making a more accurate analysis possible.

III.C. Fear of Crime & Media

As stated earlier, the massive media is an indispensable part of the life in the modern day's societies. For example, Marsh and Melville (2014) argued that American TV viewers watched an average of 280 minutes of TV everyday in 2010. Taken together with the social media, however, the extent to which people are using media is almost impossible to track. Such a large usage of the media, of course, has implications in respect for criminology and criminal justice in that the symbols of crime and violence are frequently circulating in the media. For instance, regardless of their firsthand experience with crime and violence, a student is likely to see 8,000 murders and 100,000 acts of violence in the US by the end of elementary school (Marsh & Melville, 2014).

The impact of the massive media coverage of crime is two-fold; one being on antisocial behavior, and the other one on individuals' perceptions and feelings. In fact, the awareness that there is a link between media exposure and variations in behavior and responses emerged after the efforts made in the second half of twentieth century in the academia (Marsh & Melville, 2014). One of the most important studies in this field was Bandura's (1963) randomized experiment, also known as the 'bobo doll study'. Having measured the relationship between watching aggressive film images and the change in the behavior of children, Bandura observed that children who had watched clips that involved an attacker who hit the doll and were rewarded following this behavior imitated this violent behavior, while those who watched clips involving punishment after the attack did not use violence when they were allowed to play with the doll. Bandura concluded that the violence on the media content is associated with aggressive behavior through imitative learning. Later research has also found similar results in the analysis of

the exposure to violent media coverage and antisocial behavior (Bjorkqvist, 1985; Bushman, 1995; Eysenck & Nias, 1978; Liebert & Baron, 1972; Josephson, 1987). In addition, Eysenck and Nias (1978) argued that the violent and sexual scenes in media coverage lead youths to imitate these observed behaviors in public sphere. In other words, this piece of literature suggests that there is a relationship between the exposure to the media and antisocial behavior that includes social disorder such as obscenity in public areas.

As the primary focus of the current study is not on the impact of media on antisocial behavior, it is time to turn the discussion to the relationship between fear of crime and media. Massive media plays a role in changing the feelings of individuals who are exposed to crime-related media coverage. As discussed in the previous chapters, one individual response to crime is the fear. Although concern and fear of victimization may arise from a variety of sources, the media can play a substantial role in shaping this fear (Weitzer & Kubrin, 2004). One important point here is the perception of the seriousness of crime. According to Warr (2000), “the public is likely to exaggerate the frequency of rare, serious crimes and underestimate the frequency of more common, less serious ones.” (p.465), mainly because of the frequency of reports in the mass media on crime that is the primary source of information on crime.

In this vein, fear of crime is related to an individual's assessment of risk of material or corporal harm as a result of crime. The death of a person is the most extreme consequence of a criminal act, though the causes of the death result more from other causes than they do from crime. For instance, Slovic et al. (1982) reported that a violent crime (homicide) was more heavily reported in the media than the diseases (e.g. diabetes

or cancer), although the diseases take 100 times as many lives as homicides. Besides, the frequent coverage in the media on crime makes people think that a particular crime is more common than others (Skogan & Maxfield, 1981). Still, Lane and Meeker (2003) argue that the exaggeration in the media intensifies the perceived risk of victimization in individuals, and therefore induces fear of crime.

From the perspective of the media sector, the distortion of the facts in news coverage in the form of exaggeration or overemphasis is related to the newsworthiness of social events. Katz (1987) implicated the use of crime news as a filler to attract broader audiences in the distortion of crime news, though the workers of the mass media reported that the news presented to the people are what the people want to see. Such a desire of attracting more people to sell more news culminates in the fact that the mass media report more serious but less frequent crimes (Skogan & Maxfield, 1981; Warr, 2000).

The extant literature suggests that crime news largely take place in the massive media, the media can distort the facts, and people may be fearful of crime as a result of this exaggeration. But, does the exposure to the media coverage on crime empirically have any impact on individuals' levels of fear? Communication studies increasingly place an emphasis on the relationship between media coverage of crime and their audience responses, and empirical research is supportive of this argument. In one of the earliest examinations of the relationship between fear of crime and the media, Skogan and Maxfield (1981) found a positive correlation between the number of hours spent watching television and their participants' levels of fear of crime. Similar to this study, Chiricos, et al. (1997) reported that when controlling for other variables such as gender, age, race, and previous victimization, the frequency of watching and listening to the news

about crime had a significant impact on the perceived risk of victimization. Controlling for other variables including perceived police effectiveness, Dowler (2003) found a moderate positive impact of the consumption of crime shows on fear of crime. In another study using data from the General Social Survey (1990-1994) and a survey of over 2300 Philadelphia residents, Romer, et al. (2003) also suggested that viewers of local television news experience heightened perceptions of crime risk at both the individual and the societal level.

With respect to the impact of neighborhood characteristics on perceived risk of victimization, it is reported that the consumption of local TV news, exposure to TV crime dramas, and other crime-related media coverage creates more fear among those individuals living in neighborhoods associated with high crime rates than those living in the ones with low crime rates (Doob & MacDonald, 1979; Chiricos et al., 2000).

The relationship between media and fear is also influenced by what source of media individuals consume. Weitzer and Kurbin (2004) reported that the effect of media on individual fear of crime varies depending on the type of the media a person is exposed to. Namely, newspaper, radio, TV and Internet news have different impacts as regards to fostering the fear of crime. The results of their study suggested that individuals who consume local television coverage as their main news source are likely to be more fearful than the consumers of national TV, daily newspapers, and other media sources.

III.D. Fear of Terrorism & Media

Fear of terrorism is a relatively more specific degree of fear of crime. Terror as a word is defined as “fear in extreme” (Forst, 2007: p.44). However, whether fear of terrorism is uniquely different from the fear of crime needs more study (Wilcox et al., 2009). According to Nellis (2009), criminological literature has two different focuses about fear of crime. One of its focuses is on the individual level, and the other one is on the community level. Within this categorization, individual level variables are gender, age, race, previous victimization, education, and income. At the community level, physical and social disorder, and the neighborhood cohesion comprise the other part of criminological studies. However, Nellis (2009) argued, while traditional crime is mostly a local issue, terrorism mostly has a national or international aspect. Therefore, social and physical cues alone are not enough to determine individual level fear. Often, what public know about terrorism draws on the information circulating in the media.

Having a violent nature, terrorism is described as a modern phenomenon that has been introduced and publicized through the mass media (Lynch, 1996). There is a controversial and reciprocal relationship between terrorism and the media. Terrorist groups need media to enhance the impact of their attacks. On the other hand, these attacks create drama, bloodshed, and public interest, which the media needs to maintain its ratings. The famous Italian anarchist Carlo Pisacane identified that, being the only way to convey messages to the people who were exhausted for working all day, “propaganda by deed” is one of the fundamental methods that many terrorist groups have used (Griset & Mahan, 2003). In this vein, media exposure plays a mediating role in that it creates more fear and anxiety in society, and helps spread the impacts of attacks to

wider society beyond the locations where the attacks occurred. Furthermore, the media are often exploited by terrorist groups as a means of communication (Schmid & Graff, 1982) in order to convey their ideology and messages. Terrorist organizations seek to communicate their message to the widest possible audience by utilizing mass media (Nacos, 1996, 2003).

There is empirical support to the argument that exposure to media coverage influences individual level fear of terrorism. Through a randomized experimental research design, Slone (2000) probed the impact of terror-related television news on people's levels of anxiety. She used television clips of terrorism and threats to national security in the experimental group. The control group was exposed to television clips unrelated to terrorism during the same amount of time. Both group responded to the same questionnaire, and the experimental group reported a significantly higher level of anxiety about terrorism than did the control group. In another study, Nellis (2007) analyzed data from a survey conducted in 2006 to 532 residents of New York City and Washington DC. She examined the influence of exposure to terror-related media coverage on residents' fear and their anti-terrorism policy preferences. She found that residents who watch more television news on terrorism also have higher levels of fear. In addition, residents with previous victimization of terrorism reported higher fear than those who were not victimized. Fear was also found to be a significant predictor of being supporter of anti-terrorism policies. To the knowledge of the researcher, there is only one empirical study with respect to the fear of terrorism and media consumption in Turkey, and Wilcox et al. (2009) found that national TV exposure had statistically significant and positive impact on the fear of terrorism among Turkish students.

In this light, the exposure to the media coverage of terrorism has implications in people's reactions to the real risk of terrorism (Slovic et al., 2000). If the mass media publicize and visualize the bad outcomes of terrorist attacks, people will report more worry about the risk though the true risk is very low (Sunstein, 2003). In his probability neglect perspective, Sunstein (2003) argued that individuals are interested more in the consequences of a phenomenon than in the probability of the phenomenon to happen to them, when they are under the influence of their emotions. Although terrorism has a low-probability risk to occur in comparison to traditional crimes and other threats, people react excessively to terrorism in the form of fear. Therefore, highly publicized but few terrorist events may negatively influence people's thought and behavior because they may think that the next incident is likely (even though it is not), and that the probable harm will be exaggerated in their mind.

III.E. Terrorism in Turkey

Turkey is a country that geographically connects two continents, Europe and Asia. This Euro-Asian country has also sheltered cultural values from the two continents and civilizations (Ekici, 2011; Rodoplu et al. 2003). It has land borders to Greece and Bulgaria in Northwest, Syria and Irak in the South, Iran and Azerbaijan in the East, Armenia and Georgia in the Northeast. All these countries are distinct in respect for their social compositions and government regimes. For example, Iran has been ruled under a religion-based regime, while Azerbaijan was ruled under the Soviet Socialist Republic until it proclaimed its independence in 1991.

Turkey's strategically distinct location has implications with respect to the security issues. The country has been under the threats of different types of terrorism networks since 1960s (Bal & Laciner, 2001; Ekici, 2011; Koseli, 2006). According to Laqueur (1999), the terrorism in Turkey surfaced as a problem partially due to the spread of resurgence of terrorism in Europe. Between 1960s and 1980s, terrorist groups with Marxist-Leninist ideology were dominant in the commission of terrorism. The terrorism until 1980s has been qualified the one that resulted from the migration of the population from rural to urban areas, the economic problems this migration brought about, and the student movements affiliated to the global movement (Bal & Laciner, 2001; Laqueur, 1999). Furthermore, following the collapse of the former Soviet Union, the Middle East experienced different terrorist organizations as other regions did. Countries around this region have been influenced by the activities of terrorist organizations.

After 1980s, a terrorist group with the separatist ideology has been on the scene, and the focus of terrorist activities shifted, in part, from urban areas to rural ones (Laqueur, 1999). Founded in 1978, the PKK (Kurdistan Workers Party) has been the most costly terrorist group that threatens Turkey's national security. The PKK caused about 35,000 casualties in Turkey and its cost to the country has been about 125 billion in US dollars (Ozer, 2006). Though its ideology is separatist, and still abusing Kurdish identity (Demirci & Suen, 2006), the group's aim is to incite communist revolution within the Marxist-Leninist ideology to liberate the Kurds (Rossmo & Harries, 2011; White, 1998). The leader of the PKK was captured in Kenya in 1999, and incapacitated through the imprisonment. Another group of terrorists is the extreme rightists that commit terrorist acts based on the abuse of religion to establish a religion-based system

(Koseli, 2006). The groups such as Turkish Hezbollah and IBDA/C (Great Islamic Raiders/Front) committed many terrorist acts in the country, but the Istanbul Bombings on November 15th and 20th, 2003 were the most deadly attacks committed by Al-Qaeda with an affiliation to Hezbollah (Eldivan, 2011), where the explosion of bomb-laden trucks caused 59 casualties and 800 injuries.

Overall, terrorist activities in Turkey can be grouped under three categories. These are terrorist organizations operating based on extreme leftist, rightist, and separatist ideologies. The major terrorist organizations that have committed terrorist acts over the last decade can also be grouped by this categorization. The separatist group is the PKK (Kurdistan Workers Party). The extreme leftist groups are DHKP/C (Revolutionary People's Party/ Front), TIKB (Revolutionary Communist Union of Turkey), TKP/ML (Turkish Communist Party / Marxist Leninist), and MLKP (Marxist Leninist Communist Party). The extreme rightist groups are Al-Qaeda, Turkish Hezbollah and IBDA/C (Great Islamic Raiders / Front).

III.F. Research Questions

The current study is a quantitative analysis of fear of terrorism in Istanbul. In a cross-sectional design, the study utilizes correlational research techniques about the individual and neighborhood aspects of fear of terrorism. A multilevel model analyzes the impact of individual and contextual factors on fear of terrorism. Therefore, the unit of analysis is both the individual and the neighborhood in the multilevel analysis. In this vein, the following questions are the research questions:

- 1) Do the factors that explain fear of crime also help to predict fear of terrorism in Istanbul, Turkey?
- 2) Do the residents of neighborhoods with higher risk of terrorism report more fear of terrorism than those living in neighborhoods with lower risk?
- 3) What is the role of personal exposure to media coverage about terrorism in generating fear of terrorism in individuals when controlling for other factors that explain fear of traditional crime in a multilevel statistical analysis?
- 4) What are the similarities and differences between fear of traditional crime and fear of terrorism when the same correlates are used to predict both types of fear?

III.G. Hypotheses

This study hypothesizes that factors that influence fear of crime also have an impact on individual's fear of terrorism. Based on the literature review and research questions, the hypotheses are as follows:

Social disorganization theorists assumed that crime and resulting fear are concentrated in neighborhoods with low socioeconomic status, residential mobility, heterogeneity (ethnic and racial), and weak social networks.

Hypothesis - 1: As the population heterogeneity in a neighborhood increases, the likelihood of fear of terrorism also increases among residents in the neighborhood,

Hypothesis - 2: As the residential mobility in a neighborhood increases, the likelihood of fear of terrorism also increases among residents in the neighborhood,

Hypothesis - 3: As the socio economic status in a neighborhood decreases, the likelihood of fear of terrorism also increases among residents in the neighborhood,

People are more likely to be fearful of crime when they are concerned about the behaviors of “others” who look or act differently (Bursik & Grasmick, 1993; Covington & Taylor, 1991; Lane & Meeker, 2000; Merry, 1981). Kennedy and Silverman (1985) argued that high levels of social heterogeneity decrease the intensity of interactions among residents of an area. In such an environment, individuals are afraid of others

because it is difficult to interpret the manners and behaviors of "others", and this uncertainty brings about fear. Thus;

Hypothesis - 4: As the subcultural diversity increases in a neighborhood, the likelihood of fear of terrorism also increases among residents in the neighborhood,

However, social ties may stimulate or hinder the effort against crime in a particular locality. The social cohesion is supposed to decrease crime, hence, decreasing fear of crime. The strength of social ties and neighborhood cohesion are an alleviating factor for crime and fear. Collective efficacy mediates between the effect of structural constraints and crime.

Hypothesis - 5: As the collective efficacy in a neighborhood decreases, the likelihood of fear of terrorism also increases among residents in the neighborhood,

In the systemic model, the public control is viewed to be related to formal control, and the community concern model theorizes that increased concern about a neighborhood decline plays a role in increasing fear of crime (McGarrell et al., 1997). If the public institutions invest in the neighborhood, then crime and fear is less likely. In particular, residents with more concern about neighborhood deterioration can exhibit more fear of crime than those with less concern (Taylor & Hale, 1986).

Hypothesis - 6: As the strong formal control in a neighborhood decreases, the likelihood of fear of terrorism also increases among residents in the neighborhood,

The relationship between the neighborhood residents and the local police department is also important in respect for public control, and there are direct and indirect negative impacts of the perception of police effectiveness on fear of crime (Box et al., 1988; Hawdon, Ryan, & Griffin, 2003; McGarrell et al., 1997; Renauer, 2007).

Hypothesis - 7: As the effectiveness of the police in counter terrorism in a neighborhood decreases, the likelihood of fear of terrorism also increases among residents in the neighborhood,

Routine Activity theorists argue that social life and environment are in an interaction with respect to the incidence of crime, for both offender and victim. Crimes are committed in certain places and times at which the opportunities and potential victims are available. People are at risk of victimization depending on their different routine activities (Felson & Cohen, 1979), which is associated with fear of being victim of a crime within individuals (Rountree & Land, 1996). Fear of crime results from the direct and indirect experience of criminal victimization (Skogan & Maxfield, 1981).

Hypothesis - 8: The previous victimization of crime increases the likelihood of an individual's fear of terrorism

Hypothesis - 9: The previous victimization of terrorism increases the likelihood of an individual's fear of terrorism

In the literature, higher levels of fear were reported by those who were least likely to be victimized, whereas lower levels of fear were observed in individuals who were most likely to be victimized (Bursik & Grasmick, 1993; Garofalo & Laub, 1978). Though, women and the elderly are generally least likely to be victimized, those groups report high levels of fear as those groups perceive greater physical vulnerability to victimization (Taylor & Hale, 1986; Will & McGrath, 1995). Married people are assumed to be less fearful of crime as they are relatively not socially isolated (Hale, 1996),

Hypothesis - 10: Being women increases the likelihood of an individual's fear of terrorism

Hypothesis - 11: Being elderly increases the likelihood of an individual's fear of terrorism

Hypothesis - 12: Being married decreases the likelihood of an individual's fear of terrorism

The interaction of land users with the physical environment plays a role in understanding fear of crime (Brantingham & Brantingham, 1993; Crowe, 2000). Crime and victimization take place in geographical areas, and the level of one's fear of crime is likely to be influenced by the geographic space s/he uses. Signal crimes (acts or objects generating the perception of criminogenic risk) trigger a cognitive or affective reaction, and causes feelings of heightened fear of crime (Innes, 2004). Risk in the neighborhood based on presence of aggravating factors in the built environment in a common pattern may cause fear. However, Warr (2000) argues that fear of crime is disproportionate to the

objective risk of victimization. Although terrorism has a low-probability risk to occur in comparison to traditional crimes and other threats, people react excessively to terrorism in the form of fear (Sunstein, 2003). Therefore, highly publicized but few terrorist events may negatively influence people's thought and behavior because they may think that the next incident is likely (even though it is not), and that the probable harm will be exaggerated in their mind. To test this rationality versus irrationality in fear of terrorism;

Hypothesis - 13: As the terrorism risk increases in a neighborhood, the likelihood of fear of terrorism also increases among residents in the neighborhood,

According to Wilson and Kelling (1982), the unchecked physical disorder and untended disorderly social behavior cause residents of an area to be fearful, and people's attachment to their neighborhood weakens under the influence of fear.

Hypothesis - 14: As the perceived disorder in a neighborhood increases, the likelihood of fear of terrorism also increases among residents in the neighborhood,

Cultivation Theory argued that the cultivation power of media coverage could vary among sub-groups of the society through mainstreaming and resonance effects. Mainstreaming implies that heavy exposure to media coverage erodes differences in perspectives of people, which stems from the diversity in their culture, social class, and other influences, as a result of which a similar outlook develops among people (Gerbner et al., 1994). In addition, Nellis (2009) argued, while traditional crime is mostly a local issue, terrorism mostly has a national or international aspect. Therefore, social and

physical cues alone are not enough to determine individual level fear. It is possible that exposure to the media mediate between direct or main effect of contextual factors and individual level fear of terrorism

Hypothesis - 15: Heavy exposure to media coverage of terrorism increases the likelihood of an individual's fear of terrorism, and it has the most influence on an individual's fear of terrorism compared to other factors.

III.H. Conceptual Framework

This study seeks to extend previous work on media exposure, terrorism risk, and fear of crime by integrating micro and macro level explanatory variables while focusing on a particular dimension of fear, that is, fear of terrorism. In particular, the study aims to test whether or not exposure to media coverage of terrorism, along with individual and contextual level factors and terrorism risk in space (as indicated by contextual indicators of traditional crime and disorganization as well as environmental risk factors of terrorism) influence fear of terrorism.

The contextual indicators can affect individuals' fear of terrorism in two ways. They can have direct effects, and moderating effects. They can contextualize or condition the effects of individual level factors on fear of terrorism, which may result in these effects to vary from one context to another. That's why, this study requires to uncover cross-level interactions (between individual and neighborhood level) in predicting fear of terrorism.

Figure 1 is the concept map of these possibilities. It illustrates the integration of individual level explanation of fear of terrorism in a model that incorporates contextual and environmental factors. At the individual level, exposure to media coverage about terrorism increases the level of fear of terrorism. Similarly, previous victimization has a positive influence on fear of terrorism, which is also affected by other individual-level explanatory variables. The direction of this relationship varies positively or negatively, depending on the specific variable.

The relevant literature suggests that an individual's fear of crime may also be affected by the environment and the neighborhood context in which the individual lives.

Spatial risk of terrorism in a neighborhood may be positively associated with fear of terrorism. The box in Figure 1 involves eight other neighborhood factors. While ethnic heterogeneity, subcultural diversity, residential mobility, and perceived neighborhood disorder have positive influence on fear of crime; neighborhood socio-economic status (SES), collective efficacy, formal control, and police effectiveness negatively affects individual fear of crime. Direct effects of the variables are indicated by solid arrows in Figure 1.

Nellis (2009) argued, while traditional crime is mostly a local issue, terrorism mostly has a national or international aspect. Therefore, social and physical cues alone are not enough to determine individual level fear. Therefore, it is possible that exposure to the media mediates between direct or main effect of contextual factors and individual level fear of terrorism.

It is also possible that the individual level effects of previous victimization on fear of terrorism vary from neighborhood to neighborhood. Hence, contextual factors might explain at least part of this variation. The blue dashed lines in Figure 1 indicate this possibility of moderating effects from the box containing the contextual factors to the arrows connecting previous victimization.

Gerbner et al. (1994) argued that the cultivation power of media coverage can vary among sub-groups of the society through mainstreaming and resonance effects. In mainstreaming effect, heavy exposure to media coverage erodes differences in perspectives of people, which stems from the diversity in their culture, social class, and other influences, as a result of which a similar outlook develops among people. Therefore, it is possible that media mediate the influences of the contextual factors on

fear of terrorism. The exposure to the media might also have a double-dose impact on those viewers with previous experience of violence. Thus, it is possible that media exposure and previous victimization interact on their impact on fear of terrorism, and the red dashed arrow indicates this relationship.

Again, while solid arrows in Figure 1 indicate direct effects of the variables, the dashed lines indicate these possible moderating effects of contextual variables on fear of terrorism.

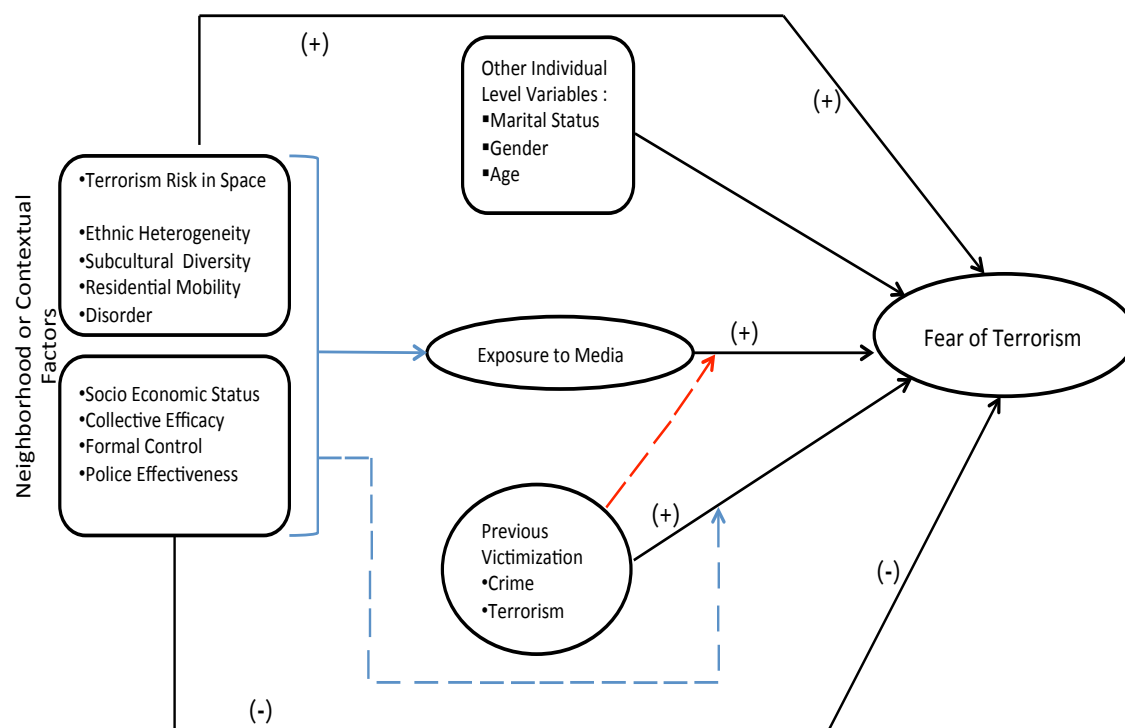


Figure 1- Effects of Individual / Context-Level Variables on Individual-Level Fear

CHAPTER IV: RESEARCH DESIGN & METHODOLOGY

This study attempts to explain fear of terrorism with some causes that exist in extant literature. Besides, it employs a deductive reasoning to reach at a conclusion about fear of terrorism in the context of Istanbul. Previous theoretical approaches are framing the study. Drawing upon criminological literature on fear of traditional crimes, as stated earlier, the purpose of the study is firstly to identify correlates of fear of terrorism; secondly to examine the role of media in shaping fear of terrorism; and thirdly, to probe if there is a spatial association between fear of terrorism and the risk of terrorism in neighborhoods. To this end, this chapter explains how the research is conducted, including a description of study site and procedures.

IV.A. Data Collection & Sampling Strategies

Mainly, three different datasets were used in the study, which were a cross-sectional survey dataset, a dataset with the addresses of terrorist incidents committed between January 2008 and August 2012, and the geo-referenced dataset on infrastructure.

IV.A.1. Survey Data

The participants' answers to a cross-sectional survey were used to understand the correlation between individual, and socio-environmental factors and fear of terrorism. The survey was conducted in 2012 in Istanbul. The geographic area of interest was the neighborhoods within police jurisdiction, and the survey was named as "Crime and Victimization in Istanbul Neighborhoods". It was a secondary dataset, but it was not publicly accessible, and the authorization to use the responses to the survey in this study was granted by the researchers who collected the data (see Appendix C).

The survey data in this research were collected from a randomly selected sample of 1874 respondents in 60 different neighborhoods in Istanbul. The sampling process was carried out by using a two-stage stratified cluster sampling method. In the first stage, 60 neighborhoods were randomly selected among neighborhoods that are within the jurisdiction of Istanbul Police Department. This community survey was designed to yield a representative sample of households within each neighborhood. In the second stage, hence, 1874 households were randomly selected from those 60 neighborhoods with the aim of obtaining at least a sample of 30 households within each neighborhood. Main households were replaced by substitutes using a systematic random sampling method when the interviewers were unable to reach anyone at the household at three attempts, or when potential participants rejected participation. In order to eliminate the effect of selection bias, the interviewers were requested to select the person who was older than 18 years, and whose name was first in alphabetical order at each household. The data were collected through face-to-face interviews by using a structured questionnaire.

IV.A.2. Terrorist Incidents

The study also used the data on terrorist incidents in Istanbul. Although terrorist groups committed crime before 2008 in the city, this study uses a sample of all incidents by a criterion of time. This criterion was based on the survey data that asked residents of Istanbul about their previous victimization in the past five years. Given that the survey was conducted in 2012, a sample of all incidents between 2008 and 2012 was considered to be appropriate for the purpose of this study.

As for the incident data, TNP (Turkish National Police) provided incidents summaries that occurred between January 2008 and August 2012 (see Appendix C). The raw data included 1294 incidents over the study period. Some of them were nonviolent incidents (e.g. unlawful demonstrations to propagandize a terrorist organization). The addresses of violent terrorist incidents that were provided by TNP were used to probe the spatial relationship between fear of terrorism and the places where crime occurred. The addresses of the incidents were listed on an excel file, and then, geocoded using the ESRI's World Geocoding Service that requires an authorization by the producer. The matching scores in geocoding were quite high. 98% of the addresses were successfully matched, which involved 1272 of all incidents. 22 addresses of all incidents (2%) were tied. For the accuracy of the geocoding, those incidents were revisited, and the media reports in Turkey were analyzed on Internet as terrorist incidents largely took place in the media. This further analysis revealed that 1153 of 1294 terrorist incidents were involved violence with a component of material damage, injury or death. As a result, 133 incidents that did not contain any violence were excluded from the analysis. Table 2 illustrates the frequency distribution of violent terrorist attacks by the perpetrator group.

Table 2. Frequency Distribution of Terrorist Incidents by Groups (2008-2012)

Perpetrator Group	Attack Type						Total
	Arson	Bomb Explosives	Violent Demonstration	Armed Assault	Armed Robbery	Invasion	
PKK	568	195	142	8	1	-	914
DHKP/C	35	28	55	8	1	-	127
MLKP	14	30	13	5	4	-	66
TKP/ML	3	10	1	-	1	1	16
MKP	-	12	1	3	-	-	16
TKIP	2	1	2	2	-	-	7
DK	-	4	-	2	-	-	6
Al Qaida	-	-	-	1	-	-	1
Total	622	280	214	29	7	1	1153

Over the study period, 8 terrorist groups have committed violent acts. The separatist terrorist organization, Kurdistan Workers Party, was responsible for 914 of all incidents that accounts for 79.2 %. There was only one violent terrorist act of right-wing organizations committed over the study period, which was an armed attack committed on July 9th 2008 by an Al Qaida affiliated cell in Turkey. They targeted the US Consulate in Istanbul. While the terrorists killed 3 police officers, all offenders were chased and caught following the attack in which 2 offenders were killed.

238 (21%) of the violent incidents have been committed by left-wing terrorist organizations. The Revolutionary People's Liberation Party–Front (DHKP/C) appears to be the most active group within this group with 127 (11%), which makes up about 53% of all incidents committed by extreme leftists. The Marxist Leninist Communist Party (MLKP) has committed 66 acts. The Maoist Communist Party (MKP) and the Communist Party of Turkey/Marxist Leninist (TKP/ML) have committed violent terrorism in the same frequency with 16 acts. The other two extreme leftist groups , the

Communist Labor Party of Turkey (TKIP) and the Revolutionary Headquarters (DK) have committed 7 and 6 violent acts respectively.

In respect for types of acts, arson was the most frequent way to commit terrorism. 622 incidents involved setting vehicles or buildings on fire, which accounts for 54% of all incidents in the sample. During the content analysis in incident summaries, it was observed that there were multiple vehicles or dwellings that were set on fire on the same date at the same location; however, they were not separately entered into the compiled data. Hence, each arson incident was taken on a one-day-in-one-place base. For example, on the February 2nd 2009, the PKK's terrorists set 5 vehicles on fire at 9.50 PM on the same street in the city. Though there was more than one victim in this offense, it was entered in the dataset as one arson, since the study is interested in place and time of incidences rather than the number of victims. Therefore, 622 incidences in the dataset don't necessarily mean that a total number of 622 vehicles and dwellings were subject to terrorist arson.

Another attack type is the one involving bomb and explosives. There were six different types of acts that involved explosives. In some cases, terrorists used the bombing as a tactic, and they used such tools as hand grenades. In other cases, they detonated such explosives as A-4 or C-4. The attempted explosion was another type that was observed in the dataset. Terrorists placed explosive devices in some places in the city, and the bomb disposal expert intervened in the situation before the devices were activated. Furthermore, There was only one suicide attack in the study period in Istanbul, and it was added in the group of incidents with bomb/explosive attack, as a result of which 17 police officer and 15 citizens were injured, and one terrorist was killed. Lastly,

some incidents involved banner bomb, and terrorist tied the explosives to the banners in a way to activate the system when one pulls the banner. The following picture that was found in the media is an example of how they commit this act ¹.



Figure 2- Bomb Squad Intervening in a Bombed Banner

This picture was obtained from a news website on Internet, and it is an illustration of one bombed banner incident in the dataset. The members of the Marxist Leninist Communist Party (MLKP) placed this assembly on the Mesut Street of Gulsuyu neighborhood (Esenyurt) on June 16th, 2012. The incidents with bomb/explosives accounted for 24% (280) of all incidents over the study period, and were mostly committed by the PKK that is a separatist group.

¹ <http://www.aktifhaber.com/pankarta-bomba-susu-verdiler-619031h.htm>

Another attack type was violent demonstrations. In 214 (18.5%) of incidents in the dataset, terrorist groups attempted to take on the streets illegally, and vandalized public and private properties around. Again, the PKK was the group that committed this act most. The armed assault was another attack type that terrorists resorted to. Almost all terrorist group committed this crime between 2008 and 2012, and it appeared to be a tactic used by extreme leftists. Terrorists also used the armed robbery to collect money from banks and jeweler stores , and the MLKP was the most dominant group in this act type. There was only one invasion of a building in the period of interest, in which the members of TKP/ML invaded a NGO building. Figure 2 illustrates the distribution of 1153 terrorist incidents in Istanbul.

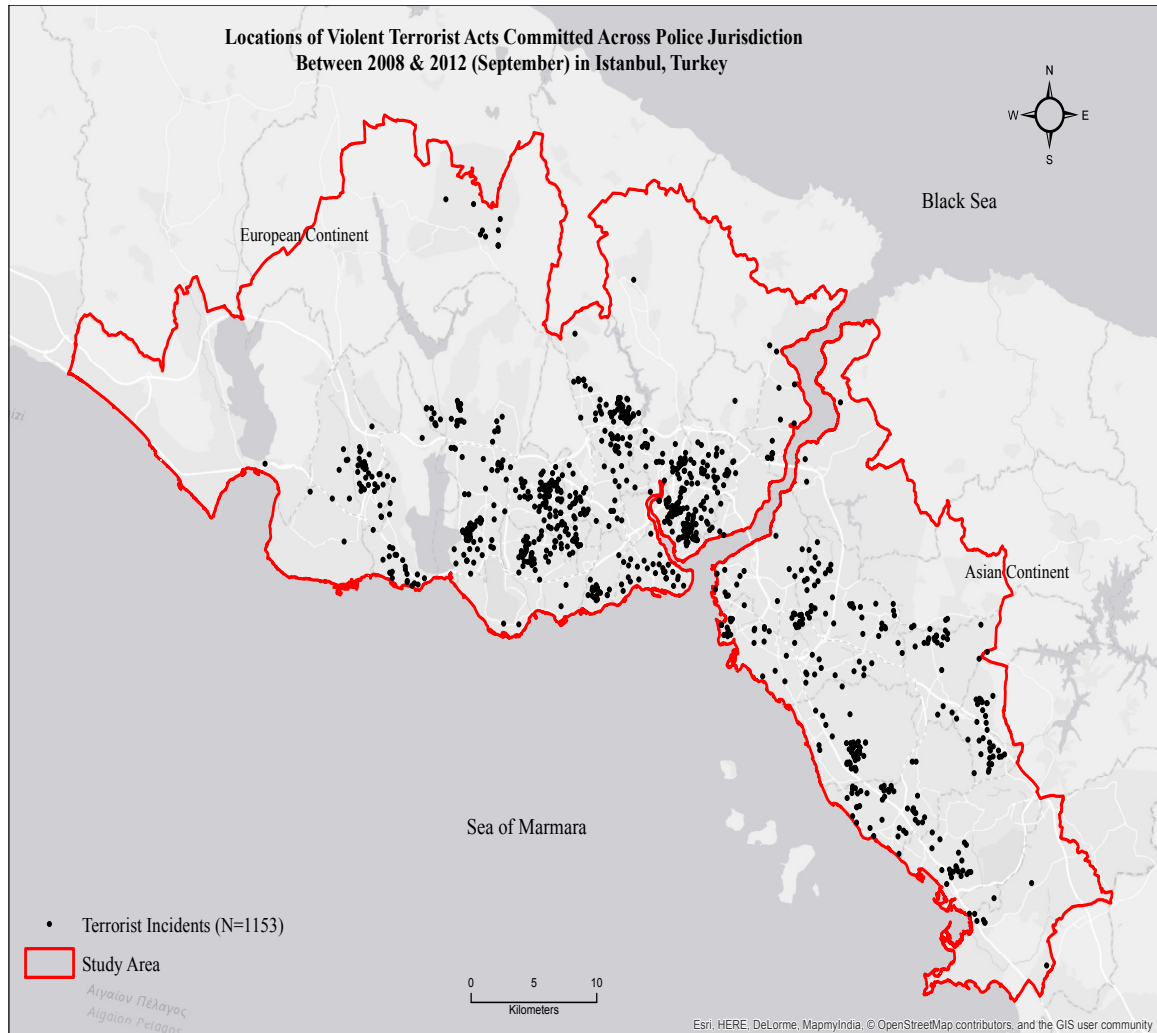


Figure 3- Distribution of Violent Terrorist Acts

All incidents were used in the RTM analysis that was conducted for all geographical area within police jurisdiction. However, terrorist incidents and related risk scores were used only for 60 neighborhoods where the Istanbul Survey was conducted in the final multilevel analysis. More specifically, the study used Risk Terrain Modeling (RTM) to identify risk levels (or values) of each neighborhood, which also required the use of data on infrastructure in Istanbul.

IV.A.3. Infrastructure

The third sample was drawn from a pool of features of environment in Istanbul. TNP also provided the geographic data that include the administrative borders (i.e., districts, neighborhoods, streets), and the features of infrastructure in Istanbul. There are about 163 thousand points of locations deemed as elements of infrastructure across Istanbul. The dataset includes locations of business places, recreational areas, government buildings, NGOs, and so on. However, the current study used only a sample of different layers of infrastructure that commonly exists around locations of terrorist incidents, which may be deemed as a purposive sampling of existing environmental features.

Istanbul has a total number of 39 districts and 944 neighborhoods (village, island, organized industrial zone, and neighborhoods). The stratified sampling process in the Istanbul Survey resulted in 60 residential neighborhoods in 32 districts. Therefore, only these neighborhoods within districts where the survey had conducted were included into the spatial analysis. Using Spatial Reference Properties tool in ArcMap 10.2, shapefiles were projected for the accuracy of the creation of joint layers and later spatial analysis. The projection was carried out by Gauss Kruger using ED 1950 3 Degree GK Zone 15. Turkey is between 28°30'E and 31°30'E, and this zone was suggested to be suitable for use².

The responses to the survey and the risk values of neighborhoods with respect to terrorism were modeled to understand correlations between fear of terrorism and terrorism risk.

² http://georepository.com/crs_5254/TUREF-TM30.html

IV.B. Measurement

The concepts to be measured in this study can be grouped into four main categories. The first concept is fear of terrorism that is the dependent variable. The second concept is the exposure to media that is the main independent variable. The third concept is the risk of terrorism. The fourth concept is the other correlates of fear of crime from the literature.

Drawing upon a randomly selected sample, the data analysis was inferential, and a number of variables were constructed through various survey items. According to Cooksey (2007), more variables may have a negative impact on inferences. For a construct-valid argument, this study condenses the large number of variables into a smaller number of measures of the salient constructs. In this respect, factor analysis is appropriate because it basically concerns correlations among closely related variables in a dataset. This approach uses principal component analysis, and common factor analysis to examine which variables may optimally be indexed into the same construct. In principal component analysis, it is assumed that theoretically built items may measure one concept simultaneously. On the other hand, common factor analysis is related to the common items that may measure one construct, and there may be unique items as well. Thus, factor analysis has to do with what items share in common with each other in terms of their variance. Component analysis may analyze the variance across items, and factor analysis only analyzes the variance that is shared commonly with other items. The end goal is the same: can we identify groups of items that are more similar or overlap with each other more tightly than they do other items that measure other things? Those

overlapping with each other, then, are deemed to be common constructs. The Kaiser criterion contends that factors with eigenvalues 1 or higher should be retained.

In this vein, the dependent variable and some of the independent variables were created through the use of various items that were measured using a Likert-scale. Therefore, these variables were ordinal in nature. A polychoric factor analysis was considered more appropriate than a Pearson factor analysis for ordinal measures because polychoric correlation provides a better fit to the theoretical model in factor analysis than Pearson correlation does (Holgado-Tello et al., 2010).

IV.B.1. Dependent Variables: Fear of Terrorism & Crime

In respect for measurement, the first concept was fear of terrorism. It was the first dependent variable for this study, and was measured by using participants' answers to four different questions in the above-mentioned survey. Respondents were asked how worried they were regarding the following situations;

- 1) "being injured or killed as a result of a terrorist attack in your neighborhood",
- 2) "getting your property damaged as a result of a terrorist attack in your neighborhood",
- 3) "being injured or killed as a result of a terrorist attack in Istanbul",
- 4) "getting your property damaged as a result of a terrorist attack in Istanbul",

The respondents were requested to answer these questions based on a 5-item Likert scale ranging from 1 (not worried at all) to 5 (very worried). Of all participants (N=1874), 35.27% (n=661) reported that they are worried about being injured as a result of a terrorist offense in their neighborhood; 66.71% (n=1250) in the City, and 60.46%

(n=1133) worried an injury or death in the Country. As for the worry about property damage, 35.7% (n=669) reported they were worried of their property getting damaged as a result of a terrorist offense in their neighborhood; 64.56 % (n=1210) in the City, and 62.7 % (n=1175) in the country (See Appendix 3). Those four items were analyzed for constructing one fear of terrorism variable. Table 3 illustrates the factor loadings (pattern matrix) and unique variances.

Table 3. Polychoric Factor Loadings for Fear of Terrorism

Index Items	Factor 1	Uniqueness
Property damage in Istanbul	0.862	0.256
Injury or death in Istanbul	0.883	0.219
Property damage in neighborhood	0.862	0.219
Injury or death in neighborhood	0.875	0.233

The principal components factoring process using those items resulted in one factor, and the value of fear of terrorism ranged from 1.14 to 5.71. The variable had a high reliability score (Cronbach Alpha=. 87), which indicates that 87% of the variance in the total score for fear of terrorism was shared across the four items. Higher scores on the fear of terrorism scale indicated higher levels of fear.

The second dependent variable is the fear of crime. To test the differences and similarities between fear of traditional crime and fear of terrorism; fear of crime was measured through four items in the Istanbul Survey. Respondents were asked how worried they were regarding the following situations;

1. being victim of any crime when they were walking alone at night in their neighborhood
2. being victim of any crime at night when they were alone at home.
3. being victim of any crime when they were walking alone during the day in their neighborhood
4. being victim of any crime during the day when they were alone at home.

The alpha for the scale was .84. The exploratory polychoric factor analysis with varimax rotation method indicated that these 4 items were associated with a single latent construct (factor loadings $> .77$). As such, the fear of crime scores ranged from 1.14 to 5.69. Table 4 presents the factor loading results for the fear of crime construct.

Table 4. Polychoric Factor Loadings for Fear of Crime

Index Items	Factor 1	Uniqueness
Walking alone at night	0.765	0.414
Alone at home at night	0.903	0.183
Walking alone during the day	0.920	0.152
Alone at home during the day	0.904	0.182

IV.B.2. Main Independent Variable: Exposure to Media

The second concept is the exposure to the media. A personal exposure to the media coverage variable were constructed using 4 different questions about the frequency of media consumption;

1. on any property damage caused by a terrorist attack in Istanbul,
2. on any property damage caused by a terrorist attack in any city around the country,
3. on any injury or loss of lives caused by a terrorist attack in Istanbul,
4. on any injury or loss of lives caused by a terrorist attack in any city around the country.

The respondents were requested to answer these questions by using a 5-item Likert scale ranging from 1 (very rare) to 5 (very often). A media exposure measure was created for each participant by using a polychoric factor loading approach. Table 5 shows the factor loading results for the exposure to the media variable. As such, the media exposure scores ranged from .46 to 5.46, and had a Cronbach's Alpha of (0.86) that indicates that 86% of the variance in the total score for personal exposure to media coverage was shared across four items. Higher scores on the media exposure scale indicated higher levels of exposure.

Table 5. Polychoric Factor Loadings for Exposure to Media

Index Items	Factor 1	Uniqueness
News on Property damage in Istanbul	0.9404	0.1157
News on Injury or death in Istanbul	0.8940	0.2008
News on Property damage in other cities of Turkey	0.9176	0.158
News on Injury or death in other cities of Turkey	0.9294	0.1363

IV.B.3. Environmental Risk of Terrorism

The **third main concept** in this study is the risk of terrorism. The risk is operationalized as the values attributed to the neighborhood using RTM techniques based on spatial features of the areas. More specifically, it is a combination of the location of terrorist incidents and the features of the physical landscape in the surrounding environment. That's why, it is important to initially explain how a terrorist incident should be understood.

IV.B.3.a. Terrorism

According to the Article 1 of the Law No: 3713 (Anti-Terror Act), definition of terror is described as follows;

“The terror is an act, by using force and violence, perpetrated by any of the methods of extortion, intimidation, discouragement, menace and threat by a person or by persons belonging to an organization with a view of changing the nature of the Republic as defined in its Constitution and its political, legal, social, secular and economic order, impairing the indispensable integrity of the State with its country and nation, endangering the existence of the Turkish State and Republic, weakening or annihilating or overtaking the state authority, eliminating the basic rights and freedoms and damaging the internal and external safety, public order or general health of the country.”

For an act to be considered as a terrorist crime, the crimes stated in the Article 4 of Turkish Anti-terror Act have to be committed with the purpose of the activities mentioned at Article 1. Accordingly, Article 4 of Turkish Anti-terror Act articulates that the offenses described in the different articles of Turkish Penal Code “shall be considered as terrorist offenses if they have been committed for the purposes described in Article 1

under the scope of the activities of a terrorist organization established with the purpose of committing crimes”

Pursuant to Anti-terror Act, Turkish National Police keeps records of crime incidents that were committed by far-left Marxist (e.g., DHKP/C- Revolutionary People's Liberation Party/Front), rightist (e.g., Al-Qaeda in Turkey or Hizbullah), and separatist (e.g. PKK- Kurdistan Workers' Party) terrorist organizations in Turkey. A sample incident summary is as follows:

“On January 1st, 2008 at around 18.00, a bomb detonated in a waste container that was in front of the building at Inonu Street 122 in Cumhuriyet Neighborhood of the district of Kucukcekmece. Two persons were wounded, and some buildings around the address were damaged. An investigation was initiated to identify suspect(s). “

In practice, counter-terrorism units intervene in any investigation with the suspicion of terrorism. If the incident is not a terrorist act, then it is cleared from the database of the Counter Terrorism Department. Therefore, the concept of incidence of terrorism is operationalized as “the incident of violent acts that were committed by a terrorist organization, and investigated by counter-terrorism unit in Istanbul”.

IV.B.3.b. Identification of Terrorism Risk in Space

Drawing on the addresses of incidents from summaries, the current study used RTM to identify the level of risk for each neighborhood. Clustering of risk factors across the urban terrain may serve as a metric to forecast crime behavior (Kennedy & Van Brunschot, 2009). This risk also changes in respect for victimization across locations where citizens live and place their property (Kennedy et al. 2011), which may result in fear among people. While the environmental backcloth may constitute a risk for crime,

and these features may help forecast crime in the future; the environmental risk of crime may also be predictor of fear. The question to be answered in the RTM analysis would be whether the places with terrorist incidents show similar patterns in respect for the physical features across landscape.

To answer this question, the current study used a stepwise analysis of Terrorism in Istanbul as described in Risk Terrain Modeling. These steps involved deciding the study area, identifying risk factors related to terrorism, selecting significant risk factors, operationalizing risk factors to risk map layers, defining grid size in RTM, combining risk layers to form a composite map, and aggregating risk values to neighborhoods.

In respect for study area, police jurisdiction in Istanbul was the study area for the RTM analysis. The jurisdiction of Istanbul Police Department (IPD) has 744 neighborhoods in total. However, not all neighborhoods have experienced violent terrorism over the study period. Of all 744 neighborhoods, about 340 neighborhoods have had violent terrorist incidents. As the geographic area of interest in this study is 60 neighborhoods where the survey was conducted, those neighborhoods that had not had terrorist incidents but were in the sample were also included into RTM analysis to identify their risk values.

To identify risk factors in RTM, the current study adopted a 3-steps approach. Firstly, the relevant literature was reviewed to identify correlates of terrorism in space, which was summarized earlier in this dissertation. Secondly, summaries of terrorist incidents were examined to list the spatial components of terrorism in Istanbul. An analysis of all violent terrorist incidents (N=1153) between 2008 and 2012 resulted in a categorization of the type of places where terrorists targeted in those incidents. In 464

incidents, they either directly targeted such places as government buildings, political party buildings or schools. For the purpose of the current study, these features of landscape were deemed as correlates of terrorism and the attractor terrain as it involved data on features that might entice terrorists to attack a particular location or target, either by a religiously or politically motivated terrorist group (Rusnak et al. 2012: p.168). Table 6 illustrates the types of targets and the frequency of attacks over the study period.

Table 6. Illustration of Targets by Frequency of Attacks

	Target	Number of Incidents
1	Political Party Office	118
2	Franchise (Similar to 7/11 in US)	90
3	Commercial	61
4	Educational Facility	33
5	Bank	22
6	Religious Facility	21
7	Recreational Space	18
8	Government	23
9	Squares	15
10	Health Facility	11
11	Coffee House	10
12	Restaurant	10
13	Post office	9
14	NGOs	8
15	Bus stop	8
16	Jewelers	3
17	Consulate	2
18	Media Office	2
	Total	464

The most frequent attacks were carried out against political party buildings. Then, terrorist attacked franchise stores that are similar to 7/11 stores in the US. Most of the attacks to franchises involve one company called as BIM. Consistent with the literature, religious facilities, banks, government entities, health facilities, NGOs, and recreational space were targeted by terrorist groups.

Third step to identify risk factors of terrorism is to analyze the built environment in the neighborhoods with the highest number of terrorist incidents. To this end, the top 10% highest-incidents neighborhoods (neighborhoods with incidents above 2 standard deviations) were selected. The number of incidents changed between 10 to 41, and in 23 neighborhoods 439 incidents were committed out of 1153. In other words, 23 neighborhoods (3%) experienced 39% of all incidents. Then, a new shapefile for the infrastructure of these particular neighborhoods were created to identify the most recurrent observations of infrastructure. Overall, the analysis results indicated that grocery stores (n=2705) and eateries (n=739) -cafés, coffee houses, fast food, and restaurants- were the physical features with the highest number in these hotspot neighborhoods. The resulting list of 21 potential correlates is illustrated on the table 7.

Table 7. Counts of Physical Features in Top 10% Highest-incident Neighborhoods

	Feature	Counts in Neighborhood
1	Grocery Store*	2705
2	Eatery*	739
3	Bakery/Patisserie	383
4	Mechanic	248
5	Financial Institution*	214
6	Pharmacy	213
7	Educational Facility*	208
8	Bus stop*	200
9	NGO*	164
10	Liquor Store	161
11	Office block	157
12	Park*	114
13	Bar/Club	114
14	Religious Facility *	114
15	Franchise*	102
16	Government Entity*	89
18	Health Facility*	69
20	Parking Lot	57
21	Political Party*	19

(* Physical features that were also targeted by terrorists)

IV.B.3.c. Modeling Terrorism Risk

Based on the types of target and the most frequent features of the environment, the next task was to determine the significant infrastructural risk layers to factor the terrorism risk in space. For this purpose, RTMDx software (Risk Terrain Modeling Diagnostic Tool) was used, through which statistically significant risk factors are identified according to their spatial influence (proximity or density).

Before beginning Risk Terrain Modeling, it is important to test whether terrorist incidents committed between 2008 and 2012 are clustered across police jurisdiction in Istanbul. Therefore, the average nearest neighborhood analysis was conducted in ArcMap 10.2. The results indicated that given the z-score of -40.36, there is a less than 1%

likelihood that this clustered pattern could be the result of random chance. In other words, the terrorist incidents in the study period were statistically significantly clustered ($z = -40.36$, $p = 0.000$).

Following the identification of the cluster, 10 steps and techniques of Risk Terrain Modeling were applied to find risk values of 60 neighborhoods under study (Caplan & Kennedy, 2010). In the first step, terrorism was selected as an outcome event. The second step is to decide a study area for which risk terrain maps will be produced, and the current analysis used Istanbul, Turkey as the study area. Third step is to choose a time period to create risk terrain maps, and one year time period was selected between 2008 and 2012 (January 1 to December 31). In the fourth step, the three basemaps were obtained from Turkish National Police; 1) Polygon shapefile of the District of Istanbul, 2) street centerline shapefile for Istanbul, and 3) Polygon shapefile of the neighborhoods in Istanbul. The shapefile (polygon) for the area of neighborhoods included four different types of polygons; village, island, organized industrial zone, and neighborhood. There was a selection criterion for the neighborhood shapefile. The study was mainly interested in Police jurisdiction, and villages and islands are within the jurisdiction of Gendarmerie. Therefore, a new shapefile was produced only for the analysis including organized industrial zone and neighborhood. The resulting shapefile included 744 polygons to conduct risk analysis. The geographical areas of neighborhoods varied in shape and size. In the neighborhood with the smallest area shape (square meters), the distance between two edges was about 250 meters. The largest neighborhood is Mithatpasa in Eyup district. The longest distance between two edges is 14,860 meters. Figure 4 below illustrates the shapes of 60 neighborhood where the Istanbul Survey was conducted.

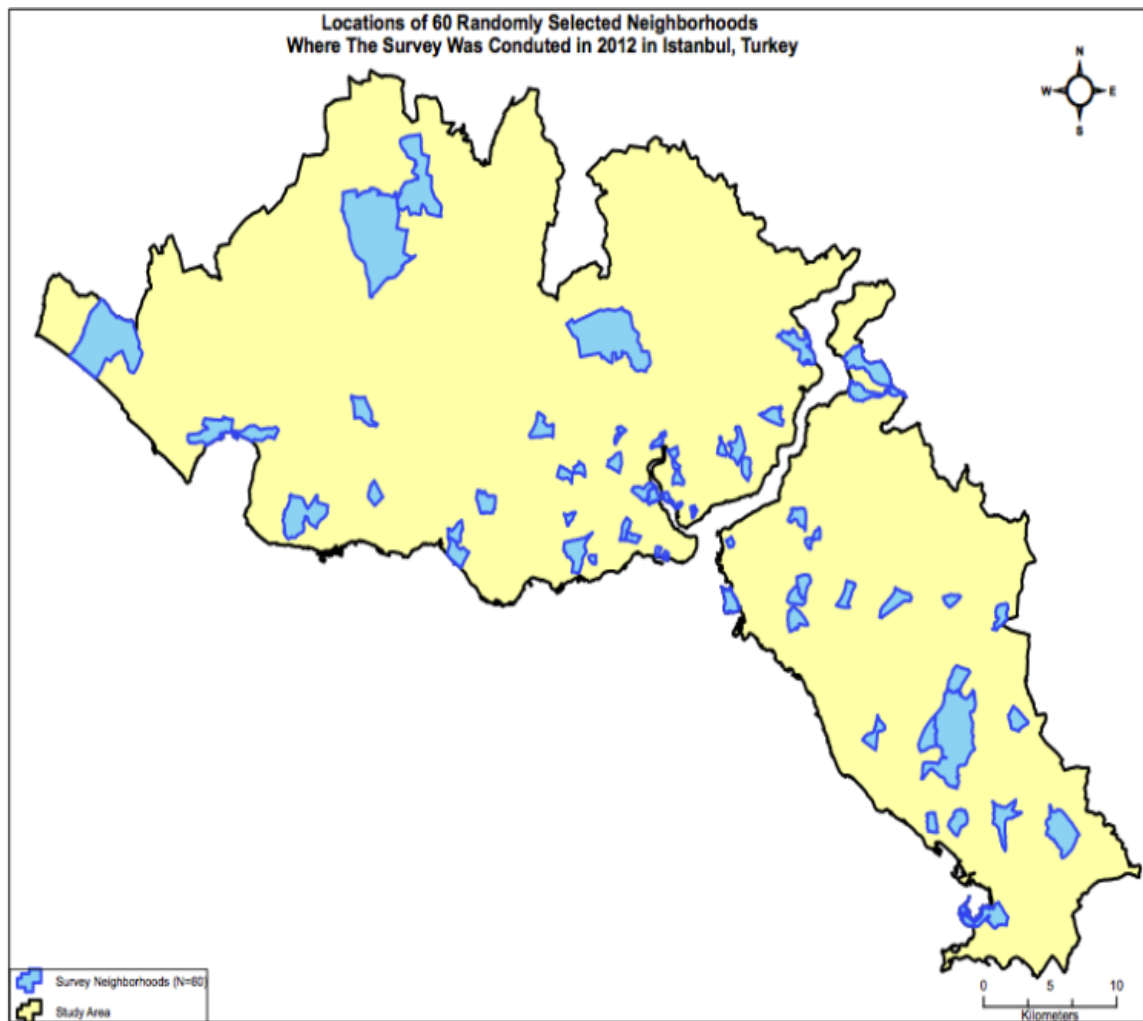


Figure 4- Distribution of 60 Randomly Selected Neighborhoods

The fifth step is to identify aggravating and mitigating risk factors that are related to terrorism. Drawing on the literature review, the targets in terrorist incidents, and landscape features in the 10% highest-incidents neighborhood, 17 factors were identified in Istanbul over the study period.

In the sixth step, the study selected particular risk factors to include in the risk terrain model, and all risk factors identified in the previous step were included.

Step seven is to operationalize risk factors to risk map layers. Defining the grid size in RTM is a crucial step to the operationalization of risk factors. Kernel density values were calculated for each of the risk layers. Kernel density weights cells by the distance of a cell's search area to the center of the cell. So, points lying near the center are more heavily weighted than those lying near the edge. The specific parameters for each of density calculations was suggested to be the mean street block length (Caplan & Kennedy, 2010). Accordingly, by selecting study area by police jurisdiction, a new shapefile for streets was reproduced. An analysis of shapefile for streets shows that the average block length is 222 meters (SD= 281). Thus, the half of a block length (110 meters) is appropriate to create 110x110 m. cells in RTM analysis to provide environmental risk values for terrorism. In addition, empirical research suggested that the average distance of one daily walking trip is (0.5) miles that is about 800 meters (Carp, 1988; Yang & Diez-Roux, 2012). Therefore, the analysis will provide the risk of terrorism using 110x110 meters cells within 660 meters perimeter that is the largest analysis increment in RTMDx given the number of risk factor inputs.

110 x 110 m. Cells within each density map layer were classified into 4 groups, using standard deviational breaks. This classification is useful because, statistically, the portion of the observations greater than 2 standard deviations is the top 5% of the distribution. It also standardizes the comparison across different map layers (Caplan & Kennedy, 2010).

As mentioned above, risk factors are identified according to their spatial influence (proximity or density). For the risk factors to be operationalized based on proximity, it was hypothesized that the distance of 1000 meters (about a 15 minute walking distance)

from a facility poses the greater risk of terrorism because victims are often targeted when arriving at or leaving the establishment. For those operationalized based on density, it was hypothesized "high concentrations of particular physical features (e.g., eateries) increase the risk of those dense places having terrorist incidents". All risk factors were operationalized as aggravating factors.

The Risk Terrain Modeling Diagnostics Utility was run to generate a model of terrorist incidents for 744 Neighborhood Area. A model was produced to represent the risk factors for 1153 events in the data set considering the potential spatial influences of the variables listed in the table 8. All geographic calculations were conducted in the projection of the study area boundary, using raster cells of 110 m and an average block length of 220 m. There were 149133 raster cells used in the analysis of which 905 cells contained events. Table 8 summarized these processes.

Table 8. Frequency, Operationalization and Influence of Potential Risk Factors

	Feature	Count	Operationalization	Spatial Influence	Analysis Increment
1	Bakeries	7954	Proximity	3 Blocks	Whole
2	Banks/ATM	5624	Proximity	3 Blocks	Whole
3	Bar/Clubs	1279	Density	3 Blocks	Whole
4	Franchise	1366	Proximity	3 Blocks	Whole
5	Bus stops	6151	Density	3 Blocks	Whole
6	Eateries	15400	Density	3 Blocks	Whole
7	Educational	3567	Proximity	3 Blocks	Whole
8	Government	2192	Proximity	3 Blocks	Whole
9	Hospitals	1449	Proximity	3 Blocks	Whole
10	Groceries	10037	Density	3 Blocks	Whole
11	Liquor Stores	2415	Proximity	3 Blocks	Whole
12	NGOs	2290	Proximity	3 Blocks	Whole
13	Office Blocks	7360	Proximity & Density	3 Blocks	Whole
14	Parks	2696	Proximity	3 Blocks	Whole
15	Pharmacies	5612	Proximity & Density	3 Blocks	Whole
16	Political	176	Proximity	3 Blocks	Whole
17	Religious	3394	Proximity & Density	3 Blocks	Whole

These 17 risk factors generated 60 variables that were tested for significance. This testing process began by building an elastic net penalized regression model assuming a Poisson distribution of events. Through cross validation, this process selected 27 variables as potentially useful. These variables were then utilized in a bidirectional stepwise regression process starting with a null model to build an optimal model by optimizing the Bayesian Information Criteria (BIC). This score balances how well the model fits the data against the complexity of the model. The stepwise regression process was conducted for both Poisson and Negative Binomial distributions with the best BIC score used to select between the distributions.

The RTMDx Utility suggested that the best risk terrain model was a Negative Binomial type II model with 8 risk factors and a BIC score of 9957.2. The model also includes an intercept term that represents the background rate of events and an intercept term that represents overdispersion of the event counts. The results are illustrated on the table 9.

Table 9. Results of Best Model Specification From RTMDx

Dependent Variable : Terrorist Incidents (N=1153)					
Type	Feature	Operationalization	Spatial Influence	Coefficient	Relative Risk
Rate	Bakeries	Proximity	440	1.2931	3.6441
Rate	Religious	Proximity	440	1.0127	2.7530
Rate	Bar & Clubs	Density	660	0.9171	2.5021
Rate	Groceries	Density	660	0.8725	2.3930
Rate	Franchise	Proximity	660	0.7864	2.1956
Rate	Office Blocks	Proximity	660	0.5741	1.7755
Rate	NGOs	Proximity	440	0.5735	1.7744
Rate	Eateries	Density	220	0.5245	1.6896
Rate	Intercept	--	--	-8.3878	--
Over dispersion	Intercept	--	--	-0.5849	--

Based on the results from the "best" model specifications displayed above, 8 kernel density risk map layers were manually produced. 5 risk factors based upon proximity were set to 1 for areas within the distance threshold and 0 elsewhere. 3 Risk factors based upon density were set to 1 for areas 2 standard deviations above the mean value after applying a kernel density operation of the specified bandwidth and set to 0 in other areas. They were reclassified to a binary-valued schema to identify the "highest risk" places across all risk map layers. Such a reclassification enables to know where places are the most at risk for terrorism. Highest risk places were given a value of "1", while all other places had a value of "0". In brief, risk factors were operationalized as density maps, classified by standard deviational breaks.

The next step in RTM is to combine risk map layers to form a composite map. The standardized risk map layers were summed together to create a composite risk terrain map. Using ArcGIS for Desktop's "Raster Calculator" function the 8 manually produced risk map layers were then combined through map algebra to produce a risk terrain map and to calculate relative risk scores.

The selected risk terrain model was assigned relative risk scores to cells ranging from 1 for the lowest risk cell to 702.1 for the highest risk cell. These scores allow cells to be easily compared. For instance, a cell with a score of 702.1 has an expected rate of crime that is 702.1 times higher than a cell with a score of 1.

The last step in RTM is to finalize the risk terrain map to communicate meaningful information. The raster shapefile that included relative risk scores was converted to a vector shapefile (point) to perform additional analyses based on these scores. To convert the GRID shapefile from RTMDx analysis, RTM toolbox for ArcGIS

(10) was used, which is available on Rutgers Center For Public Safety webpage³. Then, it was added in toolbox of the software. Using the convert raster layer to vector grid, a new shapefile for the further analysis was created.

The raster map with scores is a composite map layer that was reproduced through a process of summing up the 8 risk map layers that RTMDx diagnosed as significant. Then, the new composite layer with relative risk scores was clipped to fit the boundaries of the study area. The resulting map layer had 149133 units (cells sized as 110 x 110 meters). The relative risk scores ranged from 1 to 702.1 (mean=33.96, SD=70.15). The composite map of terrorism risk in Istanbul is shown on Figure 5.

³ <http://rutgerscps.weebly.com/rtm.html>

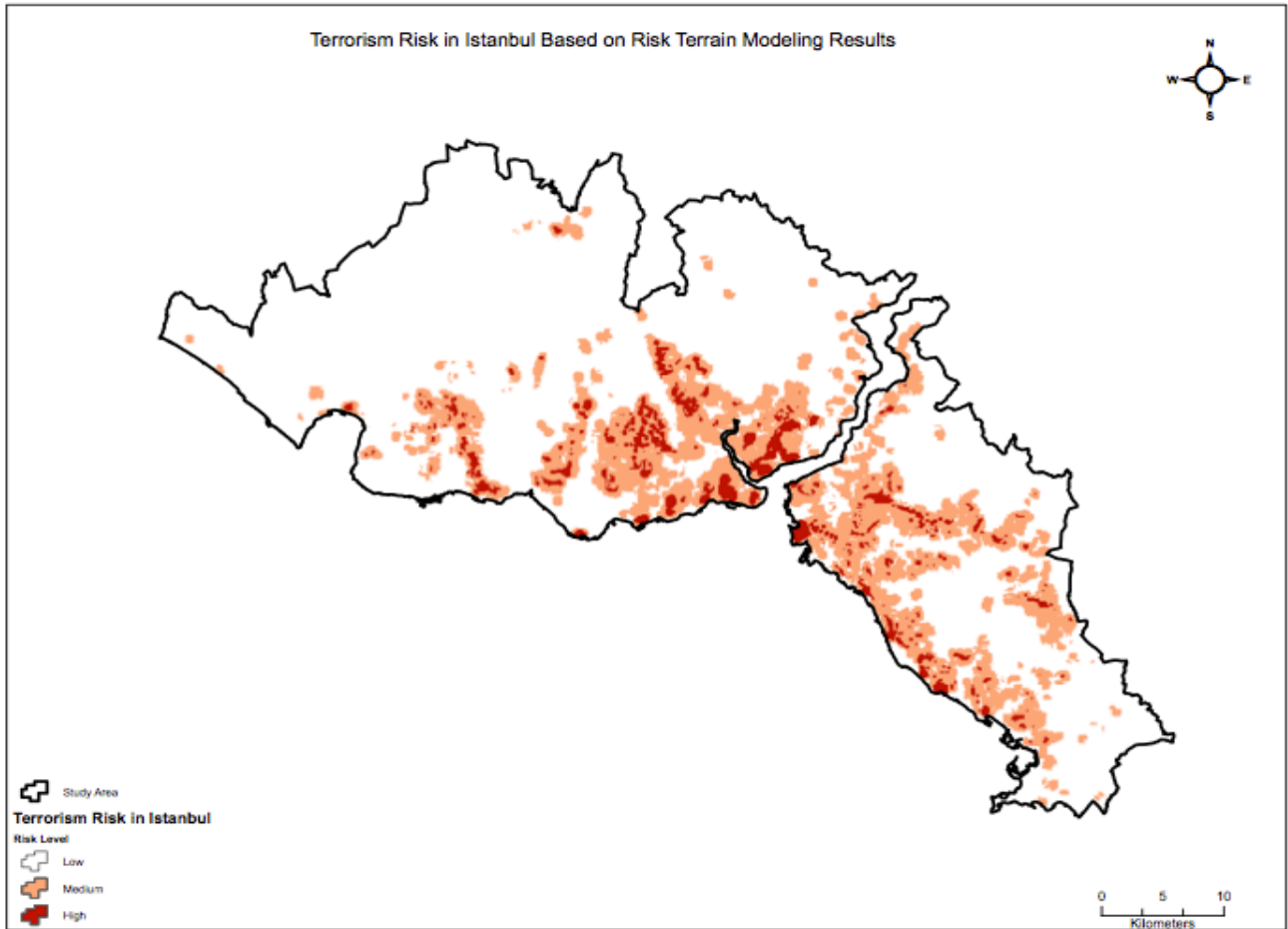


Figure 5- Map Illustrating Terrorism Risk in Space

To attribute relative risk values of the incidence of terrorism, these individual cells across 744 neighborhoods were aggregated to the respective neighborhood that each cell was nested. “Spatial join” in ArcMap 10.2 was employed to have risk values at the neighborhood level. Then, the spatial join operation was conducted for 60 neighborhoods where the Istanbul Survey was conducted. Before finalizing the terrorism risk values for the multilevel analysis, it is important to check for spatial autocorrelation at the neighborhood level. Therefore, spatial autocorrelation test was conducted for the outcome

event (terrorism risk). Basically, the distribution of an observation across geographical units are assumed to be independent for regression analysis. that is, values observed in a particular geographical unit must be not influenced by corresponding values in the nearby units. Moran`s I statistics test this autocorrelation. if the test results approach (+1), there is positive spatial autocorrelation, meaning units are geographically situated near other similar units. When the result approaches (-1), then there is a negative autocorrelation. the test results indicated that the pattern does not appear to be significantly different than random ($z=-0.05$, $p=0.96$).

The risk values that were calculated in ArcMap were exported, and then, combined with the Istanbul Survey dataset as terrorism risk variable at the neighborhood level. The terrorism risk variable ranged from 1 to 481.36 in 60 randomly selected neighborhoods.

IV.B.4. Correlates of Fear of Crime

This study will also use other correlates of fear of crime from criminological literature to understand if they influence fear of a particular crime type. There are 13 constructs to be used to as other correlates of fear of terrorism. Seven variables are neighborhood level variables that involve (1) perceived disorder in the neighborhood, (2) collective efficacy, (3) formal control, (4) police effectiveness, (5) Socio-Economic Status (SES), (6) residential stability, (7) heterogeneity, and (8) subcultural diversity. Five variables are individual level variables that include (1) previous victimization, (2) victimization of terrorism, (3) age, (4) marital status, and (5) gender.

For the social disorganization and neighborhood level variables, the current study adapts Sampson and Groves's approach to construct community variables. Their study used geographical area identifiers for each household, then, aggregated responses to selected survey questions within each of areas and constructed structural variables -e.g., means and percentages (Sampson & Groves 1989, p.783). Thus, individual responses will be aggregated in each neighborhood, computing the mean and percentage of residents according to the variable of interest.

IV.B.4.a. Neighborhood Level Variables

Neighborhood **disorder** was measured based on 12 statements about physical and social disorder in neighborhoods. Sample statements about physical disorder include “there is too much garbage on the streets”, or “there are so many deserted homes in the neighborhood”. Sample statements about social disorder, on the other hand, comprise statements such as “there is too much noise in the neighborhood” or “there is widespread panhandling in the neighborhood”. Respondents were asked to indicate their level of agreement with 12 statements on a 5-item Likert-scale ranging from 1 (totally disagree) to 5 (totally agree). Polychoric factor analyses of both measures resulted in one factor for each type of disorder. The **physical disorder** measure generated a continuous variable by using factor scores of six items, and then aggregating individual scores up to the neighborhood within which respondents reside. Thus, the value of neighborhood perceived physical disorder ranged from 1.61 to 4.09. Likewise, the social disorder variable was constructed from factor scores of the six items, and individual scores were aggregated up to their respective neighborhoods. The value of the neighborhood

perceived social disorder variable ranged from 1.68 to 4.77. The physical disorder construct had a Cronbach's Alpha of (0.75), and the value for the social disorder construct was (0.82). Further analysis indicated that both constructs were highly correlated ($r = 0.85$, $p < 0.001$), which suggest that the two measures were tapping aspects of the same latent construct. In fact, this result is consistent with the theoretical expectation that social disorder has an influence on the neighborhood decline in a similar way to the physical disorder (Kelling & Coles 1996; Skogan, 1990; Wilson & Kelling, 1982). A further factor analysis was conducted to test whether those 2 variables may be factored into one construct. Then, a neighborhood disorder variable was created through the combined measures of physical and social disorder. Higher scores indicated higher perception of disorder.

Collective efficacy was measured by using Sampson, Raudensbush and Earl's (1997) collective efficacy scale. Sampson et al.'s (1997) collective efficacy scale consisted of ten questions each of which was scored on a 5-item Likert-scale ranging from 1 to 5, and asked about perceived cohesion, trust and informal control in the neighborhood. Individual scores of collective efficacy were aggregated to their respective neighborhoods. Neighborhood collective efficacy scores ranged from 5.11 to 9.44, and had a relatively lower reliability (Cronbach's Alpha=.69). Further analysis indicated that both constructs were highly correlated ($r = 0.85$, $p = 0.000$). A factor analysis between informal social control and social cohesion variables resulted in one Eigen value over 1.0. Then, a neighborhood collective efficacy variable was created through the combined measures of informal social control and social cohesion. Higher scores indicated a higher perception of collective efficacy at the neighborhood level.

The **formal control** scale was constructed by asking respondents if they agreed with the statements indicating that certain public institutions (i.e., police, municipality, government, etc.) provided the type of services needed in the neighborhood. Participants were asked to respond to those questions based on a Likert-scale ranging from 1 (totally disagree) to 5 (totally agree). Five items comprised the formal control construct, and the scale had a high Cronbach's Alpha of 0.87. Individual responses were aggregated to their respective neighborhoods, and neighborhood formal control value ranged from 3.46 to 5.13.

Police effectiveness measure was measured based on three questions asking about respondents' perception of the success of the police in terms of preventing terrorist attacks, immediately intervening to deal with terrorist attacks, and bringing those involved in terrorist attacks to justice. Participants were asked to respond to those questions based on a Likert-scale ranging from 1 (totally disagree) to 5 (totally agree). Individual level perceptions on the police effectiveness scale showed a quite high reliability (Cronbach's Alpha=.93). Individual responses were aggregated to their respective neighborhoods, and neighborhood police effectiveness ranged from 2.48 to 4.91. Higher scores reflected a higher perception of police effectiveness.

There are three neighborhood level variables in Shaw and McKay's model. These are Socio-Economic Status (SES), residential stability, and ethnic heterogeneity. The **SES** was defined with the construction of a scale from the survey by summing z-scores of education (percentage high school educated), occupation (percentage employed), income (percentage with high income) in each neighborhood.

Earlier studies in Turkey used the percentage without middle school degree as a proxy measure to education (Duru, 2010; Ozkan, 2012). In the current dataset, the educational level of respondents was coded on an ordinal scale ranging from 1 to 9 with “1” representing illiteracy and “9” representing doctorate level. Unlike previous studies, the current survey was conducted with residents older than 18. The percentage of residents with high-school degree and more was used as a proxy measure to neighborhood education level because job applications require a high-school or a higher degree.

The survey asked participants about their occupational status, and the answers were codes as 1 “employed”, 2 “looking for a job (unemployment)”, 3 “retired”, 4 “homemaker”, and 5 “student”. For each neighborhood, percentage of residents employed was used as a proxy measure to the level of education in neighborhood.

The monthly household income is also an ordinal variable ranging from 1 (less than 500 Turkish Liras) to 7 (5001 Turkish Liras and more). As the average monthly household income for 2012 was 1,343 Turkish Liras⁴, percentage of households with the monthly income above 1500 Turkish Liras was used as a proxy measure for neighborhood income.

One reason for the use of z scores is that all three variables (education, occupation, and income) were measures different units, and the combination of their raw scores resulted in the domination of the values income as this variable included larger

⁴ According to TurStat (2013), the average monthly household income for the year 2012 was 1,343 Turkish Liras. Thus, household with a monthly income over 1500 Turkish Liras are constructed as household with high incomes.

numeric values. Such a conversion to z scores also enabled to equal weight that resulted in the formation of a unit weighted composite measure of SES (Warner, 2008).

Thus, the formula used for indexing SES is as follows:

$$\text{SES Index} = Z_{\text{education}} + Z_{\text{occupational status}} + Z_{\text{income}}$$

Consistent with the research, the SES related variables were highly associated and load on the same factor. The test of reliability indicated the index is reliable (Cronbach $\alpha = .71$). A further principal factor analysis indicated one component with an Eigenvalue exceeding 1, the first factor is dominated by high by high loadings (> 0.87) for the percentage of residents with high education, employment, and high income. After aggregating individual SES scores of the resident to their respective neighborhoods, the neighborhood Socio Economic Status for 60 neighborhoods in the sample ranged from 26.66 to 210, and higher scores indicated more affluent neighborhoods.

The data for education, occupation and income at the neighborhood level are not available in Turkey. This limitation results in the use of a proxy measure to test the reliability of the SES construct. Earlier research in urban economics has used land value per square feet or meters as a predictor of crime to analyze the relationship between crime and urbanization (Buck et al. 1991; Yirmibesoglu & Ergun, 2007). Neighborhood land value variable was constructed using data from Istanbul Revenue Administration ⁵. Thus, the land value in Turkish Lira per square meter for each neighborhood in the sample were used to compare the reliability of the SES constructed from survey responses to the real economic conditions in each neighborhood. The use of land value makes sense for such an analysis because the residents an area may afford living in a

⁵http://www.gib.gov.tr/fileadmin/user_upload/ArsaArazi2010/istanbul.pdf?sayfa=fileadmin%2Fuser_upload%2FArsaArazi2010%2Fistanbul.pdf&test=G%F6ster

place based on their social and economic status in the society. Consequently, the official socio economic status at the neighborhood level in the form of land values per square meter was significantly correlated with the socio economic status measured in the Istanbul Survey ($r= 0.37$, $N= 60$, $P< 0.01$).

The **residential stability** was defined by two variables, the percentage of households living in the same neighborhood as 60 months earlier⁶ and the percentage of households in an owner-occupied home for each neighborhood. Accordingly, the variable was measured as in the following formula;

$$\text{Residential Stability} = \frac{(\# \text{ of residents more than 60 months} + \# \text{ of home owners})}{\text{Total number of participants in the neighborhood}} * 100$$

Residential stability at the neighborhood level ranged from 130 to 143.

Unlike the US and UK, race and ethnicity are not officially recorded in Turkey. Besides, the ethnic diversity is not substantial and visible among groups (e.g., Turks, Kurds, Arabs). On the other hand, the migration in the country from other places reshaped the social structure of the cities in such a way that those migrants and their neighborhoods have always been seen as “others” by the mainstream society (Erman, 2001). From these standpoints, Duru (2010) constructed heterogeneity by using birthplace of residents of a place. He operationalized the heterogeneity of a neighborhood as the sum of foreign born and born in another part of the country divided by its population. The statistics of the survey used in the current study are in line with these arguments. Participants were asked to identify themselves with respect to identity. About 94% of the respondents identified themselves as Turkish, and 6% reported 10 different

⁶ Five years of residence (60 months) was used as an indicator of stability in Sampson et al.'s (1997) study.

ethnicities. The questionnaire included also an item asking residents' place of birth. About 30% of respondents were born in another city other than Istanbul in Turkey. Therefore, the current study constructed heterogeneity in each neighborhood as follows:

$$\text{Heterogeneity} = \frac{(\text{\# of participants born in another city} + \text{\# of foreign born participants})}{\text{Total number of participants in the neighborhood}} * 100$$

Consistent with the explanations made in the previous paragraph, the current study has adopted the term "Population Heterogeneity" because of the contextual differences in Turkey, and the population heterogeneity at the neighborhood level ranged from 3.33 to 96.66 in the sample.

Subcultural diversity was constructed based on Kennedy and Silverman (1985) definition of social diversity, which is "residents' feelings about their neighborhoods in terms of whether they believe the people around them are like them or different" (p.276). The survey to be used in the current study asked respondents how different they see themselves from the other people in the neighborhood in respect for "ethnic identity", "level of education", "religious values", "political opinions", and "overall lifestyle". They evaluated their difference based on a Likert-scale ranging from 1 (not different at all) to 5 (totally different). Five items comprised the subcultural diversity construct, and the scale had a high Cronbach Alpha of 0.90. Individual responses were aggregated to their respective neighborhoods, and neighborhood subcultural diversity value ranged from 1.21 to 5.61.

Throughout the factor analyses in the measurement process, the current study has used varimax factor rotation as a confirmatory factor analysis.

IV.B.4.b. Individual Level Variables

Previous victimization was measured using a binomial variable. There are survey items that asked respondents whether they were previously victimized by any of 17 different types of crime such as vandalism, burglary, arson, theft/pick pocketing/swindling, threats and assault with or without a gun, sexual harassment, and sexual assault or rape. Individuals who were previously victimized by any of 12 different types of crime were coded as "1"; and those who were not victimized were coded as "0".

Victimization of terrorism was measured independently from previous victimization. Four different survey items asked whether participants or their relatives experienced any bodily injury, death or material loss as a result of terrorist attacks in the last 5 years. Those who reported experience of terrorism were coded as "1", and those who did not report victimization from terrorist attacks were coded as "0".

In addition, responses about **age, marital status, and gender** will be used as control variables. **Age** was measured as an interval/ratio variable representing the age of the respondents in years. Gender was coded as a binary variable with "1" representing males and "0" representing females. Marital status was coded as a dummy variable with "1" representing married participants, and "0" representing all others (who are not married, divorced, widowed, etc.).

IV.C. Study Site & Procedures

Istanbul is the most populated and urbanized city of Turkey. According to Turkish Statistical Institute (TurkStat), 14.160.467 people are living in Istanbul, which is about

18% of the entire population of the country⁷. The focus of the study will be on 60 neighborhoods of Istanbul that were randomly selected to conduct a survey in 2012. These neighborhoods are the ones that are in the police jurisdiction. To explore the role of social context in fear of terrorism, the residents' responses to the questionnaire will be aggregated to neighborhood in which they live. In respect for incidence of terrorism, the area of interest in this study will be the police jurisdiction in Istanbul. All locations with terrorist incidents and the surrounding infrastructure will be needed to identify risk factors, and the level of terrorism risk in each neighborhood of Istanbul.

Therefore, one part of this study involves an analysis of terrorism on space by using data from a police agency that has been structured by geo-administrative features of the country. In the analysis of crime on space, it is important to understand geographical attributes of the location. For this particular study, an understanding of the TNP's structure is also helpful to give an idea on how the police organization operates, and produces data on crimes.

IV.C.1. Cities in Turkey & Neighborhoods

Geographical units in urban areas differ across the world. While the US has census tracts, the UK has adopted enumeration districts as the smallest statistical subdivision of a county. Similarly, Turkey uses neighborhood as the smallest division of geographical area. Similar to the US and the UK, street segments and neighborhoods are also taken into account in the administrative structure, but the local governance starts at the district level as the least minimum level. In a geographical context, streets constitute

⁷ <http://www.turkstat.gov.tr/>

neighborhoods; neighborhoods constitute districts; districts constitute cities in Turkey. There are 81 cities across Turkey, and each city has a different number of districts and neighborhoods.

IV.C.2. TNP's Structure & Data Production

Police jurisdictions are established by this geographical division of cities and their districts. Unlike the decentralized structure of police in the US, the TNP that have more than 230,000 sworn personnel is a centralized organization at the national level. It is headquartered in the capital city of Turkey in Ankara, and administered by the Minister of Interior. TNP has a highly centralized and integrated organizational structure across the country, and is directed by General Director of TNP. Ranking and deployment systems are planned and implemented from headquarters. Each city has a police department, and each district police are under the command of city police commissioner who is appointed by Ministry of Interior.

Within this hierarchical and organizational structure, there is real time information sharing between city police departments and TNP headquarters, which consist of such departments as Counter-Terrorism or Anti-Smuggling and Organized Crime. Once a crime is committed in any location of Turkey, the local police inform headquarters via city police departments. TNP's departments within headquarters are responsible for creating databases, analyzing data continuously, and making decision in partnership with city police departments on how to respond to incidents in the face of newly emerging conditions. Therefore, any response to crimes can be planned and operated either across the country in general or in some cities and districts in particular.

In this sense, the outcomes of the current study can be used by TNP to create a response to terrorism and fear of terrorism.

IV.D. Study Procedures

The data for this study do not involve a risk to human subjects, and the procedures have already been approved by IRB of Rutgers University (See Appendix 4). Those who collected the survey data already cleared all identifying information before the dataset was handed over to the researcher. Survey data was used in a quantitative analysis.

As for the incident dataset, it only involves the date, time, and address of the terrorist incidents. Furthermore, this set of data as used at the aggregate level to understand the terrorism risk in neighborhoods, and thus, this study did not reveal any particular address to conduct an analysis. Quantitative Content Analysis was used to create a dataset that can be used in a GIS software as RTM requires it. Content analysis is the examination of recorded communications such as social artifacts (e.g. written documents) to identify the patterns and trends in a systematic way (Maxfield & Babbie, 2011). Quantitative content analysis is one of the two content analyses, the other one being qualitative content analysis (Tewksbury, 2009). Riffe et al. (2005) defined quantitative content analysis “as the systematic assignment of communication content to categories according to rules, and the analysis of relationships involving those categories using statistical methods” (p.3)

Through the quantitative content analysis, the addresses of incidents were listed on an excel file, and then, they were geocoded. When they were mapped on a map layer that includes neighborhoods of Istanbul, the crime statistics were obtained at the

neighborhood level. Infrastructure data were also used to obtain the patterns of environment around locations of terrorist incidents. With the help of a literature review and an examination of incident summaries, spatial risk factors of terrorism in Istanbul were explored. During the analysis, the spatial association between the different layers of infrastructure and locations of terrorist incidents were examined. Those layers (e.g. eateries and religious facilities) that were significantly correlated with terrorist incidents were used to create a risk scale. The Risk Terrain Modeling Diagnostics Tool (RTMDx) was used to identify the significant risk factors based on their spatial influence.

In sum, the study sought an answer to the question whether locations of incidents commonly have these places in their close proximities, and whether this spatial association is statistically significant. Those features having significant association with incident locations were determinant in attributing risk values to each neighborhood. Then, the risk values of 60 sample neighborhoods determined through RTM techniques were included to the statistical model as a neighborhood level variable to test if the risk has a predictive power on fear of terrorism. Table 21 (see Appendix A) summarizes the concepts, data collection and measurement.

IV.E. Limitations of The Study

As this study uses secondary data, it has possible downsides. As the survey is composed of closed-ended questions, the standard questions may not have listed respondents' true answer. In addition, the current researcher did not have control in data collection process, and he did not interact with subjects during the survey process.

However, the survey data were collected by a professional and certified research company, and the data collection process may be deemed as reliable.

Inferential statistics were used throughout the study, and inferences were mostly made based on the survey data. There are some threats to validity about the survey data. First of all, bias in selection process is a threat to internal validity. But, the randomization in sampling eliminates selection bias in the collection of the survey data. Furthermore, the utilization of stratified sampling has potential to reduce sampling error, which makes measurement more accurate (Maxfield & Babbie, 2011). Secondly, a combination of multiple items of survey bears a threat to reliability of internal consistency. The concepts such as fear of terrorism and exposure to media included multiple items of the survey. The consistency of results across items was measured through polychoric factor analysis and Cronbach's Alpha to assure internal consistency reliability.

Another limitation results from the nature of the main dependent variable. The fear of terrorism in this study is taken as general. However, its nature needs more probation. The survey didn't include items that asked residents if their fear was chronic, triggered in some situation, and how frequently they feel in these situations.

Furthermore, the use of agency data about incidents may pose some threats because a researcher has less control over the data collection process when relying on agency data (Maxfield & Babby, 2011). Although the investigator has knowledge on how the agency collects data as he has worked in the Counter-Terrorism Department before; he also assumes that agency data may have some flaws. The addresses of the locations with terrorist incidents could have not been recorded accurately. To eliminate this problem, the addresses were checked through a review of incidents on the Internet as the

news about terrorist offenses extensively took place on the news of local and national media agencies.

The spatial analysis part of the study may also be challenged by threats. The infrastructure data were obtained from TNP in 2013, and the study period is between 2008 and 2012. This implies that the environmental features around the locations of terrorist incidents may have undergone changes. There is almost five years of difference between the time of the first incidence and the time of measurement, which may involve some changes in the environment of the streets. However, Caplan and Kennedy (2011) suggested that the infrastructure is very stable over time, and this stability eliminates potential threats to validity.

Since the data used in this study were collected from one city, generalizability may be considered as a potential limitation. On the other hand, given the fact that Istanbul is the most populated city in the country where almost all headquarters of nationwide media (newspaper, radios, and TV channels) are located, findings can be generalizable to other contexts.

In the forthcoming analyses, the study compared terrorism fear to crime fear by using the actual risk of terrorism as one correlate. It was plausible to use the terrorism risk to predict terrorism fear, but the crime fear models should have included a variable related to the incidence of traditional crimes. However, the data on crime incidents in Istanbul were not publicly accessible, and Istanbul Police Department was not willing to provide data for this period of time.

Last but not least, the correlates used in this study were developed through empirical studies in the US, Great Britain, and Canada. They are related to fear of

traditional crimes. However, the context and crime-specific correlates of fear may be different in Turkey than other countries, and in terrorism as a crime specifically, when compared with other forms of crimes.

CHAPTER V: ANALYSES & RESULTS

The data analysis was consisted of three phases. First, all dependent and independent variables were described in respect for their distributions and ranges. Second, a bivariate analysis was conducted to test some of the hypotheses at the individual level and neighborhood level. Third, a multilevel statistical analysis (Hierarchical Linear Model) was used to examine the correlates of fear of terrorism to understand the role of consumption of media coverage at the neighborhood level, controlling for variables that the literature suggested to have an impact on fear of crime. The multilevel models analyzed the relationship between social, and behavioral factors and fear of terrorism.

To test the reliability of the survey data, neighborhood population data was obtained from Turkish Statistical Institute ⁸ and added to the dataset as a new variable. Then, a bivariate correlation was modeled between the number of participants in a neighborhood and the true neighborhood population. The test results indicated that there is a positive correlation between the sample and the actual population ($r=0.40$, $p<0.001$). Another test was conducted to understand the representativeness in gender of the sample to the general population. In the Istanbul Survey, 41% of the sample was male, 49% female. The Data from Turkish Statistical Institute showed that the overall population was 13.710.512. While 6.883.487 (50.2%) were male, 6.827.025 (49.8%) of the population was female. A chi square test was conducted, and the results indicated that the difference in proportions in two groups (survey sample and population) for females was not statistically significant.

⁸ <http://rapory.tuik.gov.tr/16-03-2015-03:30:50-52953850315624379111028880485.html>

V.A. Descriptive Analysis

The descriptive analysis indicated that 3.47 percent of the sample reported the personal or vicarious victimization of terrorist attacks. Sixteen percent of the respondents reported that they were victimized by at least one of 12 different types of crime mentioned in the questionnaire. Forty one percent of the sample was male and 59 percent female. Seventy percent of respondents were born in Istanbul, 79 percent were married. Table 10 presents descriptive statistics for dependent and independent variables. With respect to the neighborhood level variables, terrorism risk shows a large variation with a mean 107.03 falling between 1 to 481.36. Socio economic status of neighborhoods range from 36.7 to 213.3. Neighborhoods also differ by the portion of residents who live in the same area over 60 months. There are residentially instable neighborhoods with 38.3% of stable households at the lower bound and very stable areas with 96.6% residents at the upper. The range of heterogeneity was also very large in percentage. The least heterogeneous neighborhood(s) had around 3.3% residents born outside the city, and very homogenous one (s) with 96.6 % of its residents were from Istanbul.

Table 10. Descriptive Statistics for Dependent and Independent Variables

Descriptive Statistics				
	Mean	Std. Dev.	Min.	Max.
Dependent Variables (N=1874)				
Fear of Terrorism	3.21	1.06	1.14	5.71
Fear of Crime	2.64	0.8	1.14	5.69
Independent Variables				
Individual Level Variables (N=1874)				
Personal Exposure to Media Coverage	2.66	0.94	0.46	5.46
Victimization of Crime (Y=299, N=1575)	0.16	0.37	0	1
Victimization of Terrorism (Y=65, N=1809)	0.03	0.18	0	1
Gender (Male=1) (M=777, F=1097)	0.41	0.49	0	1
Marital Status (Married=1) (M=1,479, U=395)	0.79	0.41	0	1
Age	42.55	15.37	18	90
Neighborhood Level Variables (N=60)				
Terrorism Risk	107.03	106.41	1	481.36
Perceived Disorder	2.91	0.54	2.55	4.72
Collective Efficacy	3.43	0.36	2.55	4.72
Formal Control	4.24	0.35	3.46	5.13
Police Effectiveness	3.79	0.36	2.69	4.5
Socio-Economic Status	114.94	51.19	36.66	213.33
Residential Stability	70.53	12.18	38.33	96.66
Social Heterogeneity	70.33	17.39	3.33	96.66
Subcultural Diversity	2.64	0.55	1.14	3.91

*Descriptive results of 1874 randomly selected respondents from 60 different neighborhoods in Istanbul.

V.B. Bivariate Analysis

Bivariate correlation results for crime fear and terrorism fear are presented in Table 11. According to bivariate correlation results, only one relationship that was hypothesized in the previous chapter were supported (H_{15}). The results indicated that there was a statistically significant positive correlation between fear of terrorism and personal exposure to media coverage of terrorist attacks ($r=0.19$, $p<0.05$). As theoretically expected, individuals who consumed more media coverage of terrorist attacks tend to have more fear of terrorism than the individuals who consumed less coverage.

Table 11. Bivariate Correlation Between Dependent and Independent Variables

Bivariate Analysis		
Independent Variables	Dependent Variables	
Individual Level Variables (N=1874)	Fear of Terrorism	Fear of Crime
Personal Exposure to Media Coverage	0.19*	0.04
Victimization of Crime (Y=299, N=1575)	0.02	0.03
Victimization of Terrorism (Y=65, N=1809)	0.02	0.05*
Gender (Male=1) (M=777, F=1097)	-0.02	-0.04
Marital Status (Married=1) (M=1,479, U=395)	-0.009	-0.04
Age	-0.02	-0.12
Neighborhood Level Variables (N=60)		
Terrorism Risk	0.17	0.21
Perceived Disorder	0.12	0.46*
Collective Efficacy	-0.12	0.28*
Formal Control	-0.14	0.02
Police Effectiveness	-0.03	-0.18
Socio-Economic Status	0.14	0.19
Residential Stability	-0.09	-0.01
Social Heterogeneity	0.04	-0.20
Subcultural Diversity	0.20	0.29*

* $p<0.05$

Other independent variables had no significant correlations with fear of terrorism. More specifically, fear of terrorism did not have a statistically significant association with previous victimization ($r=0.02$, $p=0.40$), victimization of terrorism ($r=0.02$, $p=0.22$), gender ($r=-0.02$, $p=0.87$), marital status ($r=-0.009$, $p=0.67$), age ($r=-0.02$, $p=0.34$), terrorism risk ($r=0.17$, $p=0.42$), collective efficacy ($r=-0.12$, $p=0.37$), perceived disorder ($r=0.12$, $p=0.37$), formal control ($r=-0.14$, $p=0.30$), police effectiveness in counter terrorism ($r=-0.03$, $p=0.21$), SES ($r=0.14$, $p=0.23$), residential stability ($r=-0.09$, $p=0.15$), social heterogeneity ($r=0.04$, $p=0.77$), and subcultural diversity ($r=0.20$, $p=0.12$). Though these variables were not statistically correlated with terrorism fear, the directions of the relationships were consistent with the theoretical assumption on crime fear.

In respect for fear of crime, previous victimization of terrorism appeared to be associated with high level of crime fear among residents ($r=0.05$, $p<0.05$), and that gives partial support to the victimization hypothesis. In other words, individuals with previous victimization of terrorism (direct or indirect) have higher level of fear of crime, though terrorism victimization was not correlated with terrorism fear.

The significant association was observed between the perceived neighborhood disorder and fear of crime ($r=0.46$, $p<0.05$). Respondents who are living neighborhoods with more physical and social disorder reported more fear of crime, which supports the disorder hypothesis.

Collective efficacy was also significantly correlated with fear of crime ($r=0.46$, $p<0.05$). Residents who were located in neighborhoods where neighbors have mutual trust and social cohesion reported higher level of fear on the related item sales. This correlation is against the theoretical assumption that neighbors with high collective

efficacy have less fear of crime. Although the terrorism fear was not statistically significantly correlated with collective efficacy, the direction of relationship -unlike with the crime fear- was in the expected direction.

Another significant correlation was observed between fear of crime and subcultural diversity ($r=0.29$, $p<0.05$). Consistent with the theoretical assumptions, residents of the neighborhoods that were more diverse in their subcultural composition reported more fear of terrorism on average. Other variables were not statistically significantly correlated with fear of crime. Exposure to the media coverage related to terrorism was not correlated to crime fear. In addition, the directions were different in the associations of formal control and social heterogeneity with two fear types though they were not significantly correlated. The bivariate analyses results provided a preliminary idea about the difference between the natures of two different types of fear. The next sections aimed to have more knowledge about this relationship.

V.C. Multivariate Analysis

V.C.1. Sensitivity Analysis

The assumption for HLM is that the dependent variable at the level one is continuous and normally distributed based on a model with level one variables (Raudenbush & Bryke, 2002). Before beginning the multilevel modeling, the sensitivity analyses were conducted to understand whether the dependent variables and residuals were normally distributed, linearity was an issue between variables, and multicollinearity was a problem for variables.

V.C.1.a. Fear of Terrorism

An examination of the dependent variable showed there was no missing value in the dataset. After the regression of fear of terrorism on individual level variables, the linearity between dependent variable and independent variables was tested using one-at-a-time regression. Then an augmented component plus residual was plotted to see the linearity. Neither a quadratic relation nor a polynomial pattern was observed between terrorism fear and other level 1 independent variables (exposure to media and age) that were not dichotomous.

Test for Normality

The distribution of standardized fear of terrorism scores among 1874 residents from 60 neighborhoods of Istanbul appeared to be close to a normal distribution (see Figure 11 in Appendix B). The mean fear of terrorism score at the neighborhood level in this sample is 3.21 (median = 3.17), with a standard deviation of .76 and a range of 1.51 to 5.04 (interquartile range = 2.78, 3.53). The histogram for residuals from the OLS regression model with level 1 variables illustrated that the distribution of the dependent variable is acceptably normal. Furthermore, a standardized normal probability plot (pnorm) also supported the normality for residuals (see Figure 14 in Appendix B).

Test for Homoscedasticity

The variance of the residuals is assumed to be normal in the regression model. The variance should be constant for residuals so that they cannot vary when the values of independent variables change. In other words, it is assumed “the variation of the dependent variable around the regression surface is everywhere the same” (Fox, 1991; p. 49). To test this assumption in the dataset, a Breusch-Pagan test was conducted by using

fitted values of fear of terrorism as a variable, and the null hypothesis that “there was constant variance of residuals” was tested. The test results indicated that there was no constant variance of residuals. ($\chi^2 = 4.97$, $df=1$, $p<0.05$). The conclusion was that residuals were heteroskedasticity, as a result of which the standard errors may not be correctly estimated, and the coefficients and significance may be misguided (see also Figure 15 residuals vs. predicted values plot in Appendix B). The solution is to use robust standard errors to adjust the model for heteroskedasticity (Fox, 1991).

V.C.1.b. Fear of Crime

The crime fear and age relation had a linear relationship. The linearity between crime fear and exposure to media appeared to be in a somewhat quadratic relation. A further test using the ladder command resulted in the transformation of media exposure in square root ($\chi^2=40.72$, $df=2$, $p=0.000$). When the variable was transformed its square root metric, the relation did not change in a significant way. Therefore, the variable exposure to the media coverage was held in its original metrics (see Figure 16 in Appendix B).

In the test for normality, the distribution of residuals in the OLS model with level 1 variables appeared to be normal, and the standardized normal probability plot lends support to the normal distribution (see Figure 19 in Appendix B). To test the homoscedasticity, a Breusch-Pagan test was conducted by using fitted values of fear of crime as a variable, and the test results indicated that the residuals were heteroskedastic. ($\chi^2 = 5.03$, $df=1$, $p<0.05$). Therefore, the errors were robustified for the regression models

by using robust standard error command in Stata (see also Figure 18 residuals vs. predicted values plot in Appendix B).

Multicollinearity Test

In addition, the variance inflation factors (VIF) tolerance scores ranged between (1.00) and (1.08), and the average VIF value was (1.03), which indicates there was no multicollinearity problem. Table 12 and 13 illustrate analysis results.

Table 12. VIF Scores for fear of terrorism and crime at the individual level

Variable	VIF	1/VIF
Age	1.08	0.923
Marital Status	1.07	0.935
Gender	1.02	0.976
Victim of Crime	1.01	0.994
Victim of Terror	1.00	0.998
Media Exposure	1.00	0.998
Mean VIF	1.03	

Table 13. VIF Scores for fear of terrorism and crime at the Neighborhood level

Variable	VIF	1/VIF
Formal Control	2.91	0.343
Police Effectiveness	2.36	0.423
Social Heterogeneity	2.02	0.495
SES	1.77	0.566
Disorder	1.52	0.656
Residential Stability	1.40	0.713
Collective Efficacy	1.38	0.723
Subcultural Diversity	1.36	0.734
Terrorism Risk	1.31	0.766
Mean VIF	1.78	

V.D. Hierarchical Linear Modeling (HLM)

The current study used the multilevel modeling to determine the explanatory power of all factors of interest while controlling for neighborhood level contextual effects. Hierarchical modeling has been suggested to be a standard method to estimate the effect of community-level (e.g. neighborhood or city) factors on individual outcomes, and especially when the data include substantial amount of clustering within communities (Bryk & Raudenbush, 2002). One the main assumptions of a regression analysis is the independence of observations across units of analysis. However, individual-level outcome varies across geographic areas such as neighborhoods, and such a dependence on geography needs to be formally adjusted for the non-independence of observations within the same neighborhood. Ignoring this non-independence is to cause a bias in estimated standard errors, and the statistical thus substantive results would be misleading.

Multilevel analysis provides improved parameter estimates, corrected standard errors, and more accurate statistical significance tests (Hox, 2002; Johnson, 2010; Raudenbush & Bryk, 2002). For the current study, observations within neighborhoods may share unaccounted-for similarities. For instance, participants from a socially disorganized neighborhood may have systematically reported higher level of fear. In statistical terms, the observations from disorganized clusters may systematically fall above the regression line and below it for the well-organized ones, implying the correlation between residual errors. As one of the main assumptions of the regression models is the independence of residual errors, such a cluster effect may violate this core assumption, as a result of which the regression model underestimates standard errors, and impacts statistical significance test in the form of type I inferential error – null hypothesis

falsely rejected though it is true in the population (Hox, 2002; Johnson, 2010; Raudenbush & Bryk, 2002). In brief, ignoring the clustering of individuals within neighborhood results in treating the subsamples as equivalent, ascribing an inflated statistical power to the model, and underestimating standard errors in the ordinary regression model.

Drawing on theoretical propositions, the current study assumes contextual effects of independent variables on the dependent variables. In other words, neighborhood characteristics impact individual outcomes. For example, Social Disorganization Theory purports that crime and the related fear are to be observed more in socially disorganized neighborhoods characterized by low SES, social heterogeneity, and residential mobility, even when the population changes in time (Bursick & Grasmik, 1993). Thus, it is plausible to assume that residents who live in a poor neighborhood may have more fear of crime, irrespective of how poor they are.

The equation for the basic multilevel model is in fact the combination of the ordinary regression model and the additional group level error term (u_j) that models variation among neighborhood means in the data. For example, the level 2 error term enables the mean fear of terrorism to vary by neighborhood, and captures the important neighborhood level differences in average fear of terrorism. In this case, the standard errors and statistical significance are adjusted for the nesting of individuals within aggregate neighborhood clusters.

In general, two models have been used in hierarchical linear modeling, which are random intercept model and random coefficient models. The random intercept model is interested in capturing the impact of the cluster on the individual outcomes. In other

words, it probes the heterogeneity in intercepts. Different clusters may have different relationships between dependent and independent variables. For example, the relationship between fear of terrorism and other variables might be stronger in some neighborhoods than they are in other ones. Such approach helps the researcher understand the variation in fear of terrorism resulting from individual differences in the sample and the contextual or neighborhood differences.

The random coefficient model has been used where it is sensible to assume the effect of independent variables that is beta coefficient to vary on the value of the dependent variable in different clusters. That is, it assumes level 1 beta coefficients to randomly vary across clusters, thus the random effect of a neighborhood on the slope of particular predictor must be included in the equation along with randomly varying level 1 intercepts (Raudenbush & Bryk, 2002). In other words, the estimation of the outcome is controlled by the random effect of a neighborhood on the slope of a level one variable, which helps to analyze the variability in both regression coefficients (alpha and beta).

The decision making for the selection of one of these models should depend on both the previous scientific knowledge and an empirical observation in the data (Johnson, 2010). For the current study, an empirical test was conducted to compare the random intercept model to the random coefficient model, along with the theoretical sense that guides the decision to use random intercept model. The test included three steps. First, a random-intercept model was tapped into STATA in which only the one-way variance component is estimated. Second, a random-coefficient model with level one variables was estimated in which the two-way variance components are estimated, and in which zero correlation is assumed between the two effects. In the third step, a likelihood ratio

test assessed whether all random-effects parameters of the mixed model are simultaneously zero. The likelihood ratio test results supported that random intercept model was favorable to the random coefficient model, and the assumption that random coefficient model is nested in random intercept model was accepted ($\chi^2 = -1298.61$, $df=7$, $p = 1.000$).

V.D.1. Centering

The level one variables were centered around their respective neighborhood means as the current study is interested in probing how two individuals differing in their exposure to the media and other level one variables in the same neighborhood also differ in their level of fear of crime or terrorism.

Various scholars have placed an emphasis on the transformation of variables for each level of analysis as the interpretability of the variables at different levels are important to a multilevel analysis (Enders & Tofighi, 2007; Paccagnella, 2006; Raudenbush & Bryk, 2002). In the current study, the neighborhoods have the varying sample sizes that range from 32 to 43. Two types of transformation were used for the variables at the two different levels. Both group mean and grand mean centering were used to have intercepts more interpretable and reduce collinearity, and the estimates of variance may also benefit from centering due to the heteroskedasticity in error variance related to the value of a given independent variable (Hox, 2002). However, the relevant literature suggested that both types of centering have pros and cons. While group mean centering falls short in capturing variability between clusters, grand mean centering loses information about within cluster variation (Enders & Tofighi, 2007). Therefore, the strategy should be based on the research question. “When an unbiased estimate of B_w

[i.e., the Level 1 relationship] is desired, group mean centering will produce it” (Raudenbush & Bryk, 2002; p. 139) because group mean centering eliminates all between-cluster variation from the predictor and “yields a “pure” estimate of the pooled within-cluster (i.e., Level 1) regression coefficient” (Enders & Tofighi, 2007; p. 128). The current study is concerned with level 1 variation for the relationship between individual level variables such as exposure to the media or gender. In this case, the correlation of the individual scores with level 2 variables is not of primary interest. That’s why, individual level variables were centered around their respective neighborhood means, capturing differences among participants in the same neighborhoods, pooled across neighborhoods. On the other hand, “The CGM [Centering around Grand Mean] estimate of the intercept variance quantifies variation in the adjusted means (i.e., variation in the outcome means, having controlled for the Level 1 predictor)” (Enders & Tofighi, 2007; p. 127). Corresponding to this argument, another research question in the current study was about the impact of the terrorism risk on fear of terrorism, for which the mean difference among neighborhoods are of primary interest for a significant portion of the total score variation in the dependent variable. Therefore, the level 2 (neighborhood) variables were centered around the grand mean by subtracting the mean of each neighborhood from the overall mean in the dataset. Doing so enables the subtracted mean to be the new zero point, the positive values to represent scores above the mean, and negative values to represent scores below the mean. In addition to making a variable with a zero point that is not meaningful, another advantage is that the model intercept will be the expected fear of terrorism not for the reference group in a dummy variable but for the average of a given variable.

V.D.2. Preliminary Analysis For Multilevel Modeling

It is important to determine how much variation in the dependent variables were accounted by both level-one (individual) and level-two (neighborhood) variables across neighborhoods. Before the evaluation of the influences of level-one (individual) and level-two (neighborhood) variables on dependent variables, it is necessary to determine whether the dependent variables vary across 60 neighborhoods in the sample.

A preliminary analysis in the dataset shows that there is a neighborhood level variability in residents' fear of terrorism. When the individual responses to the survey are aggregated up their neighborhoods, the mean fear of terrorism for each of 60 neighborhoods varies between (.88) and (4.33). It was useful to inspect a scatterplot of the neighborhood mean fear of terrorism scores against the neighborhood identifiers, just to get some preliminary idea of the degree of variability in the fear of terrorism distributions.

Figure 6- Neighborhood level heterogeneity in mean fear of terror; resident scores. (blue circles) and neighborhood means (red X's)

Figure 7- Neighborhood level heterogeneity in mean fear of terror; Neighborhood means (blue lines) and overall mean (red line)

There are 60 neighborhoods represented on the x-axis in the scatter plot on Figure 5, with the distribution of fear of terrorism responses within each neighborhood displayed vertically. The red X's identify the mean for each neighborhood, and there is a great deal of variability in the means. Each of these means is a priori valid as an estimate of population mean fear of terrorism (allowing for differences in sample sizes). Besides the fact that residents in the same neighborhood will tend to share unobserved similarities, there is clear indication from this scatter plot that there is substantial heterogeneity across neighborhoods in overall fear of terrorism.

The spaghetti plot on Figure 6 indicates that there is heterogeneity across neighborhoods in the relationship between the two variables. Thus a multilevel model allows to estimate this relationship in a more efficient way. Rather than estimating 60 regression models, the multilevel model is capable of quantifying a possible heterogeneity. In addition, such a model is helpful to differentially weight the estimates by cluster size because larger clusters should exert more influence on the model coefficients.

Similar to terrorism fear, fear of crime varied across 60 neighborhoods, and the scatter plot on Figure 7 and the spaghetti plot on Figure 8 illustrate this variation.

Figure 8- Neighborhood level heterogeneity in mean fear of crime; resident scores (blue circles) and neighborhood means (red X's)

Figure 7- Neighborhood level heterogeneity in mean fear of crime; neighborhood means (blue lines) and overall mean (red line)

V.D.3. Multilevel Model Building

The current study was mainly interested in the relationship between the level of exposure to the media coverage about terrorism and fear of terrorism and assumed that each neighborhood comprises a different sample of residents that share unobserved similarities. To have more insight, three main steps were taken in the analysis. First, the neighborhood level variation was empirically evaluated to determine to continue multilevel analysis. Second, different models from the fear of crime literature were tested separately with the current dataset to test some of hypotheses. Third, all known correlates of the fear of crime were simultaneously modeled to compare crime fear and terrorism fear and to understand the influence of these variables on fear. Throughout this study, the following notation was employed for the consistency:

i	= 1,...,N indexes subjects
j	= 1,...,K indexes clusters
Y_{ij}	= Response variable (fear measured for resident i in neighborhood j)
X_{ij}	= Level-1 regressor (e.g. exposure to media measured for resident i in neighborhood j)
W_j	= Level-2 regressor (e.g. terrorism risk in neighborhood j)
γ_{00}	= intercept (Fear for resident i in neighborhood j with the values of all other variables being equal 0)
γ_{01}	= slope for level-1 regressor (coefficient associated with a level 1 variable for the j th neighborhood)
r_{ij}	=Residual (random error associated with resident i in neighborhood j)
γ_{10}	= slope for level-2 regressor (coefficient associated with terrorism risk for the j th neighborhood)
u_{oj}	= Random effect for intercept
τ_{00}	= Between-neighborhood variance estimated by the u_{oj} (Sigma u)
σ^2	= Within-neighborhood variance estimated by the r_{ij} (Sigma e)
ρ	= Reliability of the mean of cluster
ICC	= Intra class correlation

The model building process began with the following intercept-only model (also named as unconditional or null model):

$$\text{Level 1} \quad Y_{ij} = \beta_{0j} + r_{ij} \quad (1)$$

$$\text{Level 2} \quad \beta_{0j} = \gamma_{00} + u_{oj} \quad (2)$$

Where Y_{ij} is fear of terrorism for individual i in neighborhood j , estimated by overall intercept β_{0j} plus an individual level residual termed as r_{ij} . At the level 2 of the model, intercept β_0 is the product of the level 2 intercept γ_{00} and the neighborhood level residual termed as u_{0j} . The individual variance is captured by r_{ij} while u_{0j} captures *the* neighborhood variance in fear of terrorism. Thus the null model is as follows:

$$\text{FearofTerrorism}_{ij} = \gamma_{00} + u_{0j} + r_{ij} \quad (3)$$

The intercept-only model was specified through the generalized least squares estimator, the "xtreg" command in Stata 13.0 enables to do it. Table 14 illustrates the results from the unconditional model examining the fear of terrorism for a random sample of Istanbul residents nested within 60 randomly selected neighborhoods in Istanbul. There are two parts to the results. The “fixed effects” part reports the unstandardized regression coefficients. The “random effects” part reports the variance component for the model. The overall intercept is 3.19 indicating the average fear of terrorism in the sample.

Table 14. Unconditional HLM Model

	<u>Terrorism Fear</u>		<u>Crime Fear</u>	
<u>Fixed Effects</u>	<u>Coefficient</u>	<u>S.E.</u>	<u>Coefficient</u>	<u>S.E.</u>
Intercept (γ_{00})	3.19*	0.10	2.63*	0.06
<u>Random Effects</u>				
Level 2: Between Neighborhoods (N=60)				
τ_{00} (u_{0j})	0,76 (0.58)		0.49 (0.49)	
F/df/p	33.22/59,1814/0.000		15.96/59,1814/0.000	
Level 1: Within Neighborhoods (N=1874)				
σ^2 (r_{ij})	0.74 (0.56)		0.70 (0.24)	
Intraclass Correlation	0.51		0.32	
Reliability, (ρ_{0ij})	0.96		0.94	

*P < 0.001

The results indicated that the nested structure of the data violates the ordinary regression assumption of independent errors. More specifically, test results indicated that there is significant cross-neighborhood variability in means ($F = 33.22$, $DF = 59, 1814$, $p < .001$). Intraclass correlation coefficient (I.C.C) illustrates proportion of the total variance in fear of terrorism that exists between clusters. It indicates that 51% of the variance in the dependent variable or response variable (terrorism fear) exists between neighborhoods, whereas the remaining 49% of the variance in Y_{ij} (terrorism fear) is within neighborhoods. In other words, the neighborhood in the sample significantly differed on fear of terrorism before adding any predictor to the model. However, the difference of between-neighborhood variance from that of the within-neighborhood does not mean that within-neighborhood variation is unimportant (Liska, 1990). Similarly, the results from the null model for crime fear indicated that 32% of the variation in fear of crime results from the differences between neighborhoods.

The neighborhood size in participants ranged from 31 to 43, and the constant indicates the grand mean (weighted by neighborhood size) fear of terrorism score (3.19) that slightly departed from the unweighted sample mean (3.20). The *reliability* of the mean of cluster j , denoted ρ_{0j} , helps to determine how well the true population mean is approximated by each cluster mean. Reliability will be closer to 1.0 when cluster means vary substantially, and when the cluster size is large. The reliability coefficient for each neighborhood is high and the reliability of 0.96 indicates that neighborhood means yield reliable estimate of the population mean of terrorism fear as it is very close to 1.0. That is, residents of the same neighborhoods agreed on how much fear there was in their area. The shrinkage plot of the empirical Bayes linear predictor against the least squares linear predictor confirmed this finding (see Figure 20 in Appendix B). Both fear of terrorism and crime vary significantly across 60 neighborhoods, indicating that a multilevel analysis is appropriate.

To begin with, it is important to explain the estimation strategy through a set of equations. The specification of the models is as follows:

Level 1 (individual level)

$$Y_{ij} = \beta_{0j} + \beta_1 X1_{ij} + \beta_2 X2_{ij} + \dots + \beta_k Xk_{ij} + r_{ij} \quad (4)$$

Where Y_{ij} is fear of terrorism or crime for individual i in neighborhood j is estimated by β_{0j} overall intercept; β_1 is the slope for the individual level independent variable $X1_{ij}$ for individual i in neighborhood j , and an individual level residual is termed as r_{ij} .

Level 2 (neighborhood level)

$$Y_{ij} = \gamma_{00} + \gamma_{10}W1_j + \gamma_{11}W2_j + \dots + \gamma_m Wm_j + u_{oj} \quad (5)$$

At the level 2 of the model, intercept β_0 is the product of the level 2 intercept γ_{00} and the neighborhood level residual termed as u_{oj} .

Combined Multilevel Model

$$Y_{ij} = \gamma_{00} + \gamma_{01}X1_{ij} + \gamma_{02}X2_{ij} + \dots + \gamma_k Xk_{ij} + \gamma_{10}W1_j + \gamma_{11}W2_j + \dots + \gamma_m Wm_j + u_{oj} + r_{ij} \quad (6)$$

In this equation, Y_{ij} is the crime or terrorism fear in i th individual residing in j th neighborhood; Xk_{ij} is the k th independent variable at the individual level for i th individual residing in j th neighborhood, Wm_j is the m th independent variable at the neighborhood level for j th neighborhood. γ_{01} to γ_m are the slope coefficients of individual level variables, and γ_{10} to γ_k are slope coefficients of the neighborhood level variables. u_{oj} is the unexplained proportion of the model resulted from neighborhood level part of the model, and r_{ij} denotes the level one residuals. All multivariate analyses after that point in the current study are specified by using combined multilevel models. To avoid repetitions, the equations of the five different models and the full model were not written in the text.

It is worth remembering here that the neighborhoods may moderate the impact of the individual level correlates of crime. In other words, how an individual-level characteristic shapes the fear of crime is likely to operate differently as a function of the

kind of neighborhood in which the individual is living. For example, the difference in fear of terrorism between men and women may be observed more in neighborhoods with higher social heterogeneity and lower SES. Thus, the individual level correlates of fear of crime may be significant when these contextual effects are lower in some places. But, the individual level variables might be found insignificant in neighborhoods with higher contextual influences.

V.E. Findings

At the second step of the analysis, the 5 different models from the fear of crime literature were tapped into the statistical software separately, which were cultivation, victimization, disorder, subcultural diversity, and community concern models. Table 15 illustrates the results from the cultivation model.

Table 15. Cultivation Model

Fixed Effects	Model 1 Terrorism Fear	Model 2 Crime Fear
Intercept, γ_{00}	3.19***	2.63***
Household Characteristics (N=1874)		
Gender (Male), γ_{01}	0.03 (-0.05)	-0.12** (-0.04)
Age, γ_{02}	-0.0006 (-0.001)	-0.002 (-0.001)
Marital Status (Married), γ_{03}	0.0005 (-0.04)	0.001 (-0.05)
Exposure to Media, γ_{04}	0.28*** (-0.06)	0.05 (-0.06)
Previous Victim (Crime), γ_{05}	0.09*** (-0.10)	0.17*** (-0.05)
Previous Victim (Terrorism), γ_{06}	0.08 (-0.04)	0.08 (-0.08)
Neighborhood Characteristics (N=60)		
Terrorism Risk, γ_{10}	0.001 (-0.001)	0.0008 (-0.001)
SES, γ_{11}	0.001 (-0.002)	0.001 (-0.001)
Random Effects		
Between Neighborhoods, U_{0j}	0.77	0.49
Chi2/df/p	33.11/8/.000	28.08/8/.000
Within Neighborhoods, r_{ij}	0.72	0.7
I.C.C	0.53	0.33
Proportion of Variance		
Level 1, (R^2_1)	0.07	0.02
Level 2, (R^2_2)	0.04	0.06
Total, (R^2_T)	0.05	0.04

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

The cultivation theory argued that the impact of the media on fear of crime may be in either cultivation or resonance form. The resonance effect implies the media has more impact on those with previous victimization of crime as it is likely to resonate earlier experience (Kubrin & Weitzer, 2004). Such a theoretical proposition required to probe whether exposure to the media and previous victimization of crime interact in their influence on the individual fear of terrorism. For this purpose, an interaction test was

conducted in Stata by using the fit interaction regression command. The test results indicated that the two variables do not interact in their impact on fear of terrorism ($F=2.45$, $df=2$, $P=0.1345$).

After the analysis of interaction, the cultivation models for both types of fear were modeled based on the specifications in two major studies in the literature (Chricos et al. 1997; Weitzer & Kubrin, 2004) that used the previous victimization, crime risk, and other individual level characteristics. One of these studies (Weitzer & Kubrin, 2004) argued that fear of crime might be affected by personal experience with crime, crime in the neighborhood, or media. However, these studies employed OLS regression to test their assumptions. Therefore, this first pair of models benefited from the earlier empirical work, but extended the scope of the analysis to control the effect of the neighborhood by comparing two potentially different types of fear.

Model 1 was statistically significant in explaining terrorism with these factors suggested by earlier works ($X^2 = 33.11$, $df=18$, $p<0.001$). The random effects part of the model 1 indicated that about 0.5 % of the total variation in fear of terrorism can be explained by the predictors in the model 1 while this proportion is 0.4% in the model 2 for crime fear. The only significant variable in both models is the previous victimization, though the slope coefficient for victimization was larger in the fear of crime model ($b=0.17$) than it is in terrorism fear ($b=0.09$). As theoretically expected, the exposure to the media coverage on terrorism was significantly associated with the fear of terrorism, and terrorism related media consumption was not significantly correlated to the fear of crime. Those reporting higher consumption of media coverage on terrorism stated higher levels of terrorism fear on average after controlling other individual and neighborhood

level predictors in the model. That may be because people do not perceive terrorism and the traditional crime in the same way. Model 2 was also significant ($X^2 = 28.08$, $df=18$, $p<0.001$). On average, the female residents reported higher levels of fear of crime in the model, holding other variables constant in this model. However, the gender difference did not significantly influence the levels of terrorism fear in the sample.

A comparison between the bivariate and the multivariate relationships revealed that victimization of terrorism was significantly correlated with crime fear in the bivariate analysis, but this variable did not significantly predict crime fear in this multivariate model. On the other hand, the previous victimization of crime variable appeared as a significant predictor in both multivariate models, though it was not significantly correlated to neither of the fear types in the bivariate test. Similarly, gender was not correlated with crime fear in bivariate analysis, but it is now a significant predictor of the fear of crime. The next model examined the relationship between the previous victimization and fear arising from crime or terrorism.

Table 16. Victimization Model

Fixed Effects	Model 1 Terrorism Fear	Model 2 Crime Fear
Intercept, γ_{00}	3.19***	2.63***
Household Characteristics (N=1874)		
Gender (Male), γ_{01}	0.02 (-0.05)	-0.12** (-0.04)
Age, γ_{02}	-0.001 (-0.001)	-0.002 (-0.001)
Marital Status (Married), γ_{03}	0.02 (-0.04)	0.005 (-0.05)
Previous Victim (Crime), γ_{04}	0.11* (-0.04)	0.17*** (-0.05)
Previous Victim (Terrorism), γ_{05}	0.06 (-0.10)	----
Neighborhood Characteristics (N=60)		
Terrorism Risk, γ_{10}	0.001 (-0.001)	0.0008 (-0.001)
SES, γ_{11}	0.001 (-0.002)	0.001 (-0.001)
Random Effects	Terrorism Fear	Crime Fear
Between Neighborhoods, U_{0j}	0.75	0.49
Chi2/df/p	9.25/7/.000	26.55/6/.000
Within Neighborhoods, r_{ij}	0.75	0.7
I.C.C	0.51	0.33
Proportion of Variance		
Level 1, (R^2_1)	0.003	0.02
Level 2, (R^2_2)	0.04	0.06
Total, (R^2_T)	0.02	0.03

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Table 16 presents the multilevel model of both fear of terrorism and fear of crime. Similar models have been used in the literature to test the influence of victimization on fear (Covington & Taylor, 1991; Katz et al. 2003). The basic assumption was that the experience of individuals with crime might increase their levels of fear. Therefore, the models included direct, indirect, and neighborhood experiences with crime of interest as well as the experience with other crimes. In Model 1 for terrorism fear, the variance-explained statistics are .003 within neighborhoods and .04 between neighborhoods. The

total proportion of variance means that the predictors explain about 0.2 % of the total variation in fear of terrorism. The results lend support to the importance of previous victimization of traditional crime in predicting fear of terrorism among residents of Istanbul. On average, those who were previously victimized also reported higher levels of fear of terrorism, controlling for other level one and level two variables. In Model 2, fear of crime, on the other hand, was statistically significantly higher among female participants, and respondents with previous victimization of crime reported higher levels of crime fear. In the crime fear model, the predictors explained 0.3% of the variation in fear of crime. In both victimization models, it appeared that previous crime victimization plays an important role. This finding is consistent with the earlier studies on crime fear, and turned out to be applicable to these residents of Istanbul not only for fear of crime but also for fear of terrorism. The terrorism victimization was not statistically significant in the model, and this may be the result of a very small size of variation in the victimization of terrorism as only 3.46% of the participants stated they had direct or indirect – themselves or someone they know- experience of terrorism. However, gender was not significantly associated with fear of terrorism, which is not consistent with the crime fear literature. The next analysis examined the fear and disorder relationship.

Table 17. Disorder Model

Fixed Effects	Model 1 Terrorism Fear	Model 2 Crime Fear
Intercept, γ_{00}	3.19***	2.63***
Household Characteristics (N=1874)		
Gender (Male), γ_{01}	0.02 (-0.05)	-0.12** (-0.04)
Age, γ_{02}	-0.001 (-0.001)	-0.002 (-0.001)
Marital Status (Married), γ_{03}	0.02 (-0.04)	0.006 (-0.05)
Neighborhood Characteristics (N=60)		
Terrorism Risk, γ_{10}	0.0009 (-0.001)	0.0004 (-0.001)
SES, γ_{11}	0.002 (-0.002)	0.002 (-0.001)
Perceived Disorder, γ_{12}	0.09 (-0.11)	0.45*** (0.14)
Random Effects	Terrorism Fear	Crime Fear
Between Neighborhoods, U_{0j}	0.76	0.43
Chi2/df/p ^a	2.19/6/N.S.	24.06/6/.000
Within Neighborhoods, r_{ij}	0.75	0.70
I.C.C	0.51	0.28
Proportion of Variance		
Level 1, (R^2_1)	0.0005	0.01
Level 2, (R^2_2)	0.05	0.28
Total, (R^2_T)	0.03	0.10

a: Model Chi² p value not significant

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Table 17 illustrates the results from the multilevel analysis that mainly analyzed the relationship between the perceived disorder and fear. This analysis aimed at the examination of separate effects of perceived disorder from other neighborhood characteristics such as collective efficacy because there is a debate in the literature on their influences on crime and related fear (Sampson et al. 1999). Thus, the disorder models base the theoretical specification of the model on the previous studies (Perkins & Taylor, 2002). In the random effects part of the model 1, the variance component for the fear of terrorism was not statistically significant ($X^2 = 2.19$, $df=6$, $n.s.$). The model 2 was

statistically significant in explaining variation in crime fear in the sample with these variables ($X^2 = 24.06$, $df=6$, $P<0.001$). The individual's gender (being female) was significantly associated with crime fear ($b=-0.12$, $z=-1.52$, $p<0.01$). There was a positive significant effect of the neighborhood level perceived disorder on neighborhood mean fear of crime ($b=0.45$, $z=3.19$, $p<0.001$). The predictors explained 10% of the variation in fear of crime. The next model tested the subcultural diversity hypothesis.

Table 18. Subcultural Diversity Model

Fixed Effects	Model 1 Terrorism Fear	Model 2 Crime Fear
Intercept, γ_{00}	3.20***	2.63***
Household Characteristics (N=1874)		
Gender (Male), γ_{01}	0.02 (-0.05)	-0.12** (-0.04)
Age, γ_{02}	-0.001 (-0.001)	-0.002 (-0.001)
Marital Status (Married), γ_{03}	0.02 (-0.04)	0.006 (-0.05)
Neighborhood Characteristics (N=60)		
Terrorism Risk, γ_{10}	0.001 (-0.001)	0.0008 (-0.001)
SES, γ_{11}	0.003 (-0.002)	0.0008 (-0.001)
Residential Stability, γ_{12}	0.0003 (-0.004)	-0.0003 (-0.002)
Social Heterogeneity, γ_{13}	0.008 (-0.008)	0.005 (-0.006)
Subcultural Diversity, γ_{14}	0.30 (-0.18)	0.30** (-0.12)
Random Effects		
Between Neighborhoods, U_{0j}	0.76	0.47
Chi2/df/p ^a	7.93/8/N.S.	20.75/8/.008
Within Neighborhoods, r_{ij}	0.75	0.7
I.C.C	0.51	0.28
Proportion of Variance		
Level 1, (R^2_1)	0.0005	0.009
Level 2, (R^2_2)	0.11	0.18
Total, (R^2_T)	0.05	0.07

a: Model Chi² p value not significant

Robust standard errors in parentheses

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

Table 18 presents the results of the multilevel analysis measuring the relationship between living in a socially diverse neighborhood and fear. Earlier research used similar variables for the modeling of the effect of the subcultural diversity on fear of crime (Kennedy & Silverman, 1984; Lane & Meeker, 2000). The results in the random effects part indicated that Model 1 was not significant in explaining the variation in fear of terrorism ($X^2 = 7.93$, $df=8$, *n.s.*). In the model 2, the predictors significantly explained 0.7% of the variation in fear of crime ($X^2 = 20.75$, $df=8$, $p<0.01$). The gender remained as a significant predictor of fear of crime. The neighborhood level subcultural diversity was statistically significantly associated with the neighborhood mean fear of crime. The coefficient ($b=0.30$, $z=2.54$, $p<0.01$) indicates that individuals who were nested in two different neighborhoods that differed by one unit on the subcultural diversity scores, differed in their mean fear of crime by 0.30 on average after controlling for other variables.

Table 19. Community Concern Model

Fixed Effects	Model 1 Terrorism Fear	Model 2 Crime Fear
Intercept, γ_{00}	3.19***	2.63***
Household Characteristics (N=1874)		
Gender (Male), γ_{01}	0.19 (0.05)	-0.12** (0.04)
Age, γ_{02}	-0.001 (0.001)	-0.002 (0.001)
Marital Status (Married), γ_{03}	0.02 (0.04)	0.006 (0.05)
Neighborhood Characteristics (N=60)		
Terrorism Risk, γ_{10}	0.001 (0.0009)	0.001 (0.0007)
SES, γ_{11}	0.002 (0.0009)	0.001 (0.001)
Collective Efficacy, γ_{12}	-0.02 (0.37)	0.48* (0.22)
Police Effectiveness, γ_{13}	0.45 (0.35)	-0.16 (0.21)
Formal Control, γ_{14}	-0.77 (0.45)	0.05 (0.32)
Random Effects	Terrorism Fear	Crime Fear
Between Neighborhoods, U_{0j}	0.76	0.46
Chi2/df/p ^a	5.20/8/N.S.	29.67/8/.000
Within Neighborhoods, r_{ij}	0.75	0.70
I.C.C	0.50	0.30
Proportion of Variance		
Level 1, (R^2_1)	0.0005	0.01
Level 2, (R^2_2)	0.10	0.20
Total, (R^2_t)	0.05	0.07

a: Model Chi² p value not significant

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Table 19 illustrates the results from the multilevel analysis that mainly analyzed the relationship between formal/informal control in the different neighborhoods and the fear. One determinant of the community concern is the police effectiveness. The survey used in this study had two separate parts to take the perceptions of participants on the effectiveness of the police. One was the effectiveness of the police in preventing crime in

general, and the other one the effectiveness in countering terrorism. Therefore, two separate variables were factored using the relevant survey items, and named as police effectiveness in counter terrorism and police effectiveness in general. However, the variable was not included in the models because the covariance matrix with the correlation coefficients indicated that the police effectiveness in general and in counter terrorism were highly correlated ($r=-0.75$), though the variance inflation factor (VIF) analysis did not reveal this relationship clearly. Therefore, the remaining analyses henceforth used the perceived effectiveness of the police at the neighborhood level based on the type of the fear. That is, the models of fear of crime included the police effectiveness in general, while models for terrorism used the effectiveness in countering terrorism⁹.

In the random effects part of the terrorism fear model, the variance component for the fear of terrorism was not statistically significant ($X^2 = 3.14$, $df=8$, *n.s.*). In the crime fear model, the random effects part of the model indicated that 0.7% of the variation in the fear was explained by these predictors ($X^2 = 29.67$, $df=8$, $p<0.001$). In the fixed effects part, the individual's gender (being female) was significantly associated with crime fear ($b=-0.12$, $z=-2.80$, $p<0.01$). There was also a positive significant effect of the neighborhood level collective efficacy on neighborhood mean fear of crime ($b=0.48$, $z=2.17$, $p<0.05$). At the third step of the analysis, the predictors from all 5 models were specified in 6 models to understand the relationship between the dependent and independent variables.

⁹ Different models were specified using the two effectiveness variables alternatively. That is, separate models of crime fear were specified with the police effectiveness in general or in counter terrorism, and the same was applied to the terrorism fear. As the significance of the models and coefficients did not change, they were not reported in the text.

Table 20. Full HLM Models For Both Types of Fear

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Fixed Effects	Terror Fear	Crime Fear	Terror ear	Crime Fear	Terror Fear	Crime Fear
Intercept, γ_{00}	3.20	2.64	3.20	2.64	3.20	2.64
Household Characteristics (N=1874)						
Gender (Male), γ_{01}	0.03 (-0.05)	-0.12** (0.04)	0.03 (-0.05)	-0.12** (0.04)	0.02 (0.05)	-0.12** (0.04)
Age, γ_{02}	-0.0006 (-0.001)	-0.002 (0.001)	-0.0006 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)
Marital Status, γ_{03} (Married)	0.0005 (-0.04)	0.001 (0.05)	0.001 (0.04)	0.002 (0.05)	0.02 (0.04)	0.004 (0.05)
Exposure to Media, γ_{04}	0.28*** (-0.06)	0.05 (0.05)	0.28*** (0.06)	0.06 (0.05)	---	---
Previous Victim, γ_{05} (Terrorism)	0.08 (-0.10)	0.08 (0.08)	---	---	0.06 (0.11)	0.08 (0.08)
Previous Victim, γ_{06} (Crime)	0.09* (0.04)	0.17*** (0.05)	---	---	0.10* (0.04)	0.17*** (0.05)
Neighborhood Characteristics (N=60)						
Terrorism Risk, γ_{10}	0.001 (-0.001)	0.0008 (0.0005)	0.001 (0.001)	0.0008 (0.0005)	0.001 (0.001)	0.0008 (0.0005)
SES, γ_{11}	0.004 (-0.002)	0.002 (0.001)	0.004 (0.002)	0.002 (0.001)	0.004 (0.002)	0.002 (0.001)
Perceived Disorder, γ_{12}	0.08 (0.22)	0.40*** (0.13)	0.08 (0.22)	0.40** (0.12)	0.07 (0.22)	0.40** (0.13)
Collective Efficacy, γ_{13}	-0.04 (0.40)	0.33 (0.23)	-0.04 (0.40)	0.33 (0.23)	-0.04 (0.40)	0.33 (0.23)
Formal Control, γ_{14}	-0.57 (0.46)	0.33 (0.27)	-0.57 (0.46)	0.33 (0.28)	-0.57 (0.46)	0.33 (0.27)
Residential Stability, γ_{15}	0.001 (0.004)	0.002 (0.002)	0.001 (0.004)	0.002 (0.002)	0.001 (0.004)	0.002 (0.002)
Social Heterogeneity, γ_{16}	0.004 (0.007)	0.001 (0.005)	0.004 (0.007)	0.001 (0.005)	0.004 (0.007)	0.001 (0.005)
Subcultural Diversity, γ_{17}	0.33 (0.19)	0.23** (0.09)	0.33 (0.19)	0.23** (0.09)	0.33 (0.19)	0.23* (0.09)
Police Effectiveness, γ_{18}	0.53 (0.37)	-0.05 (0.20)	0.53 (0.37)	-0.04 (0.20)	0.53 (0.38)	-0.04 (0.20)
Random Effects						
Between Neighborhoods, u_{0i}	0.78	0.42	0.78	0.41	0.77	0.42
Chi2/df/p ^a	50.2/15***	67.9/15***	36.6/13**	58.6/13***	22.8/14/N.S	68.3/14***
Within Neighborhoods, r_{ij}	0.72	0.70	0.72	0.70	0.75	0.70
I.C.C	0.54	0.27	0.54	0.26	0.51	0.26
Proportion of Variance						
Level 1, (R^2_1)	0.07	0.02	0.07	0.01	0.003	0.02
Level 2, (R^2_2)	0.15	0.42	0.15	0.42	0.15	0.42
Total, (R^2_T)	0.10	0.15	0.10	0.15	0.07	0.15

Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05

Table 20 summarizes the comparison of fear of terrorism to fear of crime in 6 different models. In the model 1 and model 2, all relevant variables from the literature were specified for comparison. The model 3 and model 4 did not include variables related to previous victimization in order to unfold the potential influence of these predictors on the relationship between the exposure to the media and the fear. Similarly, the model 5 and model 6 excluded the variable exposure to media to test its impact in the relationship between previous victimization and the fear.

At the individual level, the results indicated that being female was significantly associated with crime fear in all models whereas the difference in gender was not a significant predictor in the models of the terrorism fear. The previous victimization, on the other hand, was the only variable that had a statistically significant impact on both fear types in all models where this variable was used as a predictor. In fear of terrorism models, the variable exposure to media was significantly associated with fear, and the direction of the relationship was positive ($b=0.28$, $z=4.50$, $p<0.001$), indicating that participants who consumed more media coverage on terrorism were also reported, on average, higher levels of fear of terrorism, when controlling for all other level one and level two variables.

At the neighborhood level, the variables perceived disorder and subcultural diversity significantly predicted fear of crime while they were not associated with terrorism fear. The direction of the relationship between fear of crime and these variables was positive. That is, individuals - who were residing in neighborhoods where they perceived physical and social disorder were high ($b=0.40$, $p<0.01$), and they viewed other residents as different from themselves ($b=0.23$, $p<0.01$)- reported higher levels of fear of

crime on average, holding other variables constant. An important difference from the previous models was the influence of the variable collective efficacy that was a significant predictor of crime fear in the community concern model whereas it was no longer significant in the full model. Here, it is worth emphasizing that the directions of the slope coefficients in the models were opposite for terrorism fear (negative) and crime fear (positive).

In the random effects part of the 6 models, these predictors explained 15% of total variance in fear of crime, and 10% in fear of terrorism. That is, the explanatory power of the models for crime fear was higher. The ICC (intraclass correlation) coefficients were almost double in all terrorism fear models in comparison to crime fear models, indicating that more than 50% of the variance in the terrorism fear exists between neighborhoods, whereas about 25% of the variance in crime fear results from difference between neighborhoods. However, the variance components at the level 2 (R^2_2) across 6 models indicated that 15% of the variation in terrorism fear at the neighborhood level can be explained by these models, and this percentage was 42% in crime fear models. Another finding was that when the exposure to the media was excluded from the model 5, the model was no longer significant ($X^2 = 22.85$, $df=14$, *n.s.*). This model excluded the variable exposure to media, though previous victimization was still a significant predictor in the model. That may be a support more to the cultivation thesis than to the resonance hypothesis.

V.F. Discussions

The current study investigated how the media consumption, terrorism risk and other neighborhood conditions influenced individual's fear of terrorism in Istanbul, and how different the terrorism fear was from the crime fear. The predictors and models that were tested drew on criminological literature. In the Chapter 3, the current study set 15 different hypotheses on the relationship between fear of terrorism and other predictors at the individual level and at the neighborhood level. These hypotheses were first tested through an analysis of bivariate correlations. The results only lend support to the H_{15} that was about the influence of the consumption of the media coverage on the terrorism fear.

The analysis continued with an ANOVA test to determine whether fear of terrorism and fear of crime significantly vary across 60 randomly selected neighborhoods of the Istanbul Survey. The results favored the use of a multilevel analysis in this study to probe why residents of the different neighborhoods reported varying levels of fear. Based on the literature review on fear of crime and of terrorism, five separate hierarchical linear models were tested in the first place, followed by the specification of a full model simultaneously including all relevant predictors in the literature. The full models presented a pattern in their variance components. The three models for terrorism fear similarly explained 15% of variation in this fear type at the neighborhood level, while the general fear models explained 42% of the variation at level two. This finding can be interpreted as an indicator that the neighborhood conditions are more powerful in explaining fear of crime than they are in fear of terrorism.

Different from the results of the bivariate correlation analysis was the relationship between previous victimization of crime and the terrorism fear in all models throughout

multivariate analyses, where this variable was tapped into the model as a predictor. It was hypothesized that a previous victimization of a crime increases the likelihood of an individual's fear of terrorism (H₈). This variable was a significant predictor of fear of terrorism in all models that used it. Another important finding was the influence of the exposure to media on fear of terrorism. Across all multilevel models, the consumption of media on the terrorism was significantly associated with the fear of terrorism. In fact the relevant literature suggested that the consumption of the media and crime victimization are in interaction in their influence on fear. According to resonance hypothesis, previous victimization may resonate in the mind of individuals when they are watching media coverage on crime. This theoretical proposition was statistically tested, and the current data did not support this interaction. On the other hand, when the exposure to media was not introduced in a multilevel model, the model lost its significance. Such a result also shed light on the interaction of the previous victimization with exposure to media in predicting the level of fear in individuals. Furthermore, the coefficient of previous victimization became smaller when media was tapped into the same models. But, this effect of victimization on the exposure to media was not observed when victimization was excluded from the models. That is, when the victimization of crime variable was not added in the model, the coefficient and its significance of the exposure to media remained the same (see Model 2 in Table 20).

In all models, the neighborhood level variables were not statistically significantly associated with terrorism fear. In deed, this finding was a support to the hypothesis that heavy exposure to media coverage of terrorism increases the likelihood of an individual's fear of terrorism, and it has the most influence on an individual's fear of terrorism

compared to other factors. This may be due to the difference of terrorism from traditional crime such that terrorism mostly has a national or international aspect, while traditional crime is mostly a local issue (Nellis, 2009). This difference has implications in how fear arising from those two different crime type shape the fear in individuals. As the knowledge of the public about terrorism draws on the information circulating in the media, social and physical cues alone may not be enough to determine individual level fear (Nellis, 2009).

The analyses in this dissertation investigated the association of fear with the actual risk of terrorism resulting from physical environmental features of neighborhoods. The risk of terrorism of each of 60 neighborhoods was calculated through RTM. For this, all factors relevant to terrorism in space were identified by a review in the literature and an analysis in the data. The analysis of data had two steps. Firstly, the content of the incident summaries was analyzed to unfold around which type of addresses the acts were committed by terrorists (e.g. government building or educational facilities). Secondly, an observation was made on the physical features of neighborhoods in Istanbul where terrorist incidents were concentrated during the study period. The physical features with the highest frequencies were added into RTM model to calculate the risk. The overall risk model included the correlates of terrorism in literature, previously targeted physical features, and the features around the locations with highest concentration of the violent terrorism. Thus, the risk analysis was based on the spatial influence of the physical features. The results indicated that only 8 out of 17 possible correlates of violent terrorism were significantly associated. For the risk factors that were operationalized by proximity, it was hypothesized that the distance of three block (660 meters- about a 15

minute walking distance) from a facility poses the greater risk of terrorism because victims are often targeted when arriving at or leaving the establishment. The results indicated that the terrorism risk is higher within a distance of 2 blocks (440 m.) from bakeries, religious facilities, and NGOs. The distance for terrorism risk is 3 block (660 m) for franchises and, office blocks. For those operationalized based on density, it was hypothesized "high concentrations of particular physical features increase the risk of those dense places having terrorist incidents". The results indicated that a perimeter of 660 m. around places with high concentration of bars/clubs is riskier, and this perimeter was 220 m. for groceries. Then, a composite risk map was created by using these 7 significant layers, and the composite risk values were assigned to 60 neighborhoods.

The incident dataset of violent terrorism showed that some features of physical environment were targeted in about 40% of the total incidents. However, some of the targeted establishments (e.g. political party offices) were not significantly correlated with terrorism in the RTM. Theoretically, there should have been some concordance between the targeted features and significant correlate of terrorism in space. The incidents are identified as having occurred in particular locations because of the important targets that are there as identified by the police after the fact. But, the RTM analysis does not find these target types, instead identifying other features of the environment as statistically related. This result suggests that there is a difference between what the terrorists intend as the target and the type of infrastructure that is affected by the attack. In other words, regardless of the terrorists' intent, the significantly associated establishments are increasing risk in the surrounding areas where such things as bakeries, are located.

All analyses in the dissertation included the actual risk of terrorism coming from the environment, and it was not a significant predictor of the crime fear or the terrorism fear at the neighborhood level. This finding is important for the rationality of land users in their fear. The measure of terrorism consisted of questions asking the participants whether they were worried about being injured/killed or their property being damaged as a result of an attack in their neighborhood or city. Although the actual risk of terrorism varied in the 60 neighborhoods, it was not statistically significantly associated with fear. The assumptions in including the risk variable were that people may be aware of the actual terrorism in their neighborhoods, and they may be fearful if they have a mental map matching terrorism incidents with the objects surrounding them. If one considers the physical features in the environment as objects, the RTM test results, in fact, indicated that there was a significant pattern of objects around the incidents. The rationality requires individuals to recognize this patterns and become worried about the next experience. However, the results did not support the assumption of the rationality in fear.

Another aspect of the current study was to compare the terrorism fear to the crime fear. The determinants of the fear in the criminological literature were tested for fear of crime among the residents of Istanbul. Consistent with the literature, being female, previous crime victimization, perceived disorder, and subcultural diversity significantly predicted crime fear in the relevant models.

Collective efficacy was another significant regressor for fear of crime, but this association was not at the theoretically expected direction, and those neighborhoods with higher scores of mean perceived collective efficacy also had higher mean terrorism fear. On the other hand, the significant effect of the collective efficacy disappeared when it

was added in the full models. High perceptions of collective efficacy are theorized to have a negative impact on alleviating fear of crime among residents as “one is unlikely to intervene in a neighborhood context in which the rules are unclear and people mistrust or fear one another” (Sampson et al. 1997, p. 919). This unexpected relationship in the direction of the effect may be a result of either contextual difference or strong social ties. The collective efficacy has been found to decrease fear of crime in numerous studies (Gibson et al. 2002; Shambard, 2009; Swatt et al. 2013). However, all these studies were conducted in the US, and the sample in the current study was drawn from a different country with different cultural and social values in a different geographical location. It may also be that strong social ties increase the fear because, according to Bursik and Grasmick (1993), fear of crime will be higher in those neighborhoods with strong relational ties as every crime and victimization will be spread through relational ties among residents.

CHAPTER VI: CONCLUSIONS & IMPLICATIONS

Conclusions

This doctoral dissertation aims to understand fear of terrorism among residents of Istanbul. Unlike the fear of traditional crime, fear of terrorism is an understudied topic in criminology. Since a specific theoretical framework to explain fear of terrorism has not been accepted yet in the criminological literature, the current work borrowed the explanatory factors from criminological literature on fear of crime to conduct a better analysis in understanding the nature of terrorism fear. In this vein, three theoretical explanations to the occurrence of crime were used throughout the study because these theories also included propositions to explain the fear arousing from crime in physical and social environment. In addition to the criminological theories, one theory from the communication studies was used to take the effect of the media into account to understand terrorism fear because the incidence of terrorism has been very rare compared to traditional crimes. Therefore, the main assumption of this study was that media plays a key role in shaping fear of terrorism.

A review in the literature on crime fear showed that five common models have been used in empirical studies to explain fear of crime. These models have involved individual differences, neighborhood conditions, crime or risk of crime in a locale, and the level of contact with media agents about crime. However, few studies investigated the association of fear with crime in space. In fact, this relationship was viewed as paradoxical by various scholars in the field such that the fear might not be proportional to the occurrence of crime. When people are afraid of crime, they may either adopt more protection or withdraw from social life and become isolated. That is, many have argued

that people are irrational in their fear of crime, but this hypothesis has never been tested for terrorism.

Under the light of the discussions in the literature, the data were collected and combined from multiple sources to investigate terrorism fear in individuals. To understand the impact of the individual and community factors on terrorism fear, a community survey was used. The rationality in fear was controlled by the actual risk of terrorism, and the incident data from the police department were used for this purpose. The study made use of an innovative technique (RTM) to identify the risk of terrorism.

To the knowledge of the researcher, this is the first study that had the opportunity to compare terrorism fear to the fear of traditional crimes in the same sample. The inclusion of the crime fear in the analyses was important because the theoretical lenses used in the study had emerged in Western societies. Thus, the physical and social environment was different in sample from where these theories emerged. Therefore, the applicability of theories to Istanbul context was tested. Besides, the comparison of two types of fear enabled to test the dominant suggestion that crime is local issue while terrorism is international, thus social differences alone are not enough to explain terrorism fear.

Following the literature review and data collection, the RTM and HLM analyses indicated that the occurrence of terrorism was not random in Istanbul between 2008 and 2012. There was a pattern around particular features of the physical environment in the occurrence of violent terrorist acts, and the related risk of terrorism was not the same across all 60 neighborhoods of the community survey. Similarly, the average fear of terrorism and crime were not the same in neighborhood of interest. However, the

neighborhood factors including terrorism risk in the neighborhoods were not significantly associated with terrorism fear. On the other hand, the same characteristics of the neighborhood had significant impact on crime fear. Both types of fear only had resemblance in the influence of previous victimization of crime that was significantly correlated with both types of fear. But, the impact of the victimization on terrorism fear was insignificant when the level of the exposure to media coverage on terrorism was not included in the equation. Contrarily, the heavy exposure to violent media contents on terrorism was not associated with crime fear. All these findings can be interpreted in three ways. First, the fear arising from crime may differ by the type of crime. Though it is an emotional response, the determinants of terrorism fear may be different from crime fear. Second, the social and physical environment may be more important to shape crime fear than terrorism fear. Third, the influence of the media may differ by the content of the coverage. The survey measured how much participants were exposed to terrorism related media contents rather than the news on traditional crimes. Given that earlier research found the media consumption on crime to impact crime fear, the absence of a correlation between the media measure and fear of crime may result from the type of the content.

This investigation has also its limitations. Both types of fear were general. For example, the terrorism fear did not measure what specific type of terrorist act causes more worry in individuals. Likewise, the measure of the media consumption included a pool of all possible media agents, but which agent has more influence was not reflected. The use of agency data for the risk measure may not be accurate in respect for the addresses of incidents, though the addresses were confirmed using media news. External

validity is an issue in research, but the random sampling from a large population balances this concern.

Overall, this dissertation investigated how much the residents were fearful and how they differ in their personal and neighborhood characteristics, and linked their fears to these factors. The primary finding here was that those who consume more media coverage on terrorism were more likely to be fearful of terrorism, and the fear of crime was different in this respect.

Implications For Theory & Practice

As stated earlier, a clear theoretical mechanism has not yet been developed in criminological research to explain fear of terrorism. Different types of crime have been argued to involve different cognitive mechanisms (Ferraro, 1995). This dissertation lends partial support to this proposition. However, more work is needed to understand other correlates of the terrorism fear. For example, terrorism has its ideological component, and the general political or religious inclination of individuals in a location may play a role in this sense. The linkage between the fear of terrorism and media consumption as supported here. But, the future research should control this association with how much time a participant spends on the terrorism related contents. It is also important to include a measure of how largely the occurrence of terrorism takes place in the local and national media. More importantly, the accounts of those who report more fear of terrorism should be taken through qualitative efforts to understand the mechanism. The terrorism fear is rarely studied in the criminological literature, and the empirical studies have taken into account the contextual differences that might affect the conclusions resulting from statistical analyses. Therefore, this area of research should use more multilevel analyses.

In respect for policy, the media assures communication between the perpetrators, public, and the government. The media institutions may obtain information from the crime scene, public officials or politicians. As the findings of this dissertation suggested, the media shapes the fear of terrorism in people. According to Bakker and Graaf (2014), the fear of terrorism can be managed. When a terrorist act is committed, one task of the bureaucracy is to inform the public about risks and measures. In fact, the efforts in counter terrorism may result in mobilizing the public around images of fear (p.15). Such an exaggeration may associate animosity with particular individuals or groups. Therefore, the communication should be based on the impact of the incident rather than the underlying message and threats that the incident involves. It is also important to advise measures to the public after the incidents. All these approaches support positive coping mechanism. Otherwise, people are negatively affected by what they see in the media. There is no doubt that terrorist attacks are newsworthy; however, the selection of the tone, the style, the messages and media depiction of these news-casts are very important factors that media professionals consider in efforts to carry out their work with due diligence to prevent “double dose of televised reality” (Gerbner et al.,1980).

Though it was of secondary interest, this dissertation also mapped the risk of terrorism in space. Previous research on terrorism rarely examined the relationship between behavior and physical environment. The violent terrorist behavior showed a significant pattern around eight features in the environment. This finding has implications for crime prevention efforts. The risky areas in Istanbul were identified, and the proactive efforts against terrorism may be focused on these places.

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APPENDICES

Appendix A: Data Points & Sensitivity Analysis

Table 21. Illustration of Concepts, Data Sources and Measurement

A) Media & Fear of Terrorism Relationship			
Concept	Data Sources	Measure	Model Used
1. Fear of terrorism (Dependent Variable)	<ul style="list-style-type: none"> • Survey named as “Crime and Victimization in Istanbul Neighborhoods” • Secondary data • 60 neighborhoods were randomly selected • 1874 residents participated 	<ul style="list-style-type: none"> • Composite measure based on answers to multiple items (Ordinal) 	Hierarchical Linear Model to examine neighborhood effect on fear (Controlling for other variables from fear of crime literature)
2. Exposure to media (Main Independent Variable)	<ul style="list-style-type: none"> • Survey named as “Crime and Victimization in Istanbul Neighborhoods” • Secondary data • 60 neighborhoods were randomly selected • 1874 residents participated 	<ul style="list-style-type: none"> • Composite measure based on answers to multiple items (Ordinal) 	Hierarchical Linear Model to examine neighborhood effect on fear
3. Control variables	<ul style="list-style-type: none"> • Survey named as “Crime and Victimization in Istanbul Neighborhoods” • Secondary data • 60 neighborhoods were randomly selected • 1874 residents participated 	<ul style="list-style-type: none"> • Ordinal, and interval/ratio measures based on answers to multiple items 	Hierarchical Linear Model to examine neighborhood effect on fear
B) Spatial relationship between terrorist Incidents & residents fearful of terrorism			
Concept	Data Sources	Measure	Model Used
1. Terrorist Incidents	Agency Records (Counter Terrorism Department- TNP)	Point data: Addresses of the terrorist incidents committed between January 2008 and July 2012 (Nominal)	Risk Terrain Modeling to identify risk levels (or values) for each neighborhood.
2. Infrastructure	Agency records (Spatial data used for crime mapping in TNP)	Point data: Geographic features of Istanbul such as business, parks, government buildings, or schools	Risk Terrain Modeling to identify risk levels (or values) for each neighborhood.
3. Neighborhood level fear of terrorism	<ul style="list-style-type: none"> • A survey named as “Crime and Victimization in Istanbul Neighborhoods” • Secondary data • 60 neighborhoods were randomly selected 	Mean fear of terrorism at neighborhood level	Hierarchical Linear Model to examine the impact of terrorism risk in neighborhood on fear of terrorism.

C) Testing the representativeness of the data			
Concept	Data Sources	Measure	Model Used
Neighborhood Population	TUIK Census Data	Number of residents	Bivariate Correlation
Neighborhood Land Value	Istanbul Revenue Administration	Land values per square meter in Turkish Lira	Bivariate Correlation

Table 22. 1- Descriptive Statistics For Fear of Terrorism

Response	Point on Scale	Fear of Injury or Death as a Result of a Terrorist Offense in					
		Neighborhood		City		Country	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Not Worried at all	1	321	17.13	85	4.54	181	9.66
Not Worried	2	892	47.6	539	28.76	560	29.88
Somewhat Worried	3	229	12.22	299	15.96	301	16.06
Worried	4	355	18.94	838	44.72	740	39.49
Very Worried	5	77	4.11	113	6.03	92	4.91
Total		1,874	100	1,874	100	1,874	100

Response	Point on Scale	Fear of Property Damage as a Result of a Terrorist Offense in					
		Neighborhood		City		Country	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Not Worried at all	1	287	15.31	169	9.02	145	7.74
Not Worried	2	918	48.99	495	26.41	554	29.56
Somewhat Worried	3	218	11.63	257	13.71	312	16.65
Worried	4	362	19.32	869	46.37	797	42.53
Very Worried	5	89	4.75	84	4.48	66	3.52
Total		1,874	100	1,874	100	1,874	100



Figure 10- Linearity between fear of terrorism and exposure to media

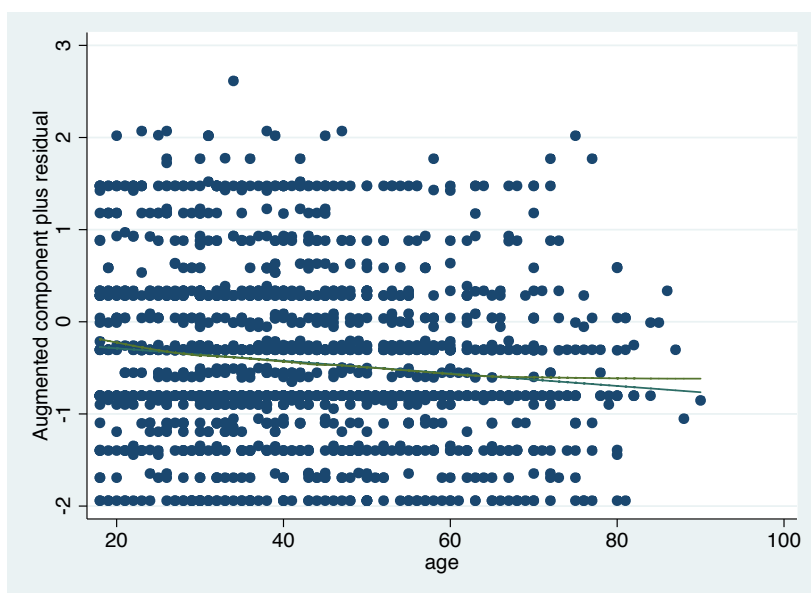


Figure 9- Linearity between fear of terrorism and exposure to age

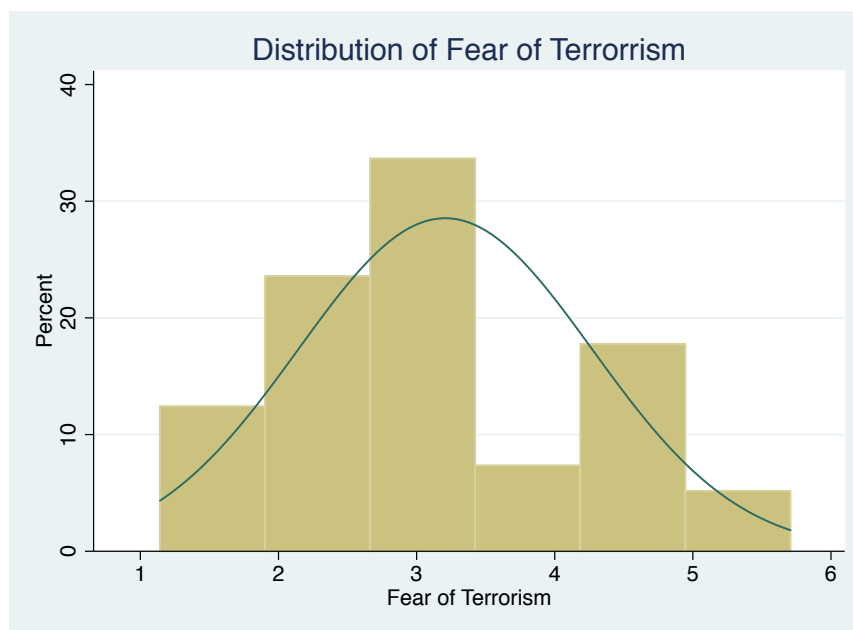


Figure 10- Distribution of standardized fear of terrorism scores among residents

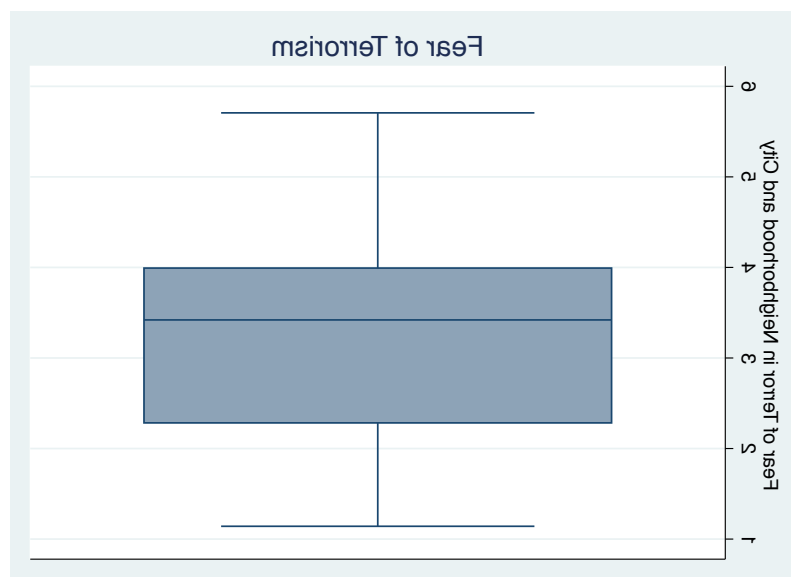


Figure 11- The boxplot of standardized fear of terrorism scores

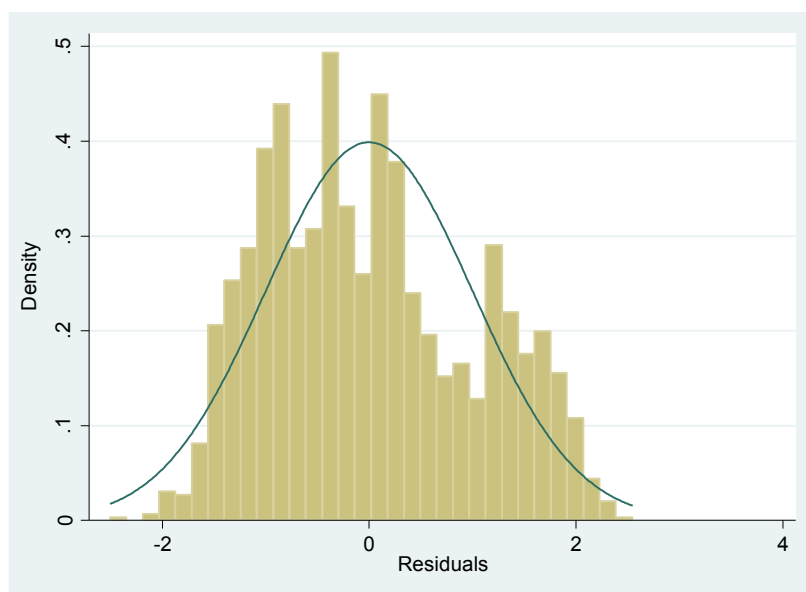


Figure 12- Histogram residuals OLS regression with level 1 variables (Terror Fear)

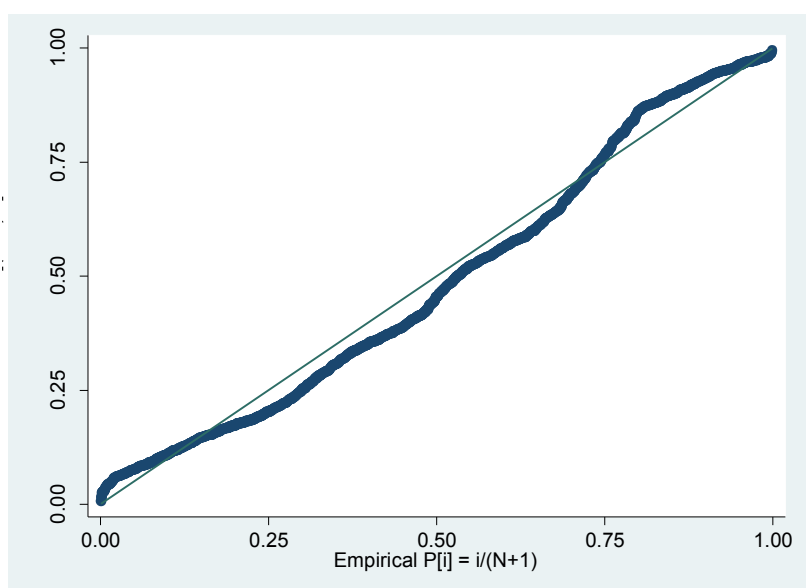


Figure 13- standardized normal probability plot for fear of terrorism.



Figure 14- Residuals versus predicted values plot for Fear of terrorism

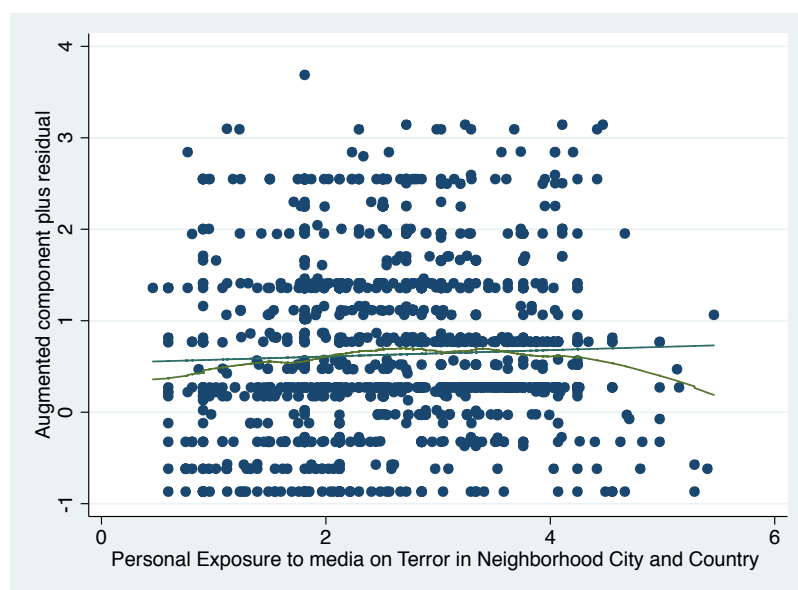


Figure 15- Linearity Between Fear of Crime & Media

Figure 16- Linearity Between Fear of Crime & Age

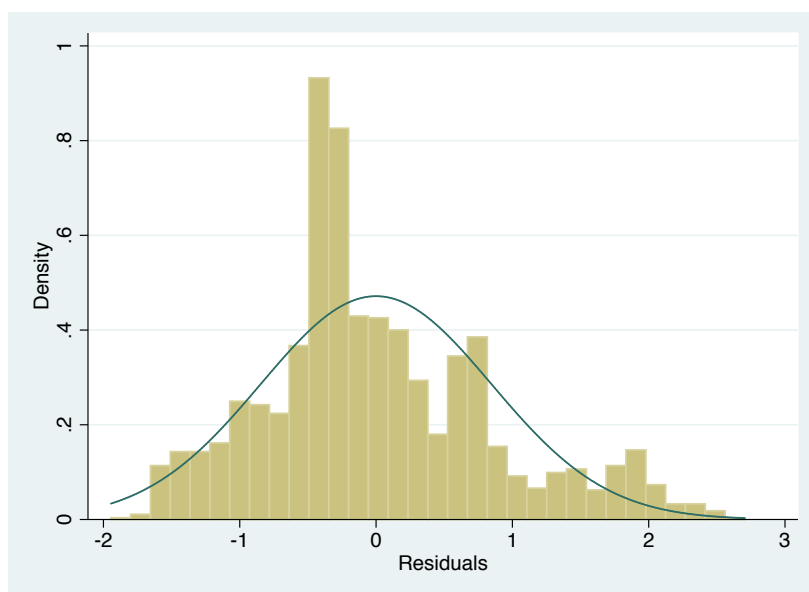
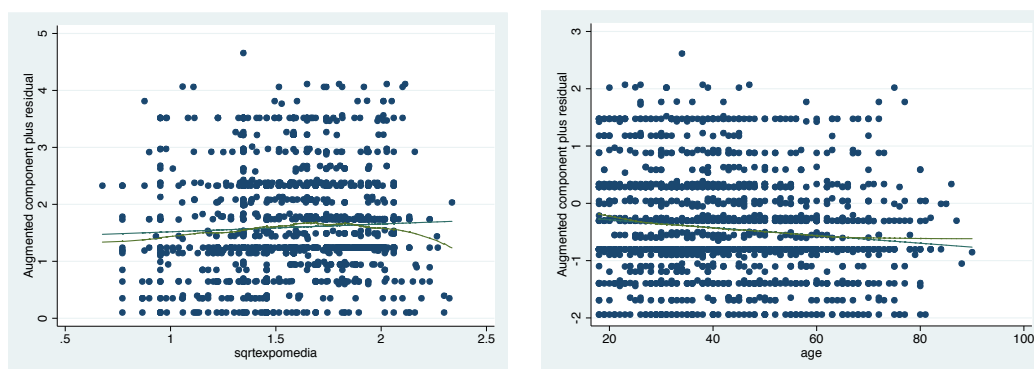


Figure 17- Histogram residuals OLS regression level 1 variables (Crime Fear)

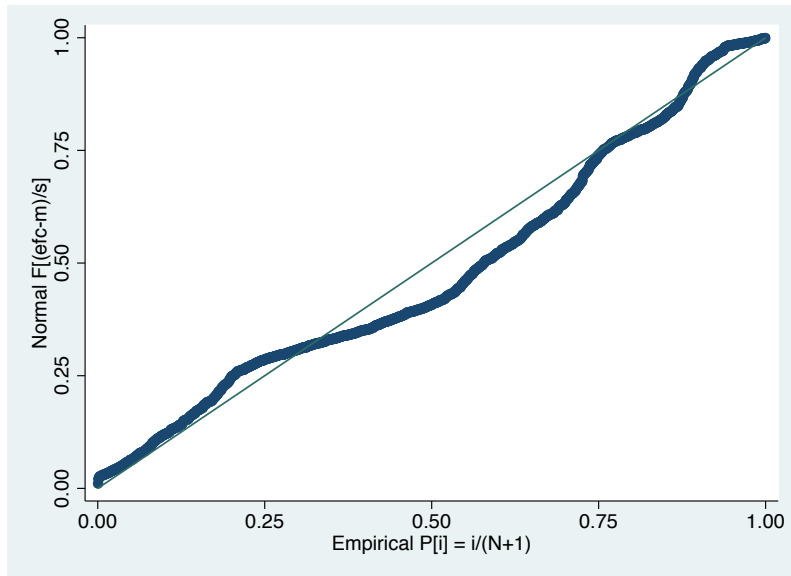


Figure 18- standardized normal probability plot for fear of crime

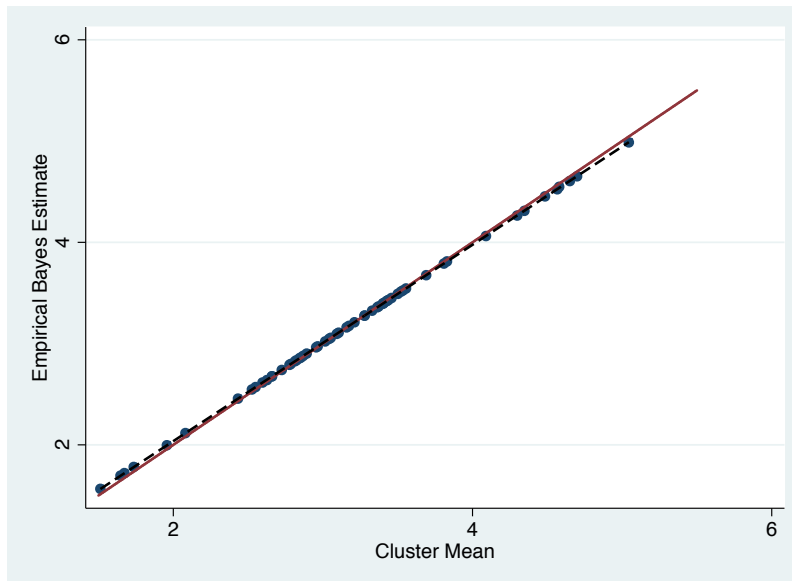


Figure 19- Empirical Bayes linear predictor vs. least squares linear predictor

Appendix B: Correlation Matrices

Table 23. Bivariate Correlation Matrix for Individual Level Variables

Level 1 Variables (N=1874)	Fear of terror	Exposure Media	Victim Crime	Victim Terror	Sex	Age	Marriage
Fear of terrorism	1						
Exposure to Media	0.32*	1					
Victim of Crime	0.02	0.02	1				
Victim of Terrorism	0.03	-0.01	-0.003	1			
Gender	-0.02	-0.01	-0.006	-0.02	1		
Age	-0.02	0.009	0.07*	-0.02	0.11*	1	
Marital Status	-0.009	0.02	0.004	0.03	-0.07*	0.23*	1
Fear of Crime	0.34*	0.04	0.04	0.05*	-0.04	-0.12*	-0.04

* p<0.05

Table 24. Bivariate Correlation Matrix for Neighborhood Level Variables

Level 2 Variables (N=60)	Fear of Terrorism	Terrorism Risk	Disorder	Collective Efficacy	Formal Control	Police Effectiveness	SES	Residential Stability	Heterogeneity	Subcultural Diversity
Fear of Terrorism (M=3.19, SD=0.77)	1									
Terrorism Risk	0.17	1								
Disorder	0.03	0.41*	1							
Collective Efficacy	0.28*	-0.02	0.35*	1						
Formal Control	-0.14	0.04	-0.17	-0.28*	1					
Police Effectiveness	-0.03	-0.20	-0.30*	-0.39*	0.66*	1				
SES	0.14	0.31*	0.08	0.03	0.18	-0.16	1			
Residential Stability	-0.09	-0.03	-0.17	-0.04	0.20	0.002	0.03	1		
Heterogeneity	0.04	-0.27*	-0.19	-0.15	-0.23	0.21	-0.54*	-0.37*	1	
Subcultural Diversity	0.20	-0.08	0.31*	0.02	-0.45*	-0.42*	-0.09	-0.16	0.12	1
Fear of Crime (M=2.62, SD=0.51)	0.40*	0.21	0.25	0.28*	0.02	-0.18	0.19	-0.01	-0.20	0.29*

* p<0.05

Appendix C: Authorizations & Approvals

1- Authorization for the use of dataset that is called as “ Crime and Victimization in Istanbul Neighborhoods”

DATE: 10/24/2013

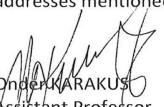
To Whom It May Concern:

We, Onder KARAKUS and Oguzhan BASIBUYUK, give authorization to Ismail ONAT, to use the dataset which was called " Crime and Victimization in Istanbul Neighborhoods" collected in 2012 in Istanbul. The data involves 1,874 respondents who were surveyed randomly in their households. Following official protocols, respondents were made aware of the risks and benefits involved in the study and were asked to voluntary partake in the study. The questionnaire was administered by a professional data collection company named "Server Research" located in Istanbul and contained various questions on crime and victimization in Istanbul neighborhoods.

We grant Ismail ONAT access to this dataset based on his request to work on his research on crime, victimization, police performance and neighborhood factors in Istanbul. The data had been already cleared of all identifying information before it was handed over to us. Therefore the data does not contain any identifying information names, phone numbers, and addresses. To further maintain confidentiality, the dataset will be transferred to Ismail ONAT on a 256-bit AES encryption external drive.

We also give Ismail ONAT authorization to use the analysis produced from the dataset for publication in scholarly peer-reviewed journals and books.

If you have any questions, please feel free to contact at phone numbers and email addresses mentioned below.


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Faculty of Security Sciences
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Oguzhan BASIBUYUK
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Faculty of Security Sciences
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2- Authorization for the use of data on the terrorist incidents (in Turkish)

T.C.
İÇİŞLERİ BAKANLIĞI
Emniyet Genel Müdürlüğü

Sayı : 45599763.43892(62185)/754

.../11/2013


Konu : Bilgi Talebi

Sayın: İsmail ONAT
4.Sınıf Emniyet Müdürü
Center For Law and Justice.
123 Washington Street
Newark, New Jersey, US.

İlgi : 14.10.2013 tarihli dilekçeniz.

"Suç Sosyolojisi" konusunda yapılacak akademik çalışmalara esas olmak üzere, ilgi sayılı dilekçeniz ile talep edilen ülkemizde meydana gelen terör olaylarına ilişkin bilgiler CD ortamında ekte gönderilmiştir.

Bilgilerinize rica ederim.


Cihangir ÇELİK
Terörle Mücadele Dairesi Başkanı
1.Sınıf Emniyet Müdürü

EK :
CD (1 adet)

3- IRB Exempt Approval

RUTGERS UNIVERSITY
Office of Research and Sponsored Programs
ASB III, 3 Rutgers Plaza, Cook Campus
New Brunswick, NJ 08901

May 23, 2014

P.I. Name: Onat
Protocol #: E14-728

Ismail Onat
123 Washington St
Newark NJ 07102

Dear Ismail Onat:

Notice of Exemption from IRB Review

Protocol Title: "The Impact of Media on Fear of Terrorism in Istanbul, Turkey"

The project identified above has been approved for exemption under one of the six categories noted in 45 CFR 46, and as noted below:

Exemption Date: 5/20/2014 **Exempt Category:** 4

This exemption is based on the following assumptions:

- **This Approval** - The research will be conducted according to the most recent version of the protocol that was submitted.
- **Reporting** – ORSP must be immediately informed of any injuries to subjects that occur and/or problems that arise, in the course of your research;
- **Modifications** – Any proposed changes MUST be submitted to the IRB as an amendment for review and approval prior to implementation;
- **Consent Form (s)** – Each person who signs a consent document will be given a copy of that document, if you are using such documents in your research. The Principal Investigator must retain all signed documents for at least three years after the conclusion of the research;

Additional Notes: None

Failure to comply with these conditions will result in withdrawal of this approval.

The Federalwide Assurance (FWA) number for Rutgers University IRB is FWA00003913; this number may be requested on funding applications or by collaborators.

Sincerely yours,



Acting For--
Dr. Beverly Tepper, Ph.D.
Professor
Chair, Rutgers University Institutional Review Board

cc: Dr. Leslie Kennedy

(MW:bk)

Appendix D: Detailed List of Items for Constructs

Dependent Variables:

Fear of Terrorism: How worried are you regarding the following situations;

Q314: “being injured or killed as a result of a terrorist attack in your neighborhood”,

Q315: “getting your property damaged as a result of a terrorist attack in your neighborhood”,

Q316: “being injured or killed as a result of a terrorist attack in Istanbul”,

Q317: “getting your property damaged as a result of a terrorist attack in Istanbul”,

Fear of Crime: How worried are you regarding the following situations;

Q67: “being victim of any crime when they were walking alone at night in their neighborhood”

Q68: “being victim of any crime at night when they were alone at home”

Q69: “being victim of any crime when they were walking alone during the day in their neighborhood”

Q70: “being victim of any crime during the day when they were alone at home”

Independent Variables:

Exposure to media: Which of the following events do you hear, read, or read on newspapers , magazines, radio, TV, or the internet? And how often?

Q322: “Coverage on any injury or loss of lives caused by a terrorist attack in Istanbul”

Q323: “Coverage on property damage caused by a terrorist attack in Istanbul”

Q324: “Coverage on any injury or loss of lives caused by a terrorist attack in any city around the country”

Q325: “Coverage on any property damage caused by a terrorist attack in any city around the country”

Terrorism Risk: Composite measure including in a 110x110 m. cell:

Violent terrorist incident

2 blocks distance to bakeries

2 blocks distance to religious facilities

3 blocks distance to bars/clubs-dense areas

3 blocks distance to groceries-dense areas

3 blocks distance to religious franchises

3 blocks distance to religious office blocks

2 blocks distance to NGOs

1 block distance to eateries-dense areas

Perceived disorder in the neighborhood includes two constructs:

How would you consider the following statements about your neighborhood as appropriate to the scale?

1- Physical disorder includes:

Q21: “there is too much garbage on the streets in my neighborhood”

Q22: “there are so many deserted buildings in the neighborhood”

Q23: “there are many abandoned vehicles in my neighborhood”

Q24: “it is common in my neighborhood to damage buildings and vehicles, and other personal properties”

Q25: “there is many anonymous graffiti on the sidewalks or building walls in the streets of my neighborhood”

Q26: “lighting is insufficient in my neighborhood, and there are many dark and secluded spots”

2- Social disorder includes:

Q27: “there is too much noise in the neighborhood”

Q28: “there is widespread panhandling in the neighborhood”

Q29: “it is common to see young people who idle and disturb the others in my neighborhood”

Q30: “ it is often to see the orphans or homeless sleeping benches in the streets or in abandoned building in my neighborhood at night”

Q31: “it is common to see people drinking alcohol in public and disturbing others under the influence”

Q32: “Drug use and dealing are widespread in my neighborhood”

Collective efficacy includes two constructs:

1- Cohesion and trust: How would you consider the following statements about your neighborhood as appropriate to the scale?

Q16 : "this is a close-knit neighborhood”

Q17 : "people around here are willing to help their neighbors"

Q18 : "people in this neighborhood generally don't get along with each other”

Q19 : “people in this neighborhood do not share the same values”

Q20 : “people in this neighborhood can be trusted”

2- Informal Social Control: How would you consider the statements below about the possibility of your neighbors doing something by intervening in the following events and situations?

Q33: “children were skipping school and hanging out on a street corner”

Q34 : “some children were spray-painting graffiti on a local building”

Q35 : “a child or adolescent were showing disrespect to an adult”

Q36 : “someone were threatened or beaten in a fight taking place in front of your house”

Q37 : “the police station closest to their home was threatened with budget cuts”

Formal control: How would you agree with the following statements as appropriate to the scale?

Q212 : Police provide services that we desire for our neighborhood

Q213 : Municipality provides services that we desire for our neighborhood

Q214 : Istanbul Governor provides services that we desire for our neighborhood

Q215 : District Governor provides services that we desire for our neighborhood

Q216: Neighborhood Headman provides services that we desire for our neighborhood

Police effectiveness (general): How effective are the police in the issues described below?

Q230: Rapid response to calls for service

Q231: Crime prevention

Q232: Immediate intervention in the incidents taking place

Q233: Apprehending suspects and bringing them to the justice

Q234 Regulating the flow of traffic and ensuring traffic safety

Q235: Maintaining order and safety in public places

Police effectiveness in counter terrorism: How effective are the police in the issues described below?

Q311: overall police are successful in preventing terrorist attacks in general

Q312: overall police are successful in the rapid intervention in terrorist attacks

Q313: overall police are successful in apprehending suspects in terrorist attacks, and bringing them in the justice

Socio Economic Status:

Q3: What is the highest educational institution that you graduated?

Q5: What is your employment status?

Q300: Which of the following ranges describes the total monthly income of your household?

Residential stability:

Q301: How long have been at this address?

Q302: Do you own this residence?

Heterogeneity:

Q296: Where were you born?

Subcultural diversity: how different do you see yourself from the other people in the neighborhood in respect for:

Q38 : “ethnic identity”

Q39 : “level of education”

Q40 : “religious values”

Q41 : “political opinions”

Q42: “overall lifestyle”

Previous victimization of crime:

Q77: “Have you ever been victimized one or more of the following 17 crimes over the past five years?”

Victimization of terrorism: Would like to answer the following questions about terrorist attacks?

Q333: Did you experience any damage to your property or belongings as a result of the terrorist attacks in the last 5 years?

Q334: Were you injured as a result of the terrorist attacks in the last 5 years?

Q335: Did any of your relatives or neighbors experience any damage to their property or belongings as a result of the terrorist attacks in the last 5 years?

Q336: Were any of your relatives or neighbors injured or killed as a result of the terrorist attacks in the last 5 years?

Age:

Q1: How old are you?

Gender:

Q2: What is your gender?

Marital status

Q4: Which of the following items describes your marital status best?